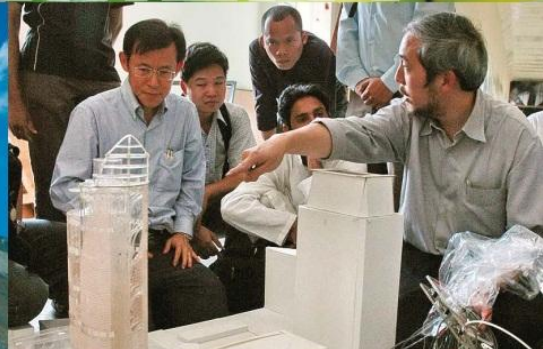
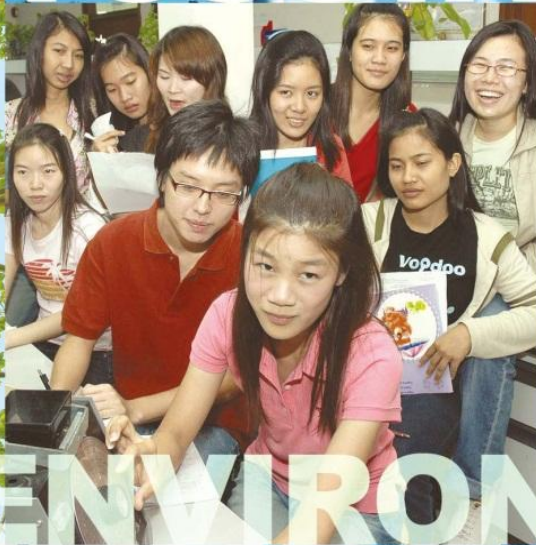




AIT
Asian Institute of Technology

ANNUAL REPORT ON
RESEARCH
2011



TOWARDS
A SUSTAINABLE
ENVIRONMENT
& FUTURE

PREFACE



In our research report for year 2010, I had made a point that our institute, the Asian Institute of Technology, will need to face up rapid dynamic changes as it moves into the future. The reasons for this, as pointed out at that time, was the rapidly changing needs in the region, funding mechanisms, student demands and employability, creation of public and privately supported graduate schools, provide better compensation to faculty and staff, need to enhance campus and laboratory infrastructure, develop professionally run professional programs, initiate new knowledge areas, etc.

The floods which inundated our campus on the 21st of October, 2011, forcing us to evacuate our campus temporarily, adds a completely new dimension to this picture. On the other hand, with the ratification of the new charter by six governments, our institute is now formally an international intergovernmental organization. The opportunities and challenges ahead of the institute are thus numerous. In the area of research and development, this will need to be translated into first, at least re-establishing the facilities we had, and second developing new programs and phasing out those which are not relevant anymore. It is another chance for us to develop some niche areas in which we will be recognized and accepted and remain ahead of the pack, while making a positive contribution to the region.

It is with this background that we have launched the AIT Research Strategy 2012-2016. This is first such strategy document for research in the history of the institute. While the work plans and facilitation will be done by the

Centre of Excellence in Sustainable Development in the Context of Climate Change, it is important that a majority of faculty and senior scientists participate and help in achieving its over all goals. The creation of stronger interdisciplinary teams, better networking and focus on some areas of research strength will lead to enhanced funding and help achieve the vision the institute has set for itself.

The number of research and development projects and related funding continues to grow, based on year 2005, but the type of areas which are being supported is evolving. We have over the years raised the bar for our graduating doctoral students, from submitting a manuscript of a paper to the requirement of having an accepted paper in an international reviewed journal. The recent additional requirement that the quality of the paper be assessed, by some acceptable quantification, is a step in the right direction. In the future, the support that graduate students get from funded research projects will be reflected in their ability to do useful work, and indeed on the quality of research.

I take this opportunity to thank all faculties, staff, students and indeed all stake holders who made it possible for me to carry forward some of the plans we have tried to implement at the institute. As pointed out above, the institute has been to set higher standards for itself and continues to make considerable contribution to the region and beyond. The new status the institution now has and contributions by all stake holders will I hope help the institute achieve new heights in the future.

*Good luck.
Professor Sudip K. Rakshit
Vice President for Research*

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Chapter 1 – INTRODUCTION

1.1 AIT Mission

The Asian Institute of Technology promotes technological change and sustainable development in the Asian-Pacific region through higher education, research and outreach. Established in Bangkok in 1959, AIT has become a leading regional postgraduate institution and is actively working with public and private sector partners throughout the region and with some of the top universities in the world.

Recognized for its multinational, multi-cultural ethos, the Institute operates as a self-contained international community at its campus located 40 km (25 miles) north of Bangkok, Thailand.

Besides the usual laboratories and academic buildings, the main campus includes housing, sports, and medical facilities, a conference center, and a library with over 230,000 volumes and 830 print and on-line periodicals. All serve to fulfill the AIT mission

to develop highly qualified and committed professionals who play leading roles in the region's sustainable development and its integration into the global economy.

1.2 AIT Vision

To become a leading and unique regional multicultural institution of higher learning, offering state-of-the-art education, research and training in technology, management and societal development.

With this clear, timeless vision, the multi-skilled team of students, faculty and staff at AIT are set to continuously strengthen the institution by becoming

- A trailblazer in advanced education in the region, with leadership in IT and new types of multidisciplinary programs
- An exemplary institution, with an emphasis on academic quality in terms of courses and other aspects of the operation.
- A leader in professional development programs.
- A hub for the implementation of regional/transnational research projects, and a research facility for academic professionals. The hub will network with other academic and research institutions in the region and the world.
- A model international citizen.
- A collaborator and partner of national postgraduate institutions.
- A financially viable, self-sustaining institution, able to draw support from donors, the private sector and individuals, with good governance and strong leadership.
- A strong partner to its alumni, who are principal stakeholders through the AIT Alumni Association (AITAA).



Chapter 2 – RESEARCH STATISTICS AND TRENDS, 2005-2011

2.1 Project Numbers and Budget 2005-2011

In line with the desire to impact on society by integrating academic research with industry and society's needs, AIT witnessed a good growth in the numbers of sponsored and contracted projects undertaken and that of publications between 2005-2011. **Figure 2.1** gives an overview of the trend of the ongoing sponsored and contracted projects for the period 2005-2011 both in and budget value terms and in terms of the number of ongoing projects undertaken during the same period.

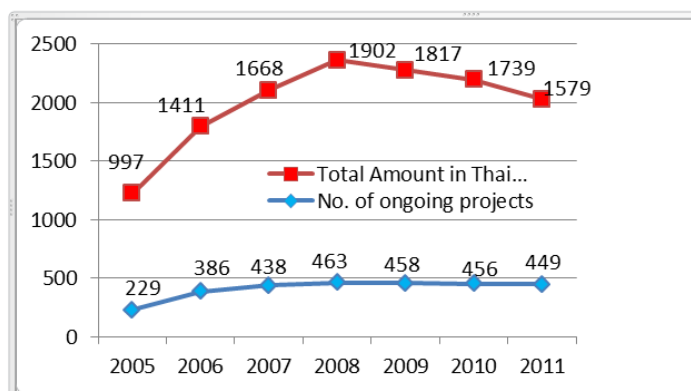


Figure 2.1: Project Budget is identified in Million ('000,000) Thai Baht.

2.2 Trend of the Ongoing Projects by Category

Sponsored and contracted projects undertaken at AIT are assigned under the Fund 30 which are categorized as Research and development which comprises Research, Capacity Building, Networking/Coordination, Training/Workshop and conference projects. The Academic Programs category comprises newly initiated

Professional programs conducted by the different schools and AIT Extension category comprises continuing professional education, short-course training and consultancy services. **Figure 2.2** provides the trend for the period 2005 – 2011 on budget value terms and **Figure 2.3** give the trend in terms of the number of ongoing projects under each category.

Publications over the years has seen an increase in the requirements in order to enhance quality of research from a time about a decade ago when doctoral students had only to submit a manuscript of a Paper before graduation, today all such students need to show acceptance of paper by an international and referred journal before they graduate. Publications in refereed Journals as one measure of productivity in the academic spheres increased with a high margin between 2009 and 2011 this .Discussions are being held to include additional criteria towards ascertaining the impact of such papers. **Figure 2.4** shows the trend of publications under the categories namely Referred Journal Publications, Doctoral Thesis, Master's Thesis as well as completed projects for the period 2005-2011.

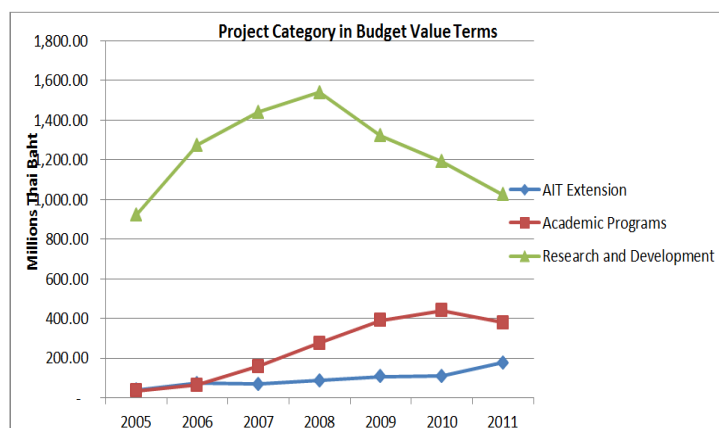


Figure 2.2 Budget Value terms 2005-2011

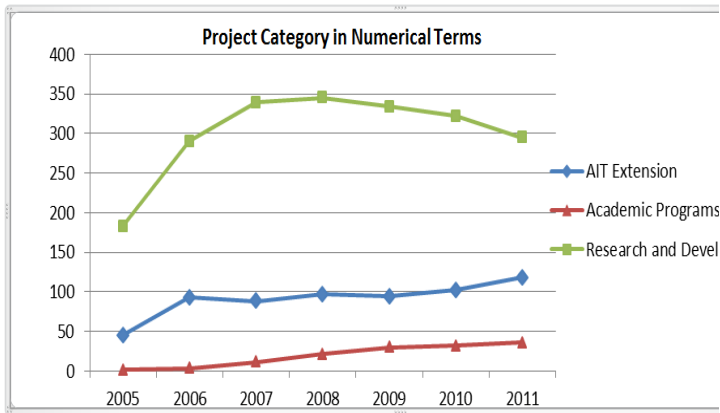


Figure 2.3 Numbers of Ongoing projects

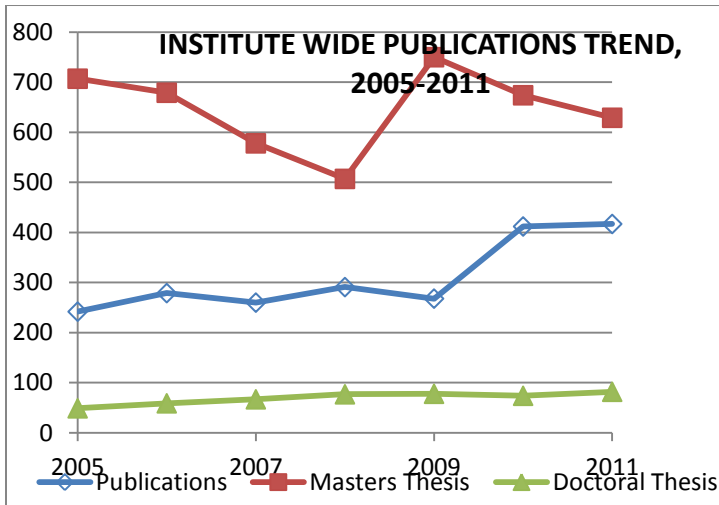


Figure 2.4: Institute Wide publications Trends

Over the years there has been a reduction in seconded faculty (supported by different countries). This led to a reduction in the total full time faculty (as they were not all replaced by direct hire faculty) and highlights the tremendous effort put in by our faculty and research staff. There has also been a subsequent increase in adjunct faculty who offer specialized courses and professional programs. Figure 2.5 below shows the trend in the Faculty strength grouped as Full time faculty and total faculty including adjunct, affiliated, visiting faculty, etc

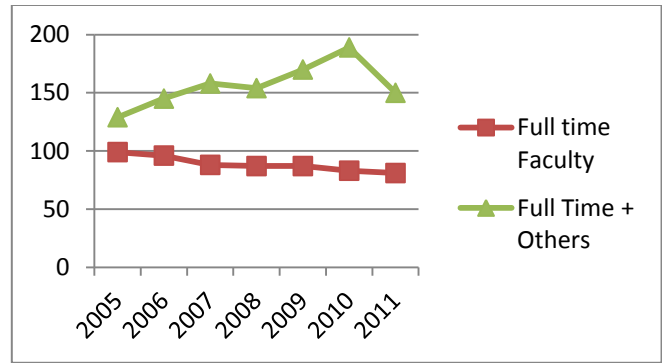


Figure 2.5: Faculty Strength 2005- 2011

Research excellence in an international institution of higher learning as AIT is linked with the graduate students we have. Figure 2.6 gives an institute wide trend on the intake, Enrolment and graduated student strength for the period.

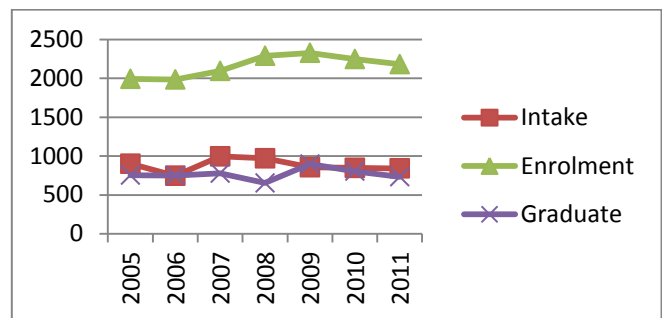


Figure 2.6: Instituted wide strength for the intake, Enrolment and graduated student strength for the period 2005-2011

2.3 Most cited papers in Scopus

Publication and citation information is considered one of the most widely recognizable indicators of research output and quality, and collection and analysis of this information is among means to judge alignment of the institutions research activities with its strategic priorities. Here below shows the top 5 most cited publications in Scopus lifetime. It is planned to have a year on year analysis in due course.

1. On the acceptability of arguments and its fundamental role in nonmonotonic reasoning, logic programming and n-person games (Cited 688 time(s)) 1995; Artificial Intelligence; Dung, P.M.
2. Direct solid-liquid separation using hollow fiber membrane in an activated sludge aeration tank (Cited 281 time(s)) 1989; Water Science and Technology; Yamamoto, K., Hiasa, M., Mahmood, T., Matsuo, T.
3. Developments in industrially important thermostable enzymes: A review (Cited 245 time(s)) 2003; Bio resource Technology; Haki, G.D., Rakshit, S.K.
4. Membrane separation bioreactors for wastewater treatment (Cited 164 time(s)) 2000; Critical Reviews in Environmental Science and Technology; Visvanathan, C., Ben Aim, R., Parameshwaran, K.
5. An abstract, argumentation-theoretic approach to default reasoning (Cited 162 time(s)) 1997; Artificial Intelligence; Bondarenko, A., Dung, P.M., Kowalski, R.A., Toni, F.

2.4 Top 6 Researchers with the Highest Number of Projects initiated 2006- 2011

The streamlining of Project management and corresponding incentives towards initiation of projects has helped reinforce the institutions research objectives and focus. **Table 2.1** highlights the top Researchers with the Highest Number of Projects initiated 2006- 2011.

Table2.1: Top 6 Researchers with the Highest Number of Projects initiated 2006- 2011

Name	No. of Projects as PI	No. of Projects as PI and Co-PI
Kanchana Kanchanasut	52	53
S Kumar	18	38
Mukand S. Babel	27	30
C Visvanathan	26	29
Kunnawee Kanitpong	24	28
Sudip K Rakshit	21	26

Chapter 3: SNAPSHOTS OF AIT RESEARCH IN 2011

3.1 Asian Regional Research Programme on Environmental Technology (ARRPET)

Environmental Impacts and Alternatives for Effluent Management in Shrimp Farming in Thailand



Research carried out by AIT in cooperation with King Mongkut's University of Technology Thonburi (KMUTT), Thailand as part of Wastewater Treatment and Management project under ARRPET

Principal Investigators:

Prof. Ajit P. Annachatre (Coordinator, ARRPET II)

Prof. C. Visvanathan

Dr. Nguyen Thi Kim Oanh

Prof. Chongrak Polprasert

EEM/SERD

Asian Institute of Technology

PO Box 4, Klongluang 12120

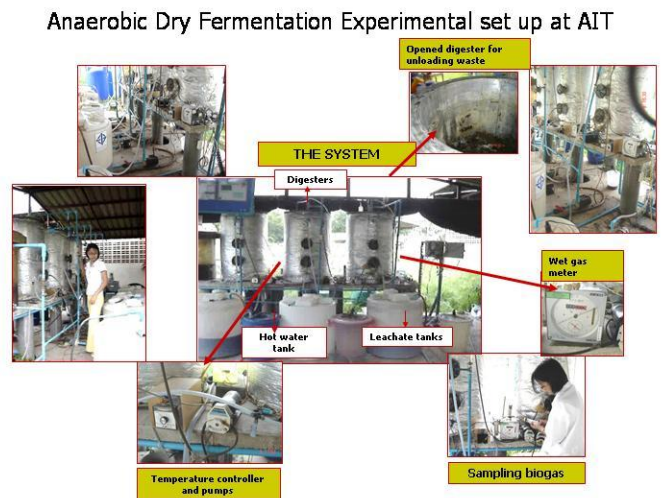
Thailand

Asian Regional Research Programme on Environmental Technology (ARRPET) was initiated to conduct research on environmental issues relevant to Asia. ARRPET is a network of institutions, which is dedicated to undertake research on environmental issues relevant to Asia for achieving the goal of sustainable development in the region. Coordinated by AIT and funded by Swedish International Development Cooperation Agency (Sida), ARRPET Phase II which is a continuation of ARRPET Phase I was implemented for a period of 7.5 years from January 1, 2004 – June 30, 2011. The programme had a financial

outlay of SEK 33.5 million. ARRPET Phase II involved 18 National Research Institutions (NRIs) from 8 Asian countries. Countries involved were China, India, Indonesia, Malaysia, Philippines, Sri Lanka, Thailand, and Vietnam. Research themes under ARRPET include Wastewater Treatment and Management; Sustainable Solid Waste Landfill Management in Asia; Improving Air Quality in Asian Developing Countries; and Industrial and Hazardous Waste Treatment and Management.

During Phase II project period, AIT and NRIs carried out individual and joint research activities in their respective fields. Activities under ARRPET II include continuation of laboratory investigations from ARRPET I and verification of laboratory results at pilot scale. During the project period at least 10 book chapters have been published. Over 500 journal papers have been published in international refereed journals and conferences. Over 100 seminar, training programs, conferences, workshops, symposium have been attended or conducted. Research activities under ARRPET Phase II have been conducted on a concept of networking involving networks at regional as well as national level. Internal as well as external linkages of the project activities were emphasized to broaden its prospect. The progress of research has been assessed through Annual Review Workshop attended by all NRIs. Besides this, Regional Workshop also have been undertaken so as to give common platform for NRIs for exchange of research findings and plans for future activities. Furthermore, the progress of the research was monitored through input from Swedish Resource Persons of each theme. The networking activities of ARRPET II were aimed at fostering closer ties among the various NRIs as well as being catalysts for the exchange of ideas, knowledge and expertise on specific topics. Each NRI established a network of researchers and policy-experts in their respective countries. The NRIs have also conducted National Workshops in order to facilitate exchange of views between researchers, experts from industry as well as policy experts from government institutions.

More details about ARRPET can be obtained from the programme website: <http://www.arpet.ait.ac.th>



Research carried out by AIT as part of *Sustainable Solid Waste Landfill Management* project under ARRPET

3.2 “Gender, cross-border migrant workers and citizenship: A case study of the Burmese-Thai border”

The “Gender, cross-border migrant workers and citizenship: A case study of the Burmese-Thai border” is a collaborative research between AIT (lead by Dr. Kyoko Kusakabe) and University of Leeds, UK (lead by Prof. Ruth Pearson) supported by IDRC Canada. The project team has also worked with MAP Foundation, Yaung Chi Oo Workers’ Association and Pattanarak Foundation.

The overall objective of the study was to examine the reality of migrant Burmese women factory workers as they participate in this specific moment of globalization of production. The research examined the ways in which the different state policies in Thailand, namely, the immigration policies, labour policies and border area development policies, interact to create a new group of cheap labour force in the border area, and how women migrant workers struggle for their dignity vis-à-vis the factory, their colleagues and their family members.

Aside from academic journal papers and conference papers, the project organized an art exhibition on the theme of precariousness of migrant workers as well as policy brief on labor migration in Thailand from a gender perspective, together with MAP Foundation. The research outcome has materialized in a book publication from Zed Books, London titled ‘Thailand’s Hidden Workforce: Burmese Women Factory Workers’ (2012).

3.3 Overview of the Capacity Strengthening on Hazardous Chemicals Management project

Inadequate management of treatment solution from hazardous and industrial wastes, hazardous chemicals, obsolete pesticides and persistent organic pollutants (POPs) pose a serious health and environmental hazards in all of the fast growing economies of Asia and the effects seem particularly more to poor people. There is an urgent need to have appropriate hazardous chemical management practices in order to handle the wastes and minimize the effects POPs toxic properties which transported globally, through air, water and migratory species, across international boundaries far from their source.

Accordingly, Capacity Strengthening on Hazardous Chemicals Management project focuses on building competence in emission and energy reduction, sound chemicals and waste management throughout Asia follows the aim of Basel, which to stimulate development local treatment options for hazardous wastes and to avoid shipment across borders. This can lead to reduce exposure, contamination, and emission to air which result in global benefit.

The ongoing cooperation between AIT and SINTEF has been successful in transferring theoretical knowledge and building capacity through AIT regular courses on “State of the Art of Hazardous Chemicals Management” and two regional seminars on “Hazardous Chemical Management” were organized in AIT, Thailand and HCMUT, Vietnam, as

well as establishment of cooperation with authorities and industry to solve POPs problems. Both AIT and SINTEF possess unique competence and experience with “immediately” available and affordable technologies which can significantly reduce the burden of hazardous chemicals in Asia, i.e. two test burns of hazardous chemicals in high temperature incinerator were carried out for PCB oil in Vietnam and for chlorinated pesticides in Thailand which the results are compiled and being disseminated/published, and development of new integrated treatment approaches on physic-biological assisted by nanometallic particles for hazardous chemicals remediation. The extension of the ongoing project will benefit from this invaluable experience of AIT and SINTEF



HAZARDOUS CHEMICALS MANAGEMENT: REGIONAL WORKSHOP
December 10-14, 2007; Pathumthani, Thailand

Jointly organized by:



3.4 Asia Link Internship Project

The EC funded project (Sept 1 2007 – Dec 2010) developed and established various internship programs in the field aquaculture and fisheries, and incorporated into curricula of all the partner institutions, namely; AARM, AIT (Coordinator); Bangladesh Agriculture University (BAU), Institute of Agriculture and Animal Science (IAAS), Nepal; Research Institute for Aquaculture No. 1 (RIA1), Hanoi and Nong Lam University, HCM City, Vietnam.

Major objectives were to help students get real field experience, develop entrepreneurial skills, make

aquaculture / fisheries education more relevant to the local contexts and strengthen the linkages between higher education institution and its industries.

Major outcomes of the project are:

1. Specialized internship programs have been developed which are running beyond the project period (see at <http://www.aarm-asialink.info/Placements.html>). An internship model (Fig. 1) is under expansion adding more partners and more countries
2. Over 100 post-graduate students of Asian students joined internship program (e.g. Fig. 2); more than double the number originally targeted
3. 25 students (Fig. 3&4), from western universities joined the internship in Asia more than 3 times the target; out of which; nearly three-fourth (18) were self-supported.
4. Linkages between post-graduate institutions and over 30 private farms/companies has been strengthened

Fig. 1: The internship model developed and under expansion

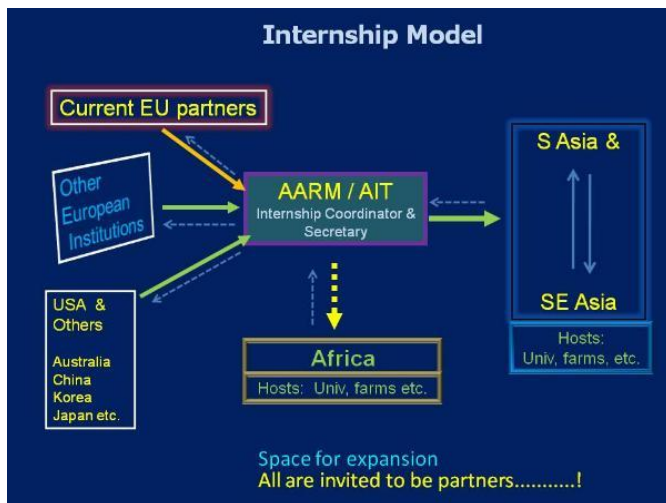


Figure 2 Celebration of intern’s day at Bangladesh Agriculture University (BAU), Mymensing, Bangladesh after the first batch of 11 students completed their internship working in fish farms. Interns were asked to present their work and given certificates of work experience.



Figure 3: Nicholas van Os worked at the hatchery as well as learned about how to produce millions of high quality tilapia fry



Figure 4: Mark Woollard (middle) from Swansea, UK shows his certificate received after the end of his internship period at AIT together with Txomin Azpeitia (left) from Spain and Joshua Cantrill (right) from UK

3.5 A Study on Seismic Design and Retrofit of Buildings in Thailand

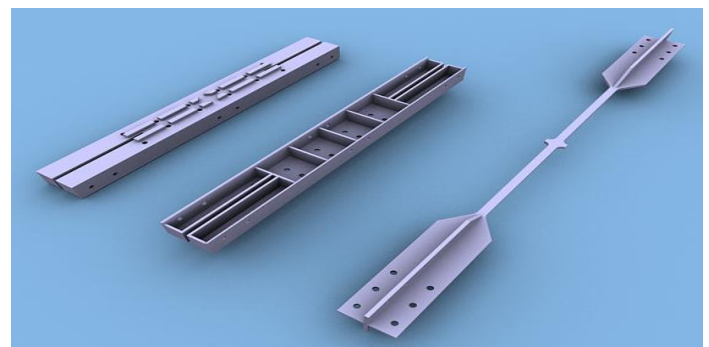
Role: Project Leader; Sponsor: Thailand Research Fund; Project duration: June 1st, 2011 to May 31th, 2013; Total budget: 5,181,000 Baht

Most buildings in Thailand have been designed and constructed without any consideration on seismic loading. In this project, information about buildings in Thailand will be collected and compiled. At least four buildings will be selected to represent typical school, commercial, apartment, and office buildings. The performance of these representative buildings when subjected to moderate to severe ground shakings will be evaluated by using computer models of the buildings that can simulate the effects of damage in their components. By this way, the damage extent and the safety of these buildings will be identified. Several retrofit measures to make these buildings more resistant to earthquakes will be examined, and practical and suitable measures will be identified. Preliminary guidelines for seismic retrofit of existing buildings are expected to be drawn from this

study. Parallel to the retrofit study, all these representative buildings will be re-designed by following a new national seismic design standard issued by the Department of Public Works and Town Planning. The effectiveness of the new standard in improving the seismic safety of these typical buildings will be examined. This research project is sponsored by the Thailand Research Fund (TRF). About 17 researchers and graduated students from 5 Thai universities and AIT are working together under this project. Dr. Pennung Warnitchai is serving as the project leader.



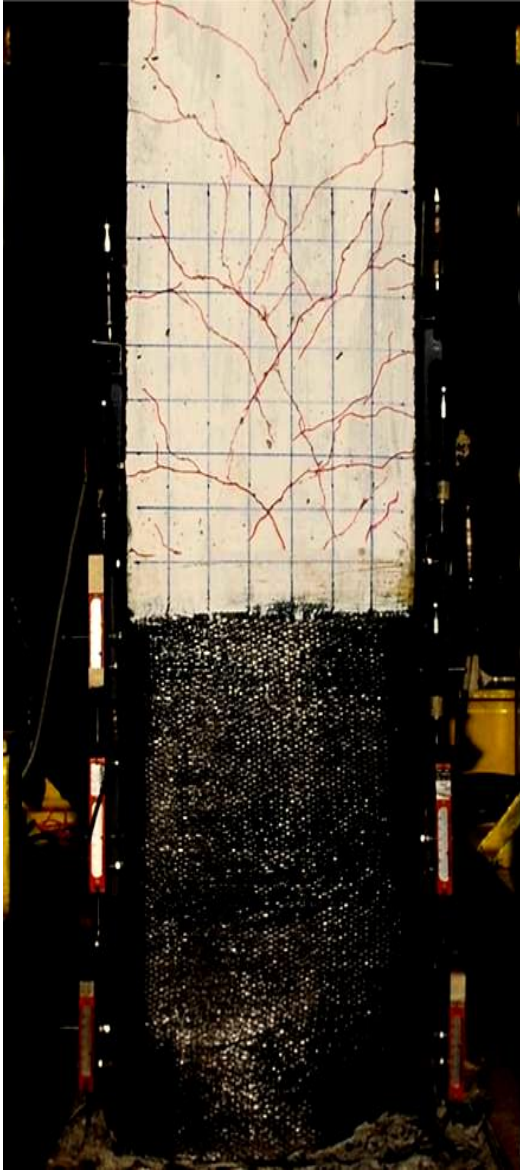
Picture 1a: (above) A scale-down physical model of reinforced concrete frame with buckling restraint braces (BRB). BRB is one of seismic retrofit measures to be considered in this study



Picture 1b: Components of a buckling restraint brace.



Picture 2a: (left) Reinforced column after subjected to earthquake-induced cyclic loads



Picture 2b: (right) Another column wrapped by carbon fiber reinforced polymer (CFRP) sheets after subjected to the same earthquake-induced cyclic loads

CFRP wrapping is one of the seismic retrofit measures considered in this study

Chapter 4: SCHOOL OF ENGINEERING AND TECHNOLOGY

4.1.1 VISION

The School of Engineering and Technology (SET) aims to become a unique and prestigious multicultural hub of higher learning in engineering and technology, offering state-of-the-art multidisciplinary programs and cutting-edge research in partnership with the industries for sustainable growth of the region. SET focus is on growth and long-term sustainability by enriching academic reputation and internationality.

4.1.2 CORE VALUES

Reflecting the uniqueness of AIT, the following core values are advocated by SET:

- **Excellence in teaching / learning**
- **Excellence in research**
- **Transparency of administration**
- **Quality assurance**
- **Unity in Diversity**
- **Culture of Collaboration**

School of Engineering and Technology (SET) is the biggest school in AIT with academic programs offerings in five countries: Thailand (mother campus), Vietnam, Sri Lanka, Nepal and Myanmar. The school is currently organized in three

thematic areas and 9 academic outreach centers.

SET emphasizes on a learning process that combines theoretical problem-solving and real life application of engineering principles. Its research orientation is outward-looking; addressing the actual and anticipated needs of the region. SET enhances its academic portfolio by emphatically injecting the “5I” features namely internationality, innovation, integration, information technology and industrial partnership. The school is currently working on the international accreditation process for all programs.

In 2011, SET's undergraduate programs further expanded and were strengthened by a thorough curriculum revision to make the programs consistent with each other and to make them compatible with the accreditation requirements of the engineering council of Thailand.

We plan, in addition to accreditation by the ABET

International accreditation body, to apply for accreditation by the engineering boards in each of the countries the program draws students from. We added a new

program Industrial Engineering, bringing the number of UG programs in SET to 8. The first UG batch entered its third year of study; the students already at the Bangkok campus were complemented by the arrival of the first group of third-year students from our 2+2 partnership with the South Asian Institute of Technology and Medicine (SAITM) in Sri Lanka. The second UG batch entered their second year of study with parallel groups at the Bangkok campus and SAITM. We also admitted the third batch into the first year, with parallel groups at AIT Bangkok, SAITM, and now the MCC Training Institute in Myanmar. In total, the UG program now has 135 students on the AIT campus and over 250 students at our partner institutes in Sri Lanka and Myanmar. In 2012, the number of students on campus will approximately double, and we will start a third 2+2 program in Nepal.

In line with the mission of the Institute, the mission of the School of Engineering and Technology is:

To develop highly qualified engineers and technologists who play leading roles in promoting the region's industrial competitiveness

in its integration into the global economy.

More information about the school can be accessed at the SET's homepage <http://www.set.ait.asia/>

4.1.3 Thematic Groups, Fields of Study and Multidisciplinary Programs

CIVIL AND INFRASTRUCTURE ENGINEERING GROUP

Since the founding of AIT, its civil engineering fields have promoted modern methodologies, emerging technologies and innovative materials for the design and construction of safe and economical infrastructure in the region. The Civil and Infrastructure Engineering group includes the following fields of study:

- 1) Construction, Engineering and Infrastructure Management (CEIM)
- 2) Geotechnical and Geo environmental Engineering (GGE)
- 3) Structural Engineering (STE)
- 4) Transportation Engineering (TRE)
- 5) Water Engineering and Management (WEM)

INDUSTRIAL SYSTEMS ENGINEERING GROUP

For several decades, AIT has served in the development of the region by equipping young engineers with the high-tech knowledge required to work in complex industrial environments. Since its inception, the Industrial Systems Engineering (ISE) thematic group at AIT has contributed to this mission by focusing on industrial competitiveness and innovation for sustainable growth in the region. The ISE group is comprised of the following fields of study:

- 1) Industrial and Manufacturing Engineering (IME)
- 2) Nanotechnology (NT)
- 3) Mechatronics (MEC)
- 4) Microelectronics and Embedded Systems (MES)

INFORMATION AND COMMUNICATIONS GROUP

Information and communications enable access, connections and sharing, in turn enable knowledge creation and economic opportunity. The fields in the Information and Communications group are:

- 1) Computer Science (CS)
- 2) Computer Science with specialization in Software Engineering
- 3) Information Management (IM)

- 4) Remote Sensing and Geographic Information Systems (RSGIS)
- 5) Telecommunications (TC)

Interdisciplinary Programs

- 1) Disaster Preparedness, Mitigation and Management (DPMM)
- 2) Gender, Transportation and Development (GTD)
- 3) Geo- Exploration & Petroleum Geoengineering (GEPG)
- 4) Information and Communications Technologies (ICT)
- 5) Offshore Technology and Management (OTM)

Undergraduate Programs

- 1) Civil and Infrastructure Engineering
- 2) Computer Science/Information Technology
- 3) Electronics
- 4) Industrial Engineering
- 5) Information and Communication Technology
- 6) Mechatronics
- 7) Telecommunications

4.1.4 Strategic Research Areas

The School of Engineering and Technology has identified broad research areas related to the strengths of its faculty, its curriculum and its existing facilities that are the building blocks for education niches in engineering and advanced technologies.

The following lists the information about the specific focal areas grouped by Fields of Study.

Computer Science and Information Management (CSIM)

Software Engineering and Development; Information and Knowledge Management

Industrial Systems Engineering (ISE)

Design and development of devices and sensors; Automation and control of machines; Product design and integration of machines and processes; Planning, operation, control and logistics of Industrial systems

Remote Sensing and Geographic Information Systems (RS&GIS)

Remote sensing (RS); Geographic information system (GIS); Global positioning system (GPS); Digital mapping technology; Digital photogrammetry

Telecommunications, Information and Communications Technologies (TC, ICT)

Mobile Communications; Teletraffic and Network Performance Analysis; Focal Area 3: Optical Networks

Advanced Infrastructure Development

- Application of new approaches and concepts in the development of infrastructure including innovative project financing
- PPP/PFI, integrated project management
- Infrastructure asset and valuation management, and infrastructure safety and security

Geotechnical and Geoenvironmental Engineering (GGE)

Sustainable geological exploitation for engineering activities; Design of safe structures; Disaster mitigation and rehabilitation

Structural Engineering

Computational Mechanics, Earthquake Resistant Design, Experimentation Methods, Advanced Structural Materials.

Transportation Engineering (TRE)

Transportation Logistics; Highway Pavement; Road Safety

Water Engineering and Management (WEM)

Integrated Water Resources Management (IWRM); Water Related Disaster Management (WRDM)

4.1.5 Academic outreach

Centers

The School of Engineering and Technology has a wealth of innovative and untapped knowledge database from its master's and doctoral research activities. Many outreach and research centers are set up to transform the knowledge into industrial needs. These centers also serve to transfer the practical aspects and the society impacts of the knowledge and technology back to the class room.

ACECOMS: Asian Center for Engineering Computations and Software

The prime mission of ACECOMS with 29 satellite centers in 21 cities in Asia and other regions carries out research in engineering computations, develops computer software tools for engineering applications, and conducts training in the effective use of latest computing technology. Visit ACECOMS:

<http://www.acecoms.ait.asia/>

ACSIG: Asian Center for Soil Improvement and Geosynthetic

ACSIG provides a strategic location for advanced technological education, researches and outreach activities on the application and effective utilization of ground improvement techniques. Visit ACSIG:

<http://www.set.ait.asia/acsig/>

ACTS: Asian Center for Transportation Studies

ACTS activities include modules on intelligent transportation systems, traffic simulation, freight transport, urban road safety and road safety audit. Visit ACTS:

<http://www.set.ait.asia/acts/>

Geo informatics Center

Geo informatics Center is dedicated to development and promotion of remote sensing research and activities in Asia-Pacific by sharing satellite data, research results and experiences with researchers in the region. Visit Geoinformatics Center

<http://www.geoinfo.ait.asia/>

Habitech Center

Habitech activities include research and outreach activities such as training in production and construction, provision of services associated with projects implemented by various organizations, agencies or the private sector. Visit Habitech:

<http://www.habitech-international.com/home.html>

International Ferro cement Information Center

IFIC coordinates the activities of the International Ferro cement Society (IFS) including publication of "Journal of Ferro cement", conducting continuing education courses and sponsored research projects in low-cost construction. Visit IFIC:

<http://www.set.ait.asia/ific/>

Regional Network Office for Urban Safety

The Regional Network Office for Urban Safety (RNUS) is a collaborative center jointly operated by the AIT and the University of Tokyo for the promotion of urban safety engineering utilizing advanced engineering technologies including remote sensing and GIS. Visit RNUS:

<http://www.set.ait.asia/rnus/>

Thailand Accident Research Center

The Thailand Accident Research Center is an offspring of MOTC's Road Safety Master Plan acknowledging the lack of information on accidents in Thailand and the need to establish TARC. TARC provides academic back up and a base for road safety research. Visit TARC:

<http://www.tarc.ait.asia>,
<http://www.tarc.or.th/>

AIT Center of Excellence in Nanotechnology

The Center of Excellence in Nanotechnology is jointly supported by Thailand's Nanotechnology Center (NANOTEC) and AIT, to cultivate and foster multidisciplinary activities including research and education in the applications of Nanotechnology in Developing World. Visit CoEN:

<http://www.nano.ait.asia>

4.1.6 Governance

Dean

NITIN V AFZULPURKAR, BEng, Univ of Poona, India; PhD, Univ of Canterbury, New Zealand
Associate Professor[Computer vision (pattern recognition and image processing); MEMS design, fabrication for electronic and bio medical applications; Soft computing algorithms for robotics and automation applications; Mechatronics applications for industrial use]

Associate Dean

NOPPADOL PHIEN-WEJ, BEng, ChulalongkornUniv, Thailand; MS, PhD, Illinois at Urbana-Champaign, USA.

Associate Professor (Tunnelling and other underground excavations in rocks and soils; Slope stability and retaining structures; Landslides; Earth structures and dams; Pile foundations; Buried pipes and culverts) [Soft ground tunnelling; Underground excavations in rock;

Deep excavations; Land subsidence from deep well pumping; Rock properties]

Associate Dean

NITIN KUMAR TRIPATHI, Ph.D. in Remote Sensing, Indian Institute of

Technology, Kanpur, India, 1994, M. Tech. in Remote Sensing, Indian Institute of Technology, Kanpur, India, 1987, B. Tech. in Civil Engineering, National Institute of Technology, Warangal, India, 1984

Associate Professor (Remote

Sensing and Geographic Information Systems; Information and Communications Technologies *Remote Sensing and Geographic Information Systems; Information and Communications Technologies*)

Chapter 4.2: SET –COMPUTER SCIENCE AND INFORMATION TECHNOLOGY FIELD OF STUDY

4.2.1 Introduction

Computer field of study

This field of study focuses on world-class teaching and research into the foundations and applications of computing systems. The curriculum covers a broad range of topics in computer systems, theory, software engineering, information science, and applications. The faculties are particularly active in artificial intelligence, security, computer graphics, machine learning and data mining, robotics, computer vision and image processing, software engineering, networking, simulation, and information systems.

The courses and research topics span the range from theory to practice. Students are encouraged to take courses and conduct research in areas related to computer science such as Information Management, Telecommunications, Information and Communication Technologies, Remote Sensing and Geographic Information Systems, Mechatronics, Microelectronics and Embedded Systems, Industrial Engineering, and other fields of study at the Institute.

Software Engineering Area of Study

In addition to the traditional Masters program in computer science, the Computer Science field of study also offers a Masters degree in computer science with specialization in software engineering. The Software Engineering Area of Specialization is specially designed to fill the Asia-Pacific region's need for highly-trained specialists in software development and the management of software development projects.

Information Management Field of Study

The Information Management field of study at AIT aims to fulfill the growing need for information management skills in government and private organization. It was the first program of its kind in Asia.

The field focuses on planning the effective use of information and communication technologies within organizations, developing corporate and government policies to maximize the benefits resulting from the wide-spread use of these technologies, improving the strategic management of information resources in business government, and non-profit

organizations, and increasing the productivity and creativity of managers and executives who work with information resources.

4.2.2 Research Facilities and Laboratories

CSIM Laboratories are well-equipped for teaching and research. The program maintains its own file, Web, email, and database servers for experimental and daily use. The teaching lab is kept up to date with modern desktop systems and can seat up to 60 students for practical sessions. Specialized equipment includes a 20-core Xeon grid computing cluster, a heterogeneous compute cloud, and experimental broadband satellite link to Japan and other countries in the region, video and image processing equipment, and augmented/virtual reality equipment. Full wireless coverage in the building allows students to conveniently work with their personal notebook computers.

Faculty and Research Staff

Full-time Faculty

KANCHANA KANCHANASUT, PhD, MSc, Computer Science, University of Melbourne, Australia; Graduate Diploma, Computer

Science, BSc Mathematics, University of Queensland, Australia.
Chair Professor, Thai Network Information Center (THNIC) and IntERLab Director (*Networking and Distributed Computing, Algorithms, Programming Languages*)

PHAN MINH DUNG, MSc, PhD, University of Technology, Dresden, Germany.

Professor (*Computer and Network Security, Autonomous Computing, Logic Programming, Artificial Intelligence*)

VILAS WUWONGSE, D.Engg. Systems Science, MEng Control Engineering, BEng Control Engineering, Tokyo Institute of Engineering, Japan.

Professor (*Information Representation, Semantic Web, Digital Libraries*)

SUMANTA GUHA, MS, PhD, University of Michigan, Ann Arbor, USA; PhD, Indian Statistical Institute, Calcutta, India; BSc, MSc, University of Calcutta, India.

Associate Professor (*Algorithms, Computer Graphics, Computational Geometry, Robotics*)

VATCHARAPORN ESICHAIKUL, BAcc, Chulalongkorn University, Thailand; MBA, Oklahoma State University; PhD, Kent State University, USA

Associate Professor (Electronic Commerce/Electronic Business, Web-based Information Systems,

Hypermedia, Electronic Government)

MATTHEW N. DAILEY, BSc, MSc, North Carolina State University, PhD, University of California, San Diego.

Assistant Professor (Machine Vision & Learning, Robotics, Software Engineering and Open-source Software Development)

PAUL JANECEK, BSEE, US Military Academy; MSc, University of London, UK; PhD, Swiss Federal Institute of Technology, Switzerland.

Assistant Professor (Human-Computer Interaction; Analysis and Design of Information Visualization Systems, Semantic Fisheye Views, Software Engineering and Open-source Software Development, and Information System Development)

Visiting and Adjunct Faculty

RAPHAEL DUBOZ, MA, University of Marseille, France; MA, University of Paris 6, France; PhD, University of Littoral Cote d'Opale, France.

Visiting Assistant Professor and Researcher in Centre de Cooperation Internationale en Recherche Agronomique Pour Le Development (CIRAD) (*Computing Modeling and Simulation, with Applications in the Environmental Sciences*)

FINN ARVE AAGESEN, MSc, PhD, Norwegian Institute of Technology, Norway.

Adjunct Professor and Professor in NTNU (*Telematics Systems, Telecommunication Information Networking Architecture, Services & Resource Management, Communication Services & Networks*) SANPARITH MARUKATAT, PhD, University Paris 6, MSc, University of Franche-Comte.

Adjunct Faculty (Multimedia Information Retrieval, Pattern Recognition using Statistical Tools, Sequence Modeling, and Statistical Learning Theory, Machine Learning)

PONGSATORN PETER SUKHUM, MSc, BSc, University of Manchester Institute of Science and Technology, Manchester, UK.

Adjunct Faculty (*System and Network Management of Mixed Operating System Environment for Software Development, Programming in Java with Eclipse.*)

Research Staff NAPASSAPORN LIKHITSAJJAKUL, MSc, Computer Science, Asian Institute of Technology, Thailand; BSc, Mahidol University, Thailand. RAMESH MARIKHU, M. Engg., Information & Communication Technologies, Asian Institute of Technology, Thailand; BEng, Kathmandu University, Nepal.

JEDNIPAT MOONRINTA, MSc, Computer Science, Asian Institute of Technology, Thailand; BEng, Computer Engineering, Chiang Mai University, Thailand.

CHAKLAM SILPASUWANCHAI, MSc, (First Class Honour), Computer Science, Asian Institute of Technology, Thailand; BSc, Sirindhorn International Institute of Technology, Thammasart University.

PHAN MINH THANG, MEng, Computer Science, Asian Institute of Technology, Thailand; BEng, Kaldol Kalman College, Hungary

4.2.3 Grants and Sponsored Research Completed in 2011

Suspicious Target Tracking Robot

Duration: 1-Aug-09 to 31-Aug-11
Project Investigator(s): Matthew N Dailey
Sponsor: RTG
Total Contracted Amount (THB)900,000

4.2.4 Publications

Book

Internation journal with implication factor.

Iqbal, W., Dailey, M.N., Carrera, D., and Janecek, P. (2011), Adaptive resource provisioning for read intensive multi-tier applications in the cloud. In press, Future Generation Computer System 27(6): 871-879. Elsevier. Impact factor: 2.229. Scopus citations:2.

Nakaguro, Y., Makhanov, S., and Dailey, M.N. (2011), Numerical experiments with cooperating multiple quadratic snakes for road extraction. In press, International

Journal of Geographical Information Science. 25(5): 765-783. Taylor and Francis. Impact factor: 1.533.

Rhienmora P., Haddawy, P., Suebnukarn, S., and Dailey, M.N. (2011), Intelligent dental training simulator with object skill assessment and feedback. Artificial Intelligence in Medicine 52(2): 115-121. Elsevier. Impact factor: 1.882.

Dung, P.M., Thang, P.M. (2011), Closure and consistency rationalities in logic-based argumentation, Logic Programming, Knowledge Representation, and Nonmonotonic Reasoning 2011: 33-43.

Dung, P.M., Sartor, G. (2011), The modular logic of private international law, Artificial Intelligence and Law, 19(2-3): 233-261

Moore, T., and Esichaikul, V., (2011), Socialization and software piracy: a study, Journal of Computer Information Systems, 51(3), pp. 1-9. Impact factor: 0.822

Esichaikul, V., Lamnoi, S., and Bechter C., (2011), Student modeling in adaptive e-learning systems, Knowledge Management & E-Learning, 3(3), pp 342-355.

Hanh, D.D., Dung, P.M., Hung, N.D., and Thang, P.M. (2011), Inductive defense for skeptical semantics of extended argumentation, Journal of Logic and Computation 21(2): 307-349.

Chuon, C., Guha, S., Janecek, P., Song, N.D.C. (2011), Simplipoly: curvature-based polygonal curve simplification. International Journal of Computer Geometry and Applications 21(4): 417-429.

Esichaikul, V., and Guha, S., Mining email transaction logs using multi-digraphs, invited submission International Journal on Advances in Information Sciences and Service Sciences, 2011, vol. 3, pp 39-45.

Journal Article/Book Chapter

Conference Publications

Baber, J., Afzulpurkar, N., Dailey, M.N., and Bakhtyar, M. (2011), Shot boundary detection from videos using entropy and local descriptor. International Conference on Digital Signal Processing (DSP), Corfu, pp. 1-6.

Iqbal, W., Dailey, M.N., and Carrera D. (2011), Policy learning for adaptive allocation of cloud resources to multi-tier Web applications. Poster presented at the 23rd ACM Symposium on Operating Systems Principles (SOSP), Cascais, Portugal.

Iqbal, W., Dailey, M.N., and Carrera, D. (2011), Black-box approach to capacity identification for multi-tier applications hosted on virtualized platforms. In International Conference on Cloud and Service Computing (CSC2011) Hong Kong, pp111-117.

Rasamoelina A.H., Duboz, R., Lancelot, R., Maminaiaina, O.F., Jourdan, M., Rakotondramaro, T.M.C., Rakotonjanahary, S.N., Servan de Almeida, R., Gil, P., and Albina, E., Martinez, D., Rakotondravao, R., Chevalier, V., Role of the trading network in the diffusion of Newcastle disease in the lake Alaotra region, Madagascar: a social network analysis. In Proceedings: Society for veterinary epidemiology and preventive medicine, pp. 193-204. 23rd-25th March 2011, Leipzig, Germany: Fourichon C., Pfeiffer D.U. and the SVEPM.

Bonte, B., and Duboz, R., A modular simulation tool to help designing epidemics surveillance: Work in progress. ICAHS Conference Lyon, France, 17-20 May 2011.

Miguel, E., Grosbois, V., Fritz, H., Boulonier, T., Caron, A., Cornelis, D., Duboz, R., and De Garine-Wichatitsky, M., Contacts and pathogen transmissions between wild and domestic ungulates at the periphery of protected savannah areas in Southern Africa. In: Elsevier. Third International Conference on Infectious Disease Dynamics (EPIDEMICS3), 29th November-2nd December 2011, Boston, USA.

Kalayanapan, N., Wuwongse, V., and Dittawit, K., A quality assurance support system for learning-object development, KMEL 2011: The 1st

International Symposium on Knowledge Management and E-Learning, 8-10 December 2011, Hong Kong.

Yoosooka, B., and Wuwongse, V., Linked open data for learning object discovery: adaptive e-learning systems, Third International Conference on Intelligent Networking and Collaborative Systems (INCoS 2011), 30th November-2nd December 2011, Fukuoka, Japan.

Esichaikul, V., Guha, S., and Juntapoln, C., Monitoring email transaction logs by text-mining email contents, Proc. 3rd International Conference on Data Mining and Intelligent Information Technology Applications (ICMIA 2011), Venetian, Macau, 2011 pp 446-449. Chairprasurt, C Esichaikul, V., and Wishart, J., (2011),

Designing mobile communication tools: a framework to enhance motivation in online learning environment, Proc. The 10th World Conference on Mobile and Contextual Learning, Beijing, China, 18-21 October 2011.

Julpisit, A., and Esichaikul, V., (2011), Knowledge sharing process in research project, Proceedings of the 7th International Conference on Computing and Information Technology, Bangkok, Thailand, 11-12 May 2011, pp. 83-88.

Rehman, M., and Esichaikul, V., (2011), Factors influencing the adoption of e-government in Pakistan, IEEE proceedings of the 2011 International Conference on E-Business and E-Government, Shanghai, China, 6-8 May 2011, pp. 7958-7961.

Doudpota, S.M., and Guha, S., Mining movies to extract song sequences, The Eleventh International Workshop on Multimedia Data Mining (MDMKDD 2011) at the ACM SIGKDD, San Diego, USA.

Janruang, J., and Guha, S., Semantic Suffix Tree Clustering, Proceedings 2011 International Conference on Data Engineering and Internet Technology (DEIT 2011), Bali, Indonesia, 2011, pp 35-40

Janruang, J., and Guha, S., Applying semantic suffix net to suffix tree clustering, Proceedings 2011 Third Conference on Data Mining and Optimization (DMO 2011), Putrajaya, Malaysia, 2011, pp 146-152.

4.2.5 Masters Students' Theses and Research Studies

Computer Science

Environment Modeling for an Outdoor Security Robot
By: Phongsathorn Eakamongul
Supervisor: Dr. Matthew Dailey

Thailand Travel Recommender System

By: Chadaporn Keatmanee
Supervisor: Dr. Sumanta Guha

Road Lane Estimation from a Moving Monocular Camera

By: Somchok Sakjiraphong
Supervisor: Dr. Matthew N. Dailey

Design and Evaluation of a Tool For Extracting and Visualizing Software Development Expertise

By: Sutatip Pittayapong
Supervisor: Dr. Paul Janecek

3D Virtual Model Construction and Visualization for an Agricultural Field Inspection Robot

By Atima Tharatipyakul
Supervisor: Dr. Matthew Dailey

Applying AI Planning on Dynamic Travel Scheduling

By Robin Chandra
Supervisor: Prof. Phan Minh Dung

A Generalized Architecture for Bookmark and Replay Techniques

By: Napassaporn Likhitsajjakul
Supervisor: Dr. Paul Janecek

Document Classification after Dimension Reduction through a Modified Gram-Schmidt Process

By Ananta Raj Lamichhane
Supervisor: Dr. Sumanta Guha

Event Based Service Discovery through Social Tagging Experience

By Anupong Muttaraid
Supervisor: Dr. Paul Janecek, Prof. Noel Crespi

A Quality Assurance Support System for Learning-Object Development

By Nopachat Kalayanapan
Supervisor: Prof. Vilas Wuwongse

A Linked Data Model and an Authoring Tool for E-Books

By Kornschnok Dittawit
Supervisor: Prof. Vilas Wuwongse

A Performance Measuring System in Educational Organizations: A Framework and System with Dashboard Module

By Patra A. Thamavithya
Supervisor: Dr. Vatcharaporn Esichaikul

Contextual Analysis of Refactoring on Software Quality in Code Evolution

By Chaklam Silpasuwanchai
Supervisor: Dr. Paul Janecek

Monitoring Email Transaction Logs by Text-Mining Email Contents

By Chanawut Juntapoln
Supervisor: Dr. Vatcharaporn Esichaikul

An Extended K-Means++ with Mixed Attributes for Outlier Detection

By Sarunya Kanjanawattana
Supervisor: Assoc. Prof. Sumanta Guha

A User Modeling for Learning Management Systems

By Than Htut Soe
Supervisor: Prof. Vilas Wuwongse

Logic-Based Online Advertisements

By Jiraporn Pooksook
Supervisor: Prof. Phan Minh Dung

Thailand Personal Income Tax Advisory System

By Thaweepol Nuangnong
Supervisor: Prof. Phan Minh Dung

Correlation between Code Smell and Understandability

By Benjawan Tanarattanakorn
Supervisors: Dr. Matthew N. Dailey, Dr. Paul Janecek

A Linked Thai Herb Information System

By Pasinee Apisakmontri
Supervisor: Prof. Vilas Wuwongse

Information Management

Online Project Management Information System for Construction SMEs

By Jie Qiu
Supervisor: Dr. Vatcharaporn Esichaikul

Simulation Based E-Learning: A Case Study of Supply Chain Management Courses

By Le Thi Thuy Lan
Supervisor: Dr. Vatcharaporn Esichaikul

Chromatic Restoration of Image Sequences for Agricultural Field Sensors

By Watchara Sriswasdi
Supervisor: Dr. Matthew Dailey

Citation Analysis: The Cases of Google Scholar and Scopus

By Tin Tin Aye
Supervisor: Prof. Phan Minh Dung

*A Research Support System using
Sematic Web Technology*
By Sumalee Saehear Supervisor:
Prof. Vilas Wuwongse

*Extension of Heuristic Evaluation
Method for Evaluating Government
Websites: A Case Study of Lao PDR*
By Vilachith Phommasack
Supervisor: Dr. Vatcharaporn
Esichaikul

*Product Promotion Using Semantic
Web Technology*
By Pinthip Saengchoowong
Supervisor: Prof. Vilas Wuwongse

Chapter 4.3: SET CONSTRUCTION ENGINEERING AND INFRASTRUCTURE MANAGEMENT FIELD OF STUDY

4.3.1 Introduction

The Construction, Engineering and Infrastructure Management field trains professionals to play leading roles in the international construction industry and in infrastructure development and management. It offers courses in four levels - operations, project, strategic issues and corporate issues. It prepares students to become effective managers and decision-makers familiar with modern techniques of construction management, engineering management and infrastructure management.

The field's courses are delivered based on a hierarchical knowledge scale that considers principles and fundamentals, applications (tools and techniques), and emerging issues. In offering courses spanning fundamentals to advanced, the emphasis is on shifting from classical to innovative knowledge.

4.3.2 Faculty and Research Staff

CHOTCHAI CHAROENNGAM, BEng, King Mongkut's Inst of Tech, Thonburi, Thailand; MS, Univ of Kansas; PhD, Univ of Texas at Austin, USA

Associate Professor (Project Planning, Scheduling, and *Controls; Construction Productivity Improvement; Public Private Partnership Project; Project Financing*)

BONAVENTURA H W HADIKUSUMO, BEng, Univ of Diponegoro, Indonesia; MEng, AIT; PhD, Univ of Hong Kong.

Associate Professor (*Construction Information Technology; Construction Project Management; Construction Site Safety, Virtual Reality application in construction; Web-based project design and management; System Dynamic Simulation in Construction; Construction site safety*)

4.3.3 Grants and Sponsored Research Completed in 2011

Professional Master in Project Management Ho Chi Minh City Class A Sep 2010

Duration: 1-Sep-10 30-Apr-11
Project Investigator(s): "BHW Hadikusumo, Chotchai Charoenngam"
Sponsor: Construction Corporations in Vietnam
Total Contracted Amount (THB):7,684,377

Professional Master in Project Management Ho Chi Minh City Class B Sep 2010

Duration: 1-Sep-10 30-Apr-11
Project Investigator(s): "BHW Hadikusumo , Chotchai Charoenngam "
Sponsor: Construction Corporations in Vietnam
Total Contracted Amount (THB):7,018,758

Professional Master in Project Management Can Tho City 2010

Duration: 1-May-10 31-Dec-11
Project Investigator(s): "BHW Hadikusumo, Chotchai Charoenngam "
Sponsor: Construction Corporations in Vietnam
Total Contracted Amount (THB): 6,142,608

Professional Master in Project Management Hanoi Sep 2010

Duration: 1-Sep-10 30-Apr-11
Project Investigator(s): "BHW Hadikusumo ,Chotchai Charoenngam "
Sponsor: Construction Corporations in Vietnam
Total Contracted Amount (THB): 5,105,310

4.3.4 On-going Grants and Sponsored Research

Professional Master Project Management Hanoi September 2011

Duration: 1-Sep-11 31-Dec-12
Project Investigator(s):"BHW

Hadikusumo ,Chotchai Charoenngam
Sponsor: Construction Corporations in
Vietnam
Total Contracted Amount
(THB):4,536,630

**Professional Master Project
Management Ho Chiminh Class A
September 2011**

Duration: 1-Sep-11 31-Dec-12
Project Investigator(s): "BHW
Hadikusumo, Chotchai Charoenngam"
Sponsor: Construction Corporations in
Vietnam
Total Contracted Amount (THB):
6,216,630

**Professional Master Project
Management Ho Chiminh Class B
September 2011**

Duration:1-Sep-1131-Dec-12
Project Investigator(s): "BHW
Hadikusumo ,Chotchai Charoenngam "
Sponsor: Construction Corporations in
Vietnam Total Contracted Amount
(THB): 6,507,000

4.3.5 Publications

**International Journal Articles with
Impact factor**

A. Hastheetham, B.H.W.
Hadikusumo. Theoretical
framework of strategic behaviors in
Thai Contractors: an empirical case
study. *Journal of Engineering,
Construction and Architectural
Management*, Vol. 18 No. 2, 2011.

B. Jitwasinkul, B.H.W. Hadikusumo.
Identification of important
organizational factors influencing
safety work behaviours in
construction projects. *Journal of Civil*

Engineering and Management, ISSN
1392-3730 print/ISSN 1822-3605
online, Vol. 17(4): 520-528, 2011

4.3.6 Masters Students' Theses and Projects

*Claims in Building Construction of
Pakistan: Statistical and Pathogenic
Analysis*

By Hassan Ashraf
Supervisor: Dr. Chotchai Charoenngam

*Effective Pricing Negotiation
Strategy of Variation Claims in*

Commercial Building Construction
By Supatchana Pumpipat
Supervisor: Dr. Chotchai Charoenngam

*The On-Site Behavior of a
Construction Project Team during
the Implementation of the Planning
and Quality System*

By Janeyut Naiyarat
Supervisor: Dr. Chotchai Charoenngam

*Development of Worker Safety
Attitude Construct and Model in Oil
& Gas Construction Projects*

By Thanapon Buaklom
Supervisor: Dr. B. Harimurti W.
Hadikusumo

*Quality Management System for
Different Construction Project
Strategies*

By Kittawat Sukosi
Supervisor: Dr. B. Harimurti W.
Hadikusumo

*Sustainable Construction: A Study of
Drivers, Barriers and Design
Practices in Building Projects in
Thailand*

By Asmat Nabi Hotaki

Supervisor: Dr. B. Harimurti W.
Hadikusumo

*Factors Affecting Constructability
Practices in Hydropower
Construction in Nepal*

By Mukesh Khadka
Supervisor: Dr. Chotchai Charoenngam

*Orientation Risk Management Model
for Pre-bidding Process in Low-
Income Housing Projects with Public
Private Partnership in Vietnam*

By Vu Tuyet Mai
Supervisor: Dr. Chotchai Charoenngam

*Insurance and Surety Bonds: A Case
Study of Petrochemical, Oil and Gas
Projects in Myanmar and Thailand*

By Kyawt Phyu Phyu
Supervisor: Dr. B. Harimurti W.
Hadikusumo

*Factors Affecting the Performance of
the International Construction
Contractors (ICCs) doing Business in
Cambodia*

By Hout Venghong
Supervisor: Dr. Chotchai
Charoenngam Contractor

*Prequalification Criteria, Tendering
Criteria, and Tendering Procedure in
Cambodia Building and Housing
Construction Projects)*

By Puoy Puthitha
Supervisor: Dr. B. Harimurti W.
Hadikusumo

*Life Cycle Cost Analysis for
Hydropower Projects*

By Kyaw Min Thu
Supervisor: Dr. Bonaventura H.W.
Hadikusumo

Resources Allocation Strategy for Construction Safety at Hydropower Project: A Study on Shwegyin Hydropower Project in Myanmar
By Pye Phyo Maung
Supervisor: Dr. Bonaventura H.W.
Hadikusumo

Strategic Management Implementation of Vietnamese Construction Organizations
By Nguyen Tuan Tu
Supervisor: Dr. B. Harimurti W.
Hadikusumo

Influence of Financial Risk for Project Financing throughout Real Estate Development Process: A Case Study of a High Rise Apartment Project in Vietnam
By Nguyen Quoc Trung
Supervisor: Dr. Chotchai Charoenngam

Factors Affecting Operation and Maintenance Costs of Ho Chi Minh City Condominium Projects
By Duong Quang Minh
Supervisor: Dr. Chotchai Charoenngam

Project Procurement Performance Models: A Case Study of Power Transmission Line Projects in EVN
By Nguyen Phung Hai
Supervisor: Dr. Bonaventura H.W.
Hadikusumo

Project Life Cycle Risk Management Plan in an Urban Railway Development Project: A Case Study of Urban Railway Development Applied in Vietnam
By Gentaku Goto
Supervisor: Dr. Chotchai Charoenngam

Project Management Competencies of Building Construction Projects in Myanmar
By Khaing Kay Thwe
Supervisor: Dr. Bonaventura H.W.
Hadikusumo

Project: Sensitivity Analysis of the New Automobile Showroom Project
By Bui Kim Binh
Supervisor: Dr. Chotchai Charoenngam

Project: Quality Management System for Construction Material Testing: A Case Study of Jupiter Inspection J/S Company
By Nguyen Thi Vui
Supervisor: Dr. Bonaventura H.W.
Hadikusumo

Project: Risk Management on New Residential Development Project: A Case Study of Vo Minh Duc Project in Binh Duong Province
By Bui Hai Nam
Supervisor: Dr. Chotchai Charoenngam

Project: Project Schedule Internal Risk Management in EPC Gas Pipeline Project: A Case Study of Block B-O Mon Gas Pipeline Project
By Pham Binh Lam
Supervisor: Dr. Bonaventura H.W.
Hadikusumo

Project: Business Cooperation Contract Management in Gas Pipeline Project: A Case Study of Block B-O Mon Gas Pipeline Construction Project
By Phung Quang Hiep
Supervisor: Dr. Bonaventura H.W.
Hadikusumo

Project: Risk and Project Contract Management for Preventing and Solving Disputes in Fidic Contract: A Case Study of Can Tho Bridge Construction Project
By Dang Thai Son
Supervisor: Dr. Chotchai Charoenngam

Public Private Partnership in Urban Development: A Case Study of "5A" Urban Development and Resettlement Project in Soctrang City, Vietnam
By Nguyen Thanh Trong
Supervisor: Dr. Chotchai Charoenngam

Project: Owner's Contract Management Strategy for Housing Project : A Case Study of Residential Project in Cantho City
By Le Minh Nhut
Supervisor: Dr. Chotchai Charoenngam

Project: Project Management Strategies in Public Construction Project: A Case Study of Cantho University's PMU and Dormitory Project
By Ta Chi Nhan
Supervisor: Dr. Bonaventura H.W.
Hadikusumo

Project: Red Book Fidic Contract Management and Problems: A Case Study of Wastewater Disposal in the Provincial Towns, Progame South of Can Tho City
By Pham Thanh Trung
Supervisor: Dr. Chotchai Charoenngam

Project: Project Management in New Urban Project: A Case Study of Hung Phu New Urban Area Project in Cah Tho City, Vietnam

By Huynh Thanh Su
Supervisor: Dr. Bonaventura H.W.
Hadikusumo

Project: *Improvement of Organizational Structure for Power Plant Project Management of Petrovietnam*

By Le Anh Thong
Supervisor: Dr. Bonaventura H.W.
Hadikusumo

Project: *Project Organization and Responsibilities Management in Construction Projects: A Case Study of Gas Pipeline Block B-Omon Project*

By Nguyen Viet Hien
Supervisor: Dr. Chotchai Charoenngam

Project: *EPC Commissioning Strategy for Gas Pipeline Project: A Case Study of Block B-O Mon Gas Pipeline Project*

By Le Quang Son
Supervisor: Dr. Bonaventura H.W.
Hadikusumo

Project: *Owner's Project Quality Management. A Case Study of Northern PVOIL Petron Station*

By Doan Thai Duong
Supervisor: Dr. Bonaventura H.W.
Hadikusumo

Project: *Safety and Health Management in Oil and Gas Construction Projects: A Case Study of Block B-O Mon Gas Pipeline Construction Project*

By Pham Van Hung
Supervisor: Dr. Bonaventura H.W.
Hadikusumo

Project: *Delay and Contract Management in Construction: A Case Study of Administration Centre and*

Postgraduates Trainings at Can Tho University

By Ho Chi Linh
Supervisor: Dr. Chotchai Charoenngam

Project: *Management of Road System Construction under the General Construction Planning by the Year 2020 of Cau Giay District, Hanoi City*

By Le Van Thu
Supervisor: Dr. Chotchai Charoenngam

Project: *Quality Management for Building Construction Projects: A Case Study of Residential Area for Cantho University Students*

By Le Thanh Phieu
Supervisor: Dr. Bonaventura H.W.
Hadikusumo

Project: *Development of a Quality Management System in a Hospital Development Project: A Case Study of the Projects Management Board of Investment and Construction of Thoi Lai Districts*

By Nguyen Tien Thuc
Supervisor: Dr. Bonaventura H.W.
Hadikusumo

Project: *Delays in Flood Prevention Projects: A Case Study of Urban Drainage Project Management Unit*

By Le Do
Supervisor: Dr. Chotchai Charoenngam

Project: *Pre-Construction Delay in Building Project Development: A Case Study of "Investco Babylon" Project in Ho Chi Minh City*

By Nguyen Tran Tuong Ly
Supervisor: Dr. Chotchai Charoenngam

Project: *Project Management Competency of a Small Contractor: A Case Study of Kien Tao Ltd., Company*

By Tu Thien Tu
Supervisor: Dr. Bonaventura H.W.
Hadikusumo

Project: *Business Process Management and Key Performance Indicators in Real Estate Construction*

By Le Anh Thai
Supervisor: Dr. Bonaventura H.W.
Hadikusumo

Project: *Effective Planning & Control of Multiple Projects: A Case Study of GR60-Nokia Stores Chain in Vietnam*

By Nguyen Thai Son
Supervisor: Dr. Chotchai Charoenngam

Project: *Owner's Project Quality Management System: A Case Study of Imperia An Phu Project in Ho Chi Minh City, Vietnam*

By Nguyen Ngoc Thi
Supervisor: Dr. Bonaventura H.W.
Hadikusumo

Project: *Variances in Financial Model Between Feasibility Study and after Design Stage in Bau Sen Building Project*

By Vo Thanh Phong
Supervisor: Dr. Chotchai Charoenngam

Project: *Risk Factors in a Water Environment Improvement Project: A Case Study of Bien Hoa City in Dong Nai Province*

By Le Van Tuan
Supervisor: Dr. Chotchai Charoenngam

Project: Cost Escalation Management in a Low-Income Apartment Project

By Ngo Quoc Thai
Supervisor: Dr. Bonaventura H.W.
Hadikusumo

Project: Owner's EPC Project Management in a Power Plant Project: A Case Study of the Nhon Trach 2 Power Plant Project (750 MW)

By Nguyen Nhat Tai
Supervisor: Dr. Bonaventura H.W.
Hadikusumo

Project: Owner's Tendering Strategy to Obtain a Qualified Contractor

By Nguyen Duc Huan
Supervisor: Dr. Oulawan Kulchartchai :
Dr. Oulawan Kulchartchai

Project: Interim Payment & Variation Order Management for a High-Rise Building Project: A Case Study of Indochina Plaza Project

By Duy Vuong Trinh
Supervisor: Dr. Chotchai Charoenngam

Project: Causative Factors Leading to Cost Overrun in EPC Power Project: A Case Study of Vung Ang Power Plant Project in Vietnam

By Linh Hoang Ngo
Supervisor: Dr. Bonaventura H.W.
Hadikusumo

Project: Project Financial Feasibility Study for an Agricultural Processing Plant

By Cuong Nam Nguyen
Supervisor: Dr. Chotchai Charoenngam

Project: Risk Factors and Management in a Cable Stayed

Bridge Project: A Case Study of Nhat Tan Bridge Project in Hanoi

By Nguyen Binh Son
Supervisor: Bonaventura H.W.
Hadikusumo

Project: Project Owner's Quality Management System: A Case Study of Quality Management System in Bong Do Housing Development Project

By Pham Viet Cuong
Supervisor: Dr. Bonaventura H.W.
Hadikusumo

Project: Feasibility Study Report for an Urban Infrastructure Project Using a Loan from Official Development Assistance (ODA): A Case Study of Laocai City Development Project Funded by World Bank

By Nguyen Viet Cuong
Supervisor: Dr. Chotchai Charoenngam

Project: Owner's Quality Management: A Case Study of a High Rise Building Project for Resettlement of People Relocated

By Dang Quang Ngoc
Supervisor: Dr. Bonaventura H.W.
Hadikusumo

Project: The Delay Factors During Construction Phase of a Residential Project in Binh Duong, Vietnam: A Case Study of An Dien Urbanized Residential Commercial Zone

By Bui Viet Thi
Supervisor: Dr. Oulawan Kulchartchai ;
Dr. B. Harimurti W. Hadikusumo

Project: Construction Management in Process Piping Installation: A Case Study of Dung Quat Polypropylene Project

By Vu Van Tinh
Supervisor: Dr. Chotchai Charoenngam

Project: Risk Management of Diaphragm Wall Construction Affecting Adjacent Buildings: A Case Study of Construction Project in Ho Chi Minh City, Vietnam

By Huynh Thanh Quang
Supervisor: Dr. B. Harimurti W.
Hadikusumo

Project: Human Resource Management in a Construction Project: A Case Study at the Foundation Phase of a Construction Project Executed

by Saigon-RDC Workforce
By Phan Hong Ngoc
Supervisor: Dr. Bonaventura H.W.
Hadikusumo; Dr. Oulawan Kulchartchai

Project: Delays and Claims in Hydropower Plant Project: A Case Study of Dong Nai 4 Hydropower Plant Project in Vietnam

By Tran Cao Hy
Supervisor: Dr. Bonaventura H.W.
Hadikusumo

Project: Analysis of Developer's Mistakes in Appraisal, Approval and Permit Issuance of the Construction Investment Project in Ho Chi Minh City

By Nguyen Thi Thu Nga
Supervisor: Dr. Chotchai Charoenngam

Project: Cost Estimation Problems in Thermal Power Projects: A Case Study of Thai Binh 2 Thermal Power Project

By Tran Viet Sinh
Supervisor: Dr. Bonaventura H.W.
Hadikusumo

Project: Maximize Profit of Construction Contractor: A Case Study for Nam Tinh M&E Contractor
By Ha Chi Nghia
Supervisor: Dr. Chotchai Charoenngam

Project: Owner's Project Scheduling Management Strategy: A Case Study of SHB - Da Nang F.C Sports and

Training Complex Center Project
By Vuong Hoang Thang
Supervisor: Dr. Chotchai Charoenngam

Project: Project Delays in Construction of Taxiway S1 in Noi Bai International Airport
By Nguyen Xuan Thang
Supervisor: Dr. Bonaventura H.W. Hadikusumo

Project: Project Management in High Risk Basement Construction: A Case Study of Construction Project in Hanoi City, Vietnam
By Tran Xuan Canh
Supervisor: Dr. Bonaventura H.W. Hadikusumo

Chapter 4.4: SET GEOTECHNICAL & EARTH RESOURCES ENGINEERING FIELD OF STUDY

4.4.1 Introduction

The Geotechnical and Geoenvironmental Engineering field of study consists of the following areas of specializations, i.e., Soil Engineering, Engineering and Applied Geology, Geoenvironmental Engineering and an interdisciplinary program of Geoexploration and Petroleum Geoengineering (GEPG). Besides the traditional areas of engineering geology and soil engineering such as foundation engineering, earth structures, underground excavations, land subsidence, and landslide mitigations, geotechnical engineers and researchers are increasingly involved in areas of ground improvement, geosynthetic engineering, land reclamation, lightweight materials and forensic geotechnical engineering. Furthermore, geotechnical engineers are increasingly challenged to solve environmental problems related to the reduction of construction wastes, provision of efficient waste disposal facilities, clean-up of contaminated sites as well as geological related hazards such as landslides and soil erosion. To meet the increasing demands of the region in finding new mineral and energy resources, since 2001 a

new interdisciplinary area of specialization in Geosystem Exploration and Petroleum Geoengineering has been setup for development of human resources to serve the mining industry and especially the Exploration and Production (E & P) sector of the oil and gas industry. In accommodating these requirements, the courses in the field have been enhanced to equip geotechnical and exploration engineers not only with traditional knowledge of soil mechanics and geology but also with skills in hydrogeology, geochemistry, biological processes, petroleum engineering, engineering and exploration, geophysics. Since 2008 the field had successfully opened and operated two professional programs in Geoexploration & Petroleum Geoengineering (PME-GEPG) and Geotechnical Engineering & Management (PME-GEM), respectively, in HCM City to meet the increasing demands of Vietnam in these areas.

4.4.2 Research Facilities and Laboratories

The Geotechnical and Geoenvironmental Laboratory can be boasted as one of the most equipped geotechnical laboratories

in the region with more than 30 years of experience in both soil and rock testing. The laboratory, which offer technical services on testing and research on the engineering behavior and properties of soil and rock; geologic mapping; environmental geophysical surveys; and testing of geosynthetic materials conducted by ACSIG, consists of five (5) sections - Soil Mechanics, Rock Mechanics, Engineering Geology, Geophysics, and Geoenvironmental Engineering

Soil Mechanics Laboratory

The Soil Mechanics Laboratory has facilities for testing and research on the engineering behavior and fundamental properties of soil. It is equipped to test compaction, seepage, compressibility, deformation and shear strength, soil dynamics, and ground improvement. Among other equipment, it has an automatic Central Data Acquisition System (CDAS) and two temperature-controlled rooms that house triaxial and consolidation equipment. Its field operation unit has a full range of tools for sampling soils and rocks and field test equipments for vane tests, Dutch cone tests, piezocone tests, pressuremeter tests, screw plate

tests, electric logging, and vibration measurements.

Rock Mechanics Laboratory

The Rock Mechanics Laboratory has facilities to determine a variety of the physical and mechanical properties of rocks and rock aggregates required for research and practice.

Moreover, the laboratory is capable of determining hardness, swelling and slake durability index properties of weak rocks. The laboratory has provided testing services to a large number of infrastructure projects in the region.

Engineering Geology Laboratory

The Engineering Geology Laboratory has facilities for research on the engineering behavior and fundamental properties of rocks and minerals. It provides classification and characterization tests for rock and minerals including petrographic and X-ray diffraction studies. It has stereoscopes, radial line planimetric plotter, stereo-sketch and sketch masters for analysis and interpretation of airphotos as applied to mineral explorations, transportation route studies, forestry, and civil engineering.

Geophysics Laboratory

The Geophysics Laboratory is being developed for training and researches in Geosystem Exploration and Petroleum Geoengineering. It

has a number of seismic, electric, magnetic and radiometric instruments, including some of the most advanced equipment such as DAS-1 (OYO), a multipurpose high-performance seismic data acquisition system, or SYSCAL R1 Plus (IRIS Instruments), an all-in-one multi-electrode resistivity and induced polarization (IP) imaging system.

The Laboratory is capable of conducting and assisting in geophysical field surveys for engineering, environmental, mineral resources, oil and gas exploration as well as in performing analysis, interpretation and visualization of geophysical data acquired.

Geo exploration and Petroleum Geo-engineering Laboratory

This new laboratory unit hosts high-capacity computers installed with very specialized software used in the upstream sector of petroleum E&P industry, notably with the well-known software for subsurface exploration, petrophysical characterization and reservoir simulation such as Petrel, Interactive Petrophysics, Eclipse etc. which are worth of more than 2 ± 6 million USD as donated by Schlumberger to AIT.

Geo environmental Laboratory

The Geo environmental Laboratory provides a variety of equipment for geo environmental engineering

research. It has equipment for geotechnical and chemical analysis that supports research in fundamental processes related to soil, water and chemical interactions that are applied to site and risk assessment, waste containment systems, and remedial technology. The chemical analysis equipment, spectrophotometer, from which the ion concentration can be determined with good accuracy and precision, enables research on soil-contaminant interaction.

Flexible wall permeameter, rigid wall permeameter and consolidation cell with permeameter are used to analyze water and chemical migration through waste containment systems. While the electrokinetic cell with advanced monitoring and controlled system is utilized for research in site reclamation and site remediation.

4.4.3 Faculty and Research Staff

Emeritus Professor

A S BALASUBRAMANIAM, BSc, Ceylon Univ, Sri Lanka; PhD, Cambridge Univ, UK

Full-time Faculty

DENNES T BERGADO, BSCE, Mindanao State Univ, Philippines; MEng, AIT, Thailand; PhD, Utah State Univ, USA

Professor (Ground improvement techniques and geosynthetics, In-situ testing, Geotechnical disaster mitigation, and Probabilistic/numerical methods in geotechnical engineering)

NOPPADOL PHIEN-WEJ, BEng, Chulalongkorn Univ, Thailand; MS, PhD, Illinois at Urbana-Champaign, USA.

Associate Professor (Tunnelling and underground excavations in rocks and soils; Slope stability and retaining structures; Landslides; Earth structures and dams; Pilefoundations; Buried pipes and culverts) KYUNG-HO PARK, BEng, MEng, Korea Univ; DEng, SUNY at Buffalo, USA.

Assistant Professor (*Geotechnical Engineering; Geomechanics; Computational Mechanics; Boundary Element Methods*) PHAM HUY GIAO, DEng, MEng, Asian Institute of Technology, Thailand; Dipl Ing (MSc), Bucharest University, Romania

Assistant Professor (*Exploration and Engineering Geophysics; Petrophysics; Geotechnical Engineering; Computer-aided Analysis in Geoengineering*)

4.4.4 Grants and Sponsored Research Completed in 2011

Services on Design of Civil works of Prototype Underground unit substations

Duration: 15-Jan-09 to 30-Dec-11

Project Investigator(s): Noppadol Phien-wej
Sponsor: Metropolitan Electricity Authority
Total Contracted Amount (THB):1,850,000

RTG/Seismic safety of earth dam in Northern Thailand

Duration: 1-Jul-09 to 31-May-11
Project Investigator(s): K H Park
Sponsor: RTG
Total Contracted Amount (THB):900,000

A Geoenvironmental-Geophysical Investigation of Petroleum – Contaminated soil at the Don Muang Airport site by using Electric imaging technique

Duration: 15-Jul-09 to 15-Jul-11
Project Investigator(s): Pham Huy Giao
Sponsor: RTG
Total Contracted Amount (THB):990,000

Investigation on Flooding at Tank terminal of MC Siam, Pra Pradaeng

Duration: 1-Jun-10 to 31-Dec-11
Project Investigator(s): Noppadol Phien-Sponsor: OY Corporation Ltd
Total Contracted Amount (THB):1,356,225

Training Course on Computation Geotechnics

Duration: 1-Jun-11 to 30-Aug-11
Project Investigator(s): Noppadol Phien-wej
Sponsor: Multi donors
Total Contracted Amount (THB): 350,000

4.4.5 On-going Grants and Sponsored Research

Global Center of excellence on Human Security Engineering for Infrastructure Management of Kyoto University Phase1

Duration:1-Jan-09 to 30-Jun-12
Project Investigator(s): Noppadol Phien-wej
Sponsor:University of Kyoto
Total Contracted Amount (THB)2,754,662

Instrumentation Interpretation of Nam Ngum 2 CFRD

Duration: 1-Jan-10 30-Jun-12
Project Investigator(s): Noppadol Phien-wej
Sponsor: Ch Karnchang Lao Ltd
Total Contracted Amount (THB): 1,170,000

Investigation on Bank Slope Failure, Talueng Cement Factory

Duration: 1-Feb-10 31-Dec-12
Project Investigator(s): Noppadol Phien-wej
Sponsor: Siam City Cement Public Co Ltd
Total Contracted Amount (THB):1,412,400

PM&E Program in Geoexploration and Geoengineering Batch III

Duration: 1-Sep-10 30-May-12
Project Investigator(s): Pham Huy Giao, Noppadol Phien-Wej
Sponsor:Oil and Gas Company, Vietnam
Total Contracted Amount (THB):3,850,143

Professional Masters Program in Geotechnical Engineering and Management

Duration: 1-Aug-11 30-Jan-13
Project Investigator(s):Pham Huy Giao, Noppadol Phien Wej,D Bergado
Sponsor:Professional Managers

Total Contracted Amount
(THB):3,379,500

PME in Geoexploration and Petroleum Geoen지니어ing PME GEPG 04

Duration:1-Aug-11 to 28-Feb-13

Project Investigator(s) Pham Huy
Giao,Noppadol Phien-Wej

Sponsor: Multi donors

Total Contracted Amount
(THB):4,031,496

Evaluations and Tests of Greenway Powder for Soil Stabilization

Duration: 1-Jun-11 29-Feb-12

Project Investigator(s): Dennes
T.Bergado

Sponsor: Loxley Public Company Limited

Total Contracted Amount (THB):
450,000

PME in Geotechnical Engineering and Management in Hanoi Vietnam

Duration:1-Feb-12 to 30-Jun13

Project Investigator(s):Pham Huy
Giao,Noppadol Phien-Wej

Sponsor:FECON and other geotechnical
companies in Vietnam

Total Contracted Amount
(THB):2,892,000

4.4.6 Publications

International Journal Articles with Impact factor

Artidteang, S., **Bergado, D.T.**,
Saowapakpiboon, J.,
Teerachakulpanich, N., and Kumar, A.
(2011), Enhancement of Efficiency of
Prefabricated Vertical Drains using
Surcharge Vacuum and Heat
Preloading, *Geosynthetics*

International, Vol. 18, No. 1, pp. 35-
47.

Jamsawang, P., **Bergado, D.T.**, and
Voottipruex, P. (2011), Field Behavior
of Stiffened Deep Cement Mixing
Piles, *Ground Improvement Journal*,
Vol. 164, Issue GI1, pp. 33-49.

Voottipruex, P., Suksawat, T.,
Bergado, D.T., and Jamsawang, P.
(2011), Numerical Simulations and
Parametric Study of SDCM and DCM
Piles Under Full Scale Axial and
Lateral Loads, *Computers and
Geotechnics*, Vol. 38, pp. 318-329.

Voottipruex, P. **Bergado, D.T.**,
Suksawat, T., Jamsawang, P., and
Cheang, W. (2011), Behavior and
Simulation of Deep Cement Mixing
(DCM) and Stiffened Deep Cement
Mixing (SDCM) Piles under Full Scale
Loading, *Soils and Foundations*, Vol.
51, No. 2, pp. 307-320.

Saowapakpiboon, J., **Bergado, D.T.**,
and Artidteang, S. (2011),
Comparison in the Performance of
Prefabricated Vertical Drain (PVD)
Preloading Combined With and
Without Vacuum and Heat, *Lowland
Technology International*, Vol. 13,
No. 1, pp. 1-8.

Tin, N., **Bergado, D.T.**, and
Voottipruex, P. (2011), Modification
of K-Stiffness Method in MSE
Structures on Soft Ground,
Geosynthetics International,
Geosynthetics International, Vol. 18,
No. 5, pp. 304-320.

Conference Publications

Bergado, D.T., Suksawat, T., and
Jamsawang, P. (2011), Numerical
Simulations and Parametric Study of
SDCM and DCM Piles Under Full
Scale Axial and Lateral Loads, *Proc.
GeoFrontiers 2011*, Dallas, U.S.A.

Fowze, J.S.M., **Bergado, D.T.**,
Samarakoon, L., Voottipruex, P.,
Soralump, S., and Jotisankasa, J.
(2011), Deterministic Modeling of
Rain-Triggered Landslides: A Case
Study in Nan Province, Thailand,
*Proc. 14th Asian Regional
Conference on Soil Mechanics and
Geotechnical Engineering*, Hong
Kong, China.

Artidteang, S., **Bergado, D.T.**,
Methacaanon, P., and Prahsarn, C.
(2011), Properties of Limited Life
Woven Geotextiles (LLGs) for Soil
Reinforcement and Soil Erosion
Control Applications, *Proc. 14th
Asian Regional Conference on Soil
Mechanics and Geotechnical
Engineering*, Hong Kong, China.

Abuel-Naga, H.M., **Bergado, D.T.**,
and Bouazza, A. (2011), On the
Feasibility of Thermal Consolidation
as Ground Improvement Technique:
Full-Scale Test, *Proc. 13th
International*

*Conference of the International
Association for Computer Methods
and Advances in Geomechanics
(IACMAG 2011)*, Melbourne,
Australia.

Theme Papers, Keynote Lectures, Invited Lectures, and Special Lectures

Bergado, D.T., Tin, N., Lai, Y.P., and Voottipruex, P. (2011), Reduction of Reinforcement Loads using Kinked Steel Grids in MSE Structures, Keynote Lecture, GEDMAR2011, Semarang, Indonesia.

Bergado, D.T., Artidteang, S., Saowapakpiboon, J., and Lai, Y.P. (2011), PVD Improvement of Soft Bangkok Clay – Historical and Recent Development, Invited Lecture, GEDMAR2011, Semarang, Indonesia.

Bergado, D.T. (2011), Recent Developments of Soil Improvement Using PVDs with Vacuum and Heat Preloading, Invited Lecture, Nanyang Technological University (NTU), Singapore.

Bergado, D.T. (2011), Recent Developments of Deep Cement Mixing (DCM) Method, Invited Lecture, National University of Singapore (NUS)/Singapore Geotechnical Society (GeoSS) Geotechnical Seminar, Singapore.

Bergado, D.T., Tin, N. and Voottipruex, P. (2011), Modification of K-Stiffness Method in MSE Structures on Soft ground, Invited Lecture, Geosynthetics India 2011, Indian Institute of Technology, Madras, India.

4.4.7 Doctoral Students' Theses

Hazard Analysis of Rain-Triggered Landslides: A Case Study in Northern Thailand By J S M Fowze
Supervisor: Prof. Dennes T. Bergado
Georisks in Reef Islands with Focus on the Undersea Reef Slope Failure and the Tsunami Impact on Maldives
By Mahmood Riyaz

4.4.8 Masters Students' Theses

Bearing Capacity and Settlement of Stone Columns: Case Studies from Construction Sites of Saudi Arabia
By. Nemat Ullah
Supervisor: Prof. Dennes T. Bergado

Investigation of Geohydrology in Mazar-E-Sharif City, Afghanistan
By Shir Mohammad Rasa
Supervisor: Dr. Noppadol Phien-wej

Evaluation on Behavior of Diaphragm Walls in Deep Excavations with Cross-Walls as Base Struts
By. Hewa Garusinghe Dapana Durage Dimal Chanaka
Supervisor: Dr. Noppadol Phien-wej

Characteristics of Limited Life Geotextile Made of Natural Fibers for Embankment Reinforcement and Erosion Control
By Myat Myat Phy Phyo
Supervisor: Prof. Dennes T. Bergado

A Graphical Approach of Reserves Estimation of Hydrocarbon Fields of the Future Platforms in the Pattani and North Malay Basins
By. Apiwat Burapavijitnon
Supervisor: Dr. Pham Huy Giao

Effect of Soil-Structure Interaction on Seismic Response of High-Rise Buildings: A Case Study of Jakarta, Indonesia

By. James Frank Sianturi
Supervisor: Dr. Kyung-Ho Park

Characterization of Unsaturated Residual Soils Susceptible to Rain-Triggered Landslides from Mae Hong Son Province in Thailand

By. Zaw Ye Aung
Supervisor: Prof. Dennes T. Bergado

Behavior of MSE Wall/Embankment with Geogrid and Metallic Reinforcements on Hard Foundations
By. Mongkhol Nualkiang
Supervisor: Prof. Dennes T. Bergado

Petrophysical Analysis of a Fractured Granite Reservoir, Offshore Southern Vietnam

By. Bui Duc Trung
Supervisor: Dr. Pham Huy Giao

One-Dimensional Petroleum System Modelling of the South Fang Basin, Northern Thailand
By Kritsana Doungnoi
Supervisor: Dr. Pham Huy Giao

Building Log-Derived J-Functions of Sand Facies at a Location in the Con Son Basin

By. Mai Van Binh
Supervisor: Dr. Pham Huy Gia

Review of Seepage Control of Embankment Dam Foundation of Tha-Htay Hydropower Project, Myanmar using Cut-Off Wall

By. Myo Naing
Supervisor: Dr. Noppadol Phien-wej

Support Requirements of Headrace Tunnel of Nancho Hydropower Project in Myanmar

By. Myat Zaw Oo

Supervisor: Dr. Noppadol Phien-wej

A Review on State-of-the-art in Polymer Grouting with Reference to Applications in the SE Asia

By. Doan Binh

Supervisor: Dr. Pham Huy Giao, Dr.

Noppadol Phien-wej

Post Stack Seismic Processing with Reference to Optimization of Well Path in the Fracture Granite

Basement Reservoir

By. Dam Duy Viet

Supervisor: Dr. Pham Huy Giao

Electric Imaging Survey of a Water-Covered Site in the Mekong Delta

By. Nguyen Duc Thanh

Supervisor: Dr. Pham Huy Giao

Application of the Continuous Fracture Modeling (CFM) Method to Delinate Fracture Zone Inside the Basement in D Structure, Block X of the Cuu Long Basin

By. Phan Thanh Hai

Supervisor: Dr. Pham Huy Giao

Determination of the Consolidation Coefficient for the Soft Clay

Underlying the Saigon Premier

Container Terminal Project

By. Tran Van My Canh

Supervisors: Prof. Dennes T. Bergado,

Dr. Noppadol Phien-wej

Geotechnical Characterization of the Cai Mep-Thi Vai Riverside Soft Clay

By. Nguyen Hoang Chuong

Supervisor: Dr. Pham Huy Giao

Applicability of Hydraulic Fracturing in Oligocene-e Cuu Long Basin

By. Ha Nguyen Vu

Supervisors: Dr. Pham Huy Giao, Dr.

Noppadol Phien-wej

Determination of Reservoir Deliverability Based on the Composite Inflow Performance Relationship (IPR) for a Stratified Reservoir in the Block X, Cuu Long Basin

By. Nguyen Thanh Tung

Supervisors: Dr. Pham Huy Giao, Dr.

Suwat Athichanagorn

Comparative Study of Techniques to Analyze Formation Pressure Data for Multilayered Reservoir

By. Tran Thanh Cuong

Supervisors: Dr. Pham Huy Giao, Dr.

Suwat Athichanagorn

Analysis of the In Situ Stress on Top of the Basement, X Prosepect of the Cuu Long Basin, Vietnam

By. Pham Tri Dung

Supervisors: Dr. Noppadol Phien-wej,

Dr. Pham Huy Giao

Chapter 4.5: SET INDUSTRIAL AND MANUFACTURING ENGINEERING FIELD OF STUDY

4.5.1 Introduction

Industrial and Manufacturing Engineering field of study prepares students for manufacturing management and decision support positions in industry and public sector, by equipping them with a broad range of decision making skills for a variety of applications. The IME curriculum reflects the objective of imparting fundamental knowledge to develop the ability to address complex industrial issues, emphasizing on how to design, operate, control, and optimize the production systems

4.5.2 Research Facilities and Laboratories

IME field shares all the laboratory facilities with Mechatronics and Microelectronics fields of study. There are several well equipped laboratories with the primary function of supporting the students and faculty for teaching and research and to conduct outreach programs.

Computer Integrated Manufacturing (CIM) Laboratory

The Computer Integrated Manufacturing (CIM) laboratory was officially inaugurated on September 23, 1991. It provides

the hardware and software support for Industrial Systems Engineering. Many research activities have been carried out in close collaboration with industry and government sectors in the areas of Computer Aided Design (CAD), Computer Aided Manufacturing (CAM), Computer Numerical Control (CNC), Rapid Prototyping (RP) and Medical Technology. The CIM Laboratory also provides specialized training and consultancy services in CAD, CAM, CNC Machining, Reverse Engineering, Rapid Prototyping, Packaging Technology, Flexible Manufacturing Systems [FMS], and Development of Postprocessor for 5-axis CNC.

The CIM Laboratory is equipped with production and training CNC machines including EMCO TURN242 industrial production CNC lathe, EMCO VMC200 CNC vertical machining center for universal production, MAHO MH600E2 5-axis universal milling and boring machine, an EMCO compact 5 CNC, an EMCO F1 CNC, a LVD CNC press brake, a LVD water-jet cutting CNC, ZOLLER tool presetting system, and a Mondiale Gallic G-420 Industrial CNC lathe, EMCO CNC training system, Plastic Injection Molding Machine. The available

CAD/CAM software includes UNIGRAPHICS NX4, Master CAM 9.1, Mechanical Desktop 6, AutoCAD Inventor Series, SolidWorks 2005, CAM 2000, Mimics 6.3 & Magic 5.4.

Metrology Laboratory

Metrology Laboratory provides the hardware and software support for teaching and research activities in Industrial Systems Engineering. Metrology Laboratory is equipped with Measuring Instruments (Zeiss CMM, Mitutoyo Profile Projector, Taylor Hobson Surface Roughness Tester, Lab View Hardware & Software).

Simulation Laboratory

This lab is equipped with networks of Pentium PC for general applications and internet access, high end CAD/CAM & Simulation software such as ARENA and AutoMOD. In addition, a high performance computer facility with parallel cluster is also available for research use.

4.5.3 Faculty and Research Staff

Full-time Faculty

VORATAS KACHITVICHYANUKUL, BS Natl Taiwan Univ; MEng, AIT,

Thailand; PhD, Purdue Univ, Indiana, USA.

Professor(Simulation; ERP; Scheduling, Metaheuristics; Parallel Computing) [Planning and Scheduling Systems; Enterprise Resource Planning Systems; Supply Chain Modeling and Analysis; Discrete Event Simulation Software Development; Manufacturing System Simulation; Manufacturing Decision Support Systems; Just-in-Time Manufacturing System]

MARIO T TABUCANON, BSEE, BSME, Cebu Inst of Tech, Philippines; MEng, DEng, AIT, Thailand.

Professor (Multiple Criteria Decision Making; Operations and Production Management; Operations Research; Project Management; Systems Modeling)

ERIK L J BOHEZ, BurgerlijkWerktuigKundig Electro-TechnischIngenieur, RijksUniversiteit Gent (State University Ghent, Belgium); KandidatuurBurgerlijkIngenieur, RijksUniversiteit Gent (State University Ghent, Belgium); TechnischIngenieur Electro-Mechanica, Hoger TechnischInstituutSint Antonius Gent, (High Technical Institute Saint Antonius Ghent; Belgium)

Associate Professor(Computer Aided Design; Computer Aided Manufacturing; Computer Graphics; Computer Numerical Control; Five

Axis Machining; Robust Control; Simulation of Metal Removal; [CNC/CAD/CAM; Five Axis Machining; Mold and Die Design, Eco-Design, Biomechanics, Industrial Packaging]

HUYNH TRUNG LUONG, BEng, Ho Chi Minh City Univ of Tech, Vietnam; MEng; DEng, AIT, Thailand.

Associate Professor[Emergency inventory policies and inventory policies for perishable products; Supply chain design; Measures of bullwhip effect in supply chains; Availability-based and reliability-based maintenance; Fuzzy quality control charts; Statistical design of experiments; Network flows related problems]

PISUT KOOMSAP, BEng, Thammasat Univ, Thailand; MSc, Univ of Louisville; PhD, Pennsylvania State Univ, USA

Assistant Professor (Sensing and Control for Manufacturing Processes and Systems; Laser Applications in Manufacturing; Rapid Prototyping; Condition-Based Maintenance; Continuous Improvement) [Rapid Prototyping; Sensing and Control for Manufacturing Processes and Systems; Laser Applications in Manufacturing; Condition- Based Maintenance; Continuous Improvement]

Visiting Faculty

RAMAIAH ANANDA NATARAJAN, Ph.D. (2003) from Anna University, Chennai Visiting Professor Professor, Department of Electronics and Instrumentation Engineering, Pondicherry Engineering College, Pondicherry, Puducherry, India (control of nonlinear process, Process Control, Computer control of process and Multivariate Data Analysis).

4.5.4 Grants and Sponsored Research Completed in 2011

The development of Automatic Flat screen Printing Machine

Duration: 1-Aug-09 to 30-Jun-11

Project Investigator(s): Pisut

Koomsap

Sponsor:RTG

Total Contracted Amount (THB): 950,000

Product Design & development for SCG Building Material 2009

Duration: 1-Aug-09 to 31-Dec-11

Project Investigator(s): MPisut Koomsap

Sponsor:SCG Building Materials Co Ltd

Total Contracted Amount (THB):

101,650

Carbon footprint of Double A Paper and Development of Life Cycle Management System

Duration: 1-Nov-09 to 31-Oct-11

Project Investigator(s): Erik Bohez

Sponsor: RTG/Advanced Agro

Total Contracted Amount (THB):

2,000,000

Identify Customer Needs from Voice of Customers for SCG Building Materials

Duration: 1-Feb-10 to 31-Jan-11
Project Investigator(s): Pisut Koomsap
Sponsor:SCG Building Materials Co Ltd
Total Contracted Amount (THB):
149,800

The 4th International Conference on Modelling and simulation

Duration: 1-Feb-11 to 31-Aug-11
Project Investigator(s): Voratas Kachitvichyanukul
Sponsor: Multi donors
Total Contracted Amount (THB):
1,000,000

4.5.5 On-going Grants and Sponsored Research

Project on Human Resource Development in Multi-Axis CNC Machine for EGAT

Duration: 1-Feb-07 to 31-May-12
Project Investigator(s): Erik Bohez
Sponsor: EGAT Public Company, Thailand
Total Contracted Amount (THB): 750,000

Life Cycle Assessment Fine Paper

Duration: 1-Jun-08 to 31-May-12
Project Investigator(s): Erik Bohez, Esa Viljakainen
Sponsor:Double A
Total Contracted Amount (THB):1,475,000

Product design and development for Thai Ceramic Co. Ltd

Duration: 21-May-10 31-Dec-12
Project Investigator(s): Pisut Koomsap
Sponsor: Thai Ceramic Co Ltd
Total Contracted Amount (THB):321,000

Professional Masters Degree Program in IEM

Duration: 1-Jan-11 to 31-May-12
Project Investigator(s): Huynh Trung

Luong
Sponsor: Multi donors
Total Contracted Amount (THB):4,338,000

Professional masters degree program in IEM & ISCM in Hochiminh City Vietnam

Duration: 1-Jan-12 to 30-May-13
Project Investigator(s): Huynh Trung Luong
Sponsor: Multi donors
Total Contracted Amount (THB):
4,338,000

4.5.6 Publications

International Journal Articles with Impact factor

Wisittipanich, W. and Kachitvichyanukul, V., (2011). "Two enhanced differential evolution algorithms for job shop scheduling problems," International Journal of Production Research, (in press).

Wisittipanich, W. and Kachitvichyanukul, V., (2011). "Differential Evolution Algorithm for Job Shop Scheduling Problem," Industrial Engineering and Management Systems, Vol. 10, No. 3, pp.203-208

Kachitvichyanukul, V. and Sitthitham, S., (2011). "A Two-Stage Genetic Algorithm for Multi-objective Job Shop Scheduling Problems," Journal of Intelligent Manufacturing, Vol. 22, No. 3, pp. 355-365, DOI

Product design & development for Nawaplastic Industries Duration:

25-Jul-11 to 24-Jul-12
Project Investigator(s): Pisut Koomsap
Sponsor: Nawaplastic Industries (Saraburi) Co. Ltd
Total Contracted Amount (THB): 120,000
10.1007/s10845-009-0294-6.

Pratchayaborirak, T. and Kachitvichyanukul, V., (2011). "A Two-Stage PSO Algorithm for Job Shop Scheduling Problem," International Journal of Management Science and Engineering Management, Vol. 6, No.2, pp. 84-93.

Udomsakdigool, A. and Kachitvichyanukul, V., (2011). "Ant Colony Algorithm for Multi-criteria Job Shop Scheduling to Minimize Makespan, Mean Flow Time and Mean Tardiness," International Journal of Management Science and Engineering Management, Vol. 6, No.2, pp. 117-123.

Chung, N.V., Bohez, E.L.J., Belforte, G., and Phong, H.T., (2011). "A new conceptual approach for systematic error correction in CNC machine tools minimizing worst case prediction error," International Journal of Advanced Manufacturing Technology, DOI: 10.1007/s00170-011-3605-y (in press).

Shah, S.A., Bohez, E.L.J., and Pisuchpen, R. (2011). "New modeling and performance evaluation of tool sharing control in FMS using colored Petri nets," Assembly Automation, Vol. 31, No.2,

pp.137 – 152, DOI: 10.1108/01445151111117728.

Ashraf M.W., Tayyaba S., Afzulpurkar N., Nisar A., Bohez E.L.J., Lomas T., and Tuantranont A., (2011). "Design, simulation and fabrication of silicon microneedles for bio-medical applications," Transactions on Electrical Engineering, Electronics, and Communications, Vol. 9, No. 1.

Dang, N.M., Babel, M.S., and Luong, H.T., (2011). "Evaluation of Food Risk Parameters in the Day River Flood Diversion Area, Red River Delta, Vietnam," Natural Hazards Vol. 56, No. 1, pp.169-194, DOI: 10.1007/s11069-010-9558-x.

Yousuk, R., and Luong, H.T., (2011). "Modelling a two-retailer inventory system with preventive lateral transshipment using expected path approach," European Journal of Industrial Engineering (accepted for publication)

Risdiyono, and Koomsap, P., (2011). "Design by Customer: Concept and Application," Journal of Intelligent Manufacturing, DOI: 10.1007/s10845-011-0587-4 (in press).

Phattanaphibul, T., and Koomsap, P., (2011). "Investigation of PLA-Based Scaffolds Fabricated via SVM Rapid Prototyping," Journal of Porous Materials, DOI: 10.1007/s10934-011-9497-2 (in press).

Rianmora, S., and Koomsap, P., (2011). "Structured Light System-Based Selective Data Acquisition," Robotics and Computer Integrated Manufacturing, Vol. 27, No. 4, pp. 870-880, DOI 10.1016/j.rcim.2011.02.002.

Irwansyah, Koomsap, P., and Phattanaphibul, T., (2011). "Exploring SVM Rapid Prototyping in Scaffold Fabrication," the Asian International Journal of Science and Technology in Production and Manufacturing Engineering (AIJSTPME) Vol. 4, No. 1, (selected from the 10th Global Congress on Manufacturing and Management).

Conference Publications

Wisittipanich, W. and Kachitvichyanukul, V., "A Pareto-based Particle Swarm Optimization for Multi-objective Job Shop Scheduling Problems," Proceedings of the 7th International Conference on Intelligent Manufacturing and Logistics Systems, Taiwan, March, 2011

Wisittipanich, W. and Kachitvichyanukul, V., "Differential Evolution Algorithm for Makespan Minimization in Flexible Job Shop Scheduling Problem," Proceedings of the 12th Asia Pacific Industrial Engineering and Management Systems Conference (APIEMS 2011), Beijing, China, October, 2011

Sooksaksun, N., and Kachitvichyanukul, V., "Pareto-based

Multi-objective Optimization for Two-block Warehouse Design," Proceedings of the 12th Asia Pacific Industrial Engineering and Management Systems Conference, (APIEMS 2011), Beijing, China, October, 2011

Chung N.V., Bohez, E.L.J., and Belforte G., "New Artifact For Minimal Worst Case Prediction Systematic Error Identification In 5-Axis CNC Machine tools," Proceeding of the 21th International Conference of Production Research (ICPR21), Stuttgart, Germany July, 2011

Belforte, G., Bohez, E.L.J., and Effendy, N., "Optimal Identification Of Multidimensional Polynomials describing Systematic Errors In CNC Machines," Proceeding of the 21th International Conference of Production Research (ICPR21), Stuttgart, Germany July, 2011

Aziz, M. H., Bohez, E.L.J., Pisuchpen, R., Parnichkun, M., Dailey, M.N., and Saha, C., "New PN Model Of FMS With Sequential Flexibility Of Resource Allocation," Proceeding of the 21th International Conference of Production Research (ICPR21), Stuttgart, Germany July, 2011

Phromfaiy, A., Sonthipermpoon, K., and Bohez, E., "Grinding path optimization for a roll grinding machine" Proceedings of IEEE International Conference on Industrial Engineering and Engineering Management (IEEM), pp. 566 - 570, Macau Dec. 2010

Trinh, T.H., Kachivichyanukul, V., and Luong, H.T., "Customer Efficiency and Productivity in Designing Service Delivery System," Proceedings of the 12th Asia Pacific Industrial Engineering and Management Systems Conference (APIEMS 2011), Beijing, China, October, 2011

Wicaksono, M. B., Koomsap, P., Risdiyono, and Nakpathom, M., "Design of Automatic Online Alignment for Multi-Color Flat Screen Printing Process," the 4th International Conference on Product Design and Development, Yogyakata, November 2011

Auyson, K., Koomsap, P., and Wicaksono, M. B., "Pick and Place Algorithm for Online Waste Removal Process in LOM," the 4th International Conference on Product Design and Development, Yogyakata, November 2011

Rianmora, S., Koomsap, P. and Kuagoolkijgarn, P., "Application of contour tracing algorithm for assisting non-contact data acquisition" the 5th International Conference on Advanced Research in Virtual and Rapid Prototyping (VRAP 2011), Leiria, Portugal, September, 2011

Chansri, N. and Koomsap, P., "Image-Based Direct Slicing of a Single Line Drawing for Rapid Prototyping" the 5th International Conference on Advanced Research in Virtual and Rapid Prototyping

(VRAP 2011), Leiria, Portugal, September, 2011

Chansri, N., Koomsap, P., and Kuagoolkijgarn, P., "Application of Contour Tracing Algorithm in 3D Modeling from a Paper-Based Overtraced

Freehand Sketch," 21st International Conference on Flexible Automation and Intelligent Manufacturing (FAIM 2011), Taichung, Taiwan, June 2011

Tabucanon, M.T., Tanaka, A., and Aipanjiguly, S., "Striving for Sustainable Development in Higher Education", Journal of Education for Sustainable Development, Vol. 5, No. 1, 2011, Sage Publication, p 9-14.

Rathviboon, S, Tabucanon, M.T., and Sivakumar, M., "A Multiple Criteria Decision Making Model for Evaluating Sustainability of Business Enterprises", International Journal of Industrial Systems Engineering, Inderscience

4.5.7 Doctoral Students' Dissertation

Design and Manufacturing Engineering

A New Systematic Error Identification and Optimal Sampling Method for Multi-Axis CNC Milling Machine Tools

By Nguyen Van Chung
Supervisor: Assoc. Prof. Erik L J Bohez

New Modeling and Performance Evaluation of Tool Sharing Control in FMS Using Colored Petri Net

By Shaukat Ali Shah
Supervisor: Assoc. Prof. Erik L J Bohez

Development of an Automatic Prototype Creation from a Paper-Based Overtraced Freehand Sketch

By Natthavika Chansri
Supervisor: Dr. Pisut Koomsap

Industrial and Manufacturing Engineering

Development of an Evaluation System for Sustainable Business Enterprise in the Context of Supply Chain Management

By. San Rathviboon
Supervisor: Prof. Mario T Tabucanon

Warehouse Design under Class-based Storage Policy

By. Natanaree Sooksakun
Supervisor: Dr. Voratas Kachitvichyanukul

Differential Evolution Algorithms and Their Applications to Scheduling Problems

By Warisa Wisittipanich
Supervisor: Prof. Voratas Kachitvichyanukul

Industrial Engineering & Management

Lateral Transshipment in 2- and N-Retailer Inventory Systems with Periodic Review Policy

By Ramidayu Yousuk
Supervisor: Dr. Huynh Trung Luong

4.5.8 Masters Students Theses and Projects

Industrial and Manufacturing Engineering

Design and Development of an Automatic Mechanism for a Low Pressure Waterjet-Based Rapid Prototyping System

By. Chowdhary Abhishek

Supervisor: Dr. Pisut Koomsap

Coordinated Production - Inventory Decision in a Multi-Stage Supply Chain: The Case of Integer-Powers-of-Two Multipliers Mechanism

By Kanokwan Singha

Supervisor: Dr. Huynh Trung Luong

Differential Evolution Algorithm for the Multicommodity Distribution Network Design Problem

By Chayakarn BaByungbutr

Supervisor: Prof. Voratas Kachitvichyanukul

Applying Image Processing for Automatic Alignment in Multi-Color Screen Printing

By. Martinus Bagus Wicaksono

Supervisor: Dr. Pisut Koomsap

Multi-Product Supply Chain Network Design Model

By Nur Mayke E. Normasari

Supervisor: Dr. Huynh Trung Luong

Coordinated Production-Inventory Decision in a Multi-Stage Supply Chain: The Case of Integer Multipliers Mechanism with Low Production Rate

By Buraya Srisomsak

Supervisor: Dr. Huynh Trung Luong

Wind Turbine Blade Shape & Size Optimization : A Case Study

By. Liaquat Ali Lehri

Supervisor: Assoc. Prof. Erik L. J. Bohez

A Particle Swarm Optimization Algorithm for Cross-docking Distribution Networks

By. Awiroot Jai-oon

Supervisor: Prof. Voratas

Kachitvichyanukul

A New Economic and Environmental Decision Support Model for Product Reuse: A Case Study of Reuse House Brand Shipping Box for Postal Service

By. Watshara Termsettajareon

Supervisor: Assoc. Prof. Erik L. J. Bohez

Eco-Design: Recycling of Aluminum Based Laminates Packaging by Separation of Aluminum and Plastic by Heat

By. Songpol Boonsawat

Supervisor: Assoc. Prof. Erik L. J. Bohez

Chapter 4.6: SET MECHATRONICS AND MICROELECTRONICS AND EMBEDDED SYSTEMS FIELD OF STUDY

4.6.1 Introduction

Mechatronics

At present, most academic institutions and industries in the Asian region are only system integrators. Components are procured from more developed countries (e.g. computer numerically controlled machines, robots, and automated guided vehicles) and are integrated as a system (e.g. flexible manufacturing system). To support the growth of the region's economy, expertise not only as system integrators but also as builders of components of advanced technologies must be developed. The growing number of electronic devices and the strong interactions between mechanical and electronic parts no longer permit separate investigations of these components.

Mechatronics provides new insights through an integrated consideration of mechanics, electronics and information technology. The curriculum is designed to provide multidisciplinary knowledge and to develop the ability to design mechatronics systems.

Microelectronics and Embedded Systems The region's growing industrial sector and the increasing

demand for high technologies have brought the need for expertise in microelectronics to a critical level. The students are prepared to cope with the needs of the electronics industry in the region. The curriculum is equally balanced between the analog and digital design of circuits as well as the processing related topics including failure analysis, suitable for this electronics industrial sector in the region. The curriculum has been designed and constantly adapted in partnership with microelectronics industries and collaborating universities overseas. Miniaturisation of IC and the possibilities of completely new technologies like nanotechnology have also been introduced.

4.6.2 Research Facilities and Laboratories

Mechatronics and Microelectronics and Embedded Systems fields of study share all the laboratory facilities with the Industrial & Manufacturing Engineering field of study. There are several well equipped laboratories with the primary function of supporting the students and faculty for teaching

and research and to conduct outreach programs.

Mechatronics and Automation Laboratory

The Mechatronics and Automation laboratory is well equipped with many PLC systems (S5, S7200/300/400, INDRAMAT, BOSCH), distributed control systems (PCS7), operator panels (OP5, OP17/DP and OP35), a PC-based human machine interface package (WINCC) and networked field buses (PROFIBUS, INTER-BUS and SERCOS). The lab has mobile robots (NOMAD, PIONEER 2), robot arms (CRS), an industrial robot (KUKAKR15), a self-made open architecture CNC machine, CNC control systems (MTC200, SINUMERIK 8100/8400), image processing systems (DVT, MATROX) and FPGA's (XILINX-1i VIRTEX PRO, ALTERA). Software such as SYNOPSIS IC Design, ANYSIM, ANSYS, ADAMS and many types of special sensors and actuators are also available for research use.

The Integrated Circuit Design laboratory gives students access to a wide variety of professional software applications including

ANSYS, Orcad, ModelSim SE, Xilinx ISE, Synopsys, Leonardo Spectrum LS and Tanner (S-Edit for Schematic Capture, T-Spice and W-Edit for Simulation and LEdit for Physical Layout). The laboratory's facilities are used for analog and digital circuit design, microchip design and fabrication, MEMS, microactuators and micro-sensors design, computational electronics, and so on. Fabrication facilities are available through the National Electronics Technology Center and the National Science and Technology Development Administration located in nearby Science Park.

Mechatronics faculty and students work in close collaboration with industry and government sectors in the areas of industrial automation, robotics, control, system design and integration. Some examples of ongoing projects include a medical tele-analyzer, automated visual inspection systems, MEMS design, an autonomous flying robot, automating centrifuge machines, an autonomous underwater robot and automating crystallization processes.

Simulation Laboratory

This lab is equipped with networks of Pentium PC for general applications and internet access, high end CAD/CAM & Simulation software such as ARENA and AutoMOD. In addition, a high performance computer facility with parallel cluster is also available for research use.

IC Design Laboratory

The Integrated Circuit Design laboratory gives students access to a wide variety of professional software applications including ANSYS, Orcad, ModelSim SE, Xilinx ISE, Synopsys, Leonardo Spectrum LS and Tanner (S-Edit for Schematic Capture, T-Spice and W-Edit for Simulation and LEdit for Physical Layout). The laboratory's facilities are used for analog and digital circuit design, microchip design and fabrication, MEMS, microactuators and micro-sensors design, computational electronics, and so on. Fabrication facilities are available through the National Electronics Technology Center and the National Science and Technology Development Administration located in nearby Science Park.

4.6.3 Faculty and Research Staff

Full-time Faculty

JOYDEEP DUTTA, BSc (Hons), St Edmund's College; MSc (Physics), North Eastern Hill Univ; PhD, IACS, Calcutta Univ, India.

Professor [*Functional materials, nanomaterials, Nanoparticles, selforganisation, Biomimetic processes, Polyelectrolyte deposition, Gas sensors, Bio-sensors, optoelectronic devices*]

MANUKID PARNICHKUN, BEng, Chulalongkorn Univ, Thailand; MEng, PhD, Univ of Tokyo, Japan

Associate Professor [Robotics, control, and measurement (involves with design and development of hardware and software of mechatronics devices); New robot mechanism, novel control algorithm, and innovative measurement concept are investigated]

NITIN V AFZULPURKAR, BEng, Univ of Poona, India; PhD, Univ of Canterbury, New Zealand

Associate Professor [Computer vision (pattern recognition and image processing); MEMS design, fabrication for electronic and bio medical applications; Soft computing algorithms for robotics and automation applications; Mechatronics applications for industrial use]

MONGKOL EKPANYAPONG, B.Eng., Chulalongkorn Univ, Thailand; M.Eng. Asian Institute of Technology, Thailand, M.Sc., Ph.D., Georgia Institute of Technology, USA

Assistant Professor [Embedded Systems, Computer Architecture, VLSI design (Low power design), Physical VLSI design High Performance Computing, GPGPU, DSP]

VISITING FACULTY

Adriano Jose da Conceicao Tevares, Ph.D. (2000) in Industrial Electronics, University of Minho

Adjunct Faculty, currently Assistant Professor at Department of Industrial Electronics-University of Minho. He obtained his, Portugal

Pran Hari Talukdar, his Ph.D. (1982) at Gauhai University, India

Visiting Faculty, currently professor and Professor, Dept.Instrumentation & USIC, Gauhai University. (*Computer Networking and Signal Processing*)

Waleed Mohammed, Ph.D. in Optics from College of Optic and Photonics/ CREOL, University of Central Florida, Orlando, FL, USA.

Adjunct Faculty, currently he is an instructor of International School of Engineering (ISE), Faculty of Engineering, Chulalongkorn University.

Krit Chongsrid, Ph.D. (1996) at Tokyo Institute of Technology, Japan.

Adjunct Faculty, currently he is working as a Managing Director, Mobilis Automata Co., Ltd. He had worked as a researcher on Manufacturing Automation Laboratory at NECTEC.

4.6.4 Grants and Sponsored Research Completed in 2011

Development of an Exoskeleton Robot for Handicapped People

Project Duration: 1-Jul-06 to 31-Dec-11

Project Investigator(s): Manukid Parnichkun

Sponsor: National Electronics and Computer Technology Center, Thailand
Total Contracted Amount (THB): 2,043,100

IEEE International Conference on Robotics and Biomimetics

Duration: 1-Mar-08 to 31-Aug-11

Project Investigator(s): Manukid Parnichkun

Sponsor: Conference Participants Total Contracted Amount (THB):3,000,000

Development of Force Feedback Exoskeleton system for Virtual Reality

Duration: 1-Nov-08 to 31-Dec-11

Project Investigator(s): Manukid Parnichkun

Sponsor: RTG
Total Contracted Amount (THB):952,000

Brain computer interface based mental detection for accident prevention and Machine control: Applications in Fatigue alarming and Robot control

Duration: 1-Jul-09 to 30-Jun-11

Project Investigator(s): Manukid Parnichkun

Sponsor: RTG
Total Contracted Amount (THB):1,000,000

4.6.5 On-going Grants and Sponsored Research

Development of Robot Controller

Duration: 1-Nov-08 to 31-Oct-12

Project Investigator(s): Manukid Parnichkun

Sponsor: Aerofluid Co Ltd/RTG

Total Contracted Amount (THB):2,000,000

Simulation Model for reducing Spring Constant in HDD Suspension

Duration: 1-Dec-08 to 30-Jun-12

Project Investigator(s): Nitin Afzulpurkar

Sponsor:I/U CRC Advanced Manufacturing

Total Contracted Amount (THB):500,000

Master Degree in HDD Engineering Technology #3

Duration: 1-Jul-09 to 31-Dec-12

Project Investigator(s): Nitin Afzulpurkar

Sponsor: Western Digital Co. Ltd.

Total Contracted Amount (THB):

10,528,000

Master Degree in HDD Engineering Technology #4

Duration: 1-Jul-10 to 01-Jul-12

Project Investigator(s): Nitin Afzulpurkar

Sponsor: Western Digital Co. Ltd.

Total Contracted Amount

(THB):10,528,000

Electronic design using GP-GPU for performance improvemen

Duration: 16-Jun-10 to 15-Jun-12

Project Investigator(s): Mongkol

Ekpanyapong Sponsor: TRF

Total Contracted Amount (THB):360,000

Development of imbalance monitoring and balancing control system for two wheel vehicle

Duration: 1-Jan-11 to 31-Dec-12

Project Investigator(s): Manukid

Parnichkun

Sponsor: NSTDA

Total Contracted Amount

(THB):1,991,000

Masters degree in HDD Engineering Technology #5

Duration: 1-Jul-11 to 01-Jul-13

Project Investigator(s): Nitin

Afzulpurkar, Prof Joydeep

Dutta, Manukid Parnichkun

Sponsor: estern Digital Thai Co Ltd

Total Contracted Amount

(THB):6,792,000

4.6.6 Publications

International Journal Articles with Impact factor

Surachat Chantarachit, Sophon Somlor, Noppadol Ajjanaromvat, and Mongkol Ekpanyapong, Low Cost Design for Auto Secure Camera System, International Conference on Embedded Systems and Intelligent Technology (ICESIT) 2011

Paulo Garcia, Filipe Salgado, Paulo Cardoso, Jorge Cabral, Mongkol Ekpanyapong, and Adriano Tavares, A FPGA based C runtime hardware accelerator, International Conference on Industrial Informatics (INDIN), 2011

A. Tavares, M. Ekpanyapong, J. Cabral, P. Cardoso, J. Mendes, and J. Monteiro, Experiments with Embedded System Design at UMinho and AIT, International

Conference on Computers and Advanced Technology in Education (ICCATE) 2011 Viroch Sukontanakarn and Manukid Parnichkun. "Hybrid NN Predictive based LQR Controller for Rotary Double Inverted Pendulum Systems, an Analytical

Study," International Journal of Automation and Control. Inderscience Enterprises Limited, Vol. 5, No. 4, pp.337-355 (2011)

Yunyong Punsawad, Sittichai Aempedchr, Yodchanan Wongsawat, and Manukid Parnichkun. "Weighted-Frequency Index for EEG-based Mental Fatigue Alarm System," International Journal of Applied Biomedical Engineering. Vol. 4, No. 1, pp.36-41 (2011).

Ravipudi Rao, B.K. Patel, and Manukid Parnichkun. "Industrial Robot Selection Using a Novel Decision Making Method Considering Objective and Subjective Preferences," International Journal of Robotics and Autonomous Systems. Elsevier Vol. 59, Issue 6, pp.367-375 (2011) Impact Factor 1.361

M. W. Ashraf, S. Tayyaba, N. Afzulpurkar, A. Nisar, E. L. J. Bohez, T. Lomas, and A. Tuantranont, "Design, Simulation and Fabrication of MEMS-based Silicon Microneedles for Bio-Medical Applications", ECTI Transaction EEC, Vol. 9, No 1, 2011.

Ajab Khan Kasi, Nitin Afzulpurkar, Jafar Khan Kasi, Adisorn Tuantranont, and Paweena Dulyaseree, "Utilization of cracks to fabricate anodic aluminum oxide nanoporous tubular and rectangular membrane," Journal of Vac. Sci. Technol. B, Vol. 29, Issue 04, pp. 2011. Impact Factor: 1.46

Muhammad Waseem Ashraf, Shahzadi Tayyaba, Nitin Afzulpurkar, "Micro Electromechanical Systems (MEMS) Based Microfluidic Devices for Biomedical Applications", International Journal of Molecular Sciences. 2011, 12(6):3648-3704. Impact Factor = 2.279

Suthin Khankhua, Muhammad Waseem Ashraf, Nitin Afzulpurkar, Shahzadi Tayyaba, and Chumnarn Punyasai, "Design and Simulation of MEMS based Tuning Fork Microgyroscope", Applied Mechanics and Materials, Vol. 110-116, pp. 5036-5043, 2011.

Vu Trieu Minh, Nitin Afzulpurkar, W. M. Wan Muhamad, "Fault detection model-based controller for process systems," Asian Journal of Control, Volume 13, Issue 3, pp. 382-397, 2011. Impact Factor: 0.562

Win, Yin Thu, Afzulpurkar, Nitin, Punyasai, Chumnarn, Htun, Hla Thar, "Ultrasonic System Approach to Obstacle Detection and Edge Detection," Sensors & Transducers. Vol. 127, no. 4, pp. 56-68, 2011.

Surachai Panich and Nitin Afzulpurkar, "Mobile Robot Integrated with Gyroscope by Using IKF," International Journal of Advanced Robotic Systems, Vol. 8, No. 2, pp 122-136, 2011. Impact Factor: 0.326

Thitipong Navalertporn, Nitin V. Afzulpurkar, "Optimization of tile manufacturing process using particle

swarm optimization,” *Swarm and Evolutionary Computation*, ELSEVIER, Vol. 1, Issue 2, pp. 97–109, 2011.

Conference Publications

Chaiyaporn Silawatchananai and **Manukid Parnichkun**, “Force Control of an Upper Limb Exoskeleton for Virtual Reality Using Impedance Control,” *Proceedings of the 2011 IEEE International Conference on Robotics and Biomimetics*, Phuket, 2011. pp. 2342-2347, 2011.

Sorawuth Vatanashevanopakorn and **Manukid Parnichkun**, “Steering Control based Balancing of a Bicycle Robot,” *Proceedings of the 2011 IEEE International Conference on Robotics and Biomimetics*, Phuket, 2011. pp. 2169-2174, 2011.

Nicom Promkajin and **Manukid Parnichkun**, “Attitude and Altitude Control of a Four-Rotor Hovercraft Using Sliding Mode Control with Adaptive Sliding Surface,” *Proceedings of the 2011 IEEE International Conference on Robotics and Biomimetics* Phuket, 2011. pp. 1285-1290, 2011.

Suppachai Howimanporn and **Manukid Parnichkun**. “Performance Comparison of Balancing Control of an X-Y Planar Inverted Pendulum System by PID, LQR, and SMC,” *Proceedings of the 2011 TRS Conference on Robotics and Industrial Technology*, CRIT 2011, pp. 41-46, 2011.

Somphong Thanok, Somphop Limsoonthrakul, **Manukid Parnichkun**. “Steering Control of an Intelligent Vehicle Using Fuzzy based Gain Tuning PD Control,” *Proceedings of the 2011 TRS Conference on Robotics and Industrial Technology*, CRIT 2011, pp. 89-92, 2011.

Choopong Chuaypen and **Manukid Parnichkun**. “Control of Balance for Unmanned Bicycle Robot based on Centrifugal Force Control,” *Proceedings of the 2011 TRS Conference on Robotics and Industrial Technology*, CRIT 2011, pp. 110-114, 2011.

Baber, J., Afzulpurkar, N., Bakhtyar, M., Video segmentation into scenes using entropy and SURF, 2011 7th International Conference on Emerging Technologies, ICET 2011, art. no. 6048496

Win, Y.T., Ashraf, M.W., Afzulpurkar, N.,Tayyaba, S., Htun, H.T., Punyasai, C., A novel surveillance system for rescue and military operations, *Proceedings of SPIE - The International Society for Optical Engineering* 8285, art. no. 82852E

Baber, J., Afzulpurkar, N., Dailey, M.N.,Bakhtyar, M., Shot boundary detection from videos using entropy and local descriptor, 17th DSP 2011 International Conference on Digital Signal Processing, *Proceedings*, art. no. 6004918

Khankhua, S., Ashraf, M.W., Tayyaba, S., Afzulpurkar, N., Punyasai, C., Simulation of MEMS based micro-gyroscope using CoventorWare, ECTI-CON 2011 - 8th Electrical Engineering/ Electronics, Computer, Telecommunications and Information Technology (ECTI) Association of Thailand - Conference 2011, art. no. 5947760, pp. 22-25

4.6.7 Doctoral Students' Dissertation

Mechatronics

Control of Rotary Double Inverted Pendulum Using Neural Network Based Adaptive Linear Quadratic Regulator

By. Viroch Sukontanakorn
Supervisor: Dr. Manukid Parnichkun

Absolute Positioning System for Mobile Robot Integrated with Gyroscope by Using IKF

By. Surachai Panich
Supervisor: Dr. Nitin V. Afzulpurkar

Intelligent Process Parameters Optimization using Artificial Neural Network and Bidirectional Particle Swarm Optimization Techniques: A Case Study of Ceramic Tile Industry

By. Thitipong Navalertporn
Supervisor: Dr. Nitin V Afzulpurkar

Microelectronics

MEMS Based Integrated Transdermal Drug Delivery System

By Muhammad Waseem Ashraf
Supervisor: Dr. Nitin V. Afzulpurkar

Fabrication and Characterisation of Multilayer Thin Film Using Self Assembly of Colloidal Gold and Silica Nanoparticles

By Zaheer Abbas Khan

Supervisor: Prof. Joydeep Dutta

4.6.8 Masters Students' Theses and Research Studies

Mechatronics

System Identification of a Spark Ignition Engine for Natural Gas Injection Rate Control

By. Suradech Doungpummet

Supervisor: Dr. Manukid Parnichkun

Design and Simulation of MEMS Inertial Gyroscope

By. Suthin Khankhua

Supervisor: Dr. Nitin V. Afzulpurkar, Mr. Chumnarn Punyasai

Balancing Control of a Hovercraft and Tracking Directions Using GPS

By. Veekiet Kunapinun

Supervisor: Dr. Manukid Parnichkun

Balancing Control of a Unicycle

By. Surachat Chantarachit

Supervisor: Dr. Manukid Parnichkun

Optimization of Plate - Fin Geometries Air Preheater by Using ANSYS Simulation

By. Ekkapong Simtong

Supervisor: Assoc. Prof. Erik L. J. Bohez

Solar-Cell Based In-Vehicle Cooling Systems

By. Tran Phan Vinh Huy

Supervisor: Dr. Mongkol Ekpanyapong

Intelligent Embedded System for Rice Dropping Machine

By. Piyapong Saengmanee

Supervisor: Dr. Mongkol Ekpanyapong

Extended Kalman Filter Based Localization and Control of a Bicycle Robot

By. Eakkaluk Chanthabudsri

Supervisor: Dr. Manukid Parnichkun

Vision Based Automatic Hovering and Moving Control of a Small Scale Unmanned Helicopter

By. Noppadol Ajjanaromvat

Supervisor: Dr. Manukid Parnichkun

Development of a Single-Legged Hopping Robot

By. Sophon Somlor

Supervisor: Dr. Manukid Parnichkun

Automatic HGA Tail Precision Cutting

By. Udthapon Saleewong

Supervisor: Dr. Nitin V. Afzulpurkar

Design and Hardware Layout of an Automotive Electronic Control Unit Focusing an AUTOSAR Compliant Software Implementation

By Thomas Lindenbacher

Supervisor: Dr. Mongkol Ekpanyapong

Design and Simulation of a MEMS-Based Comb-Drive Tunneling Affect Gyroscope for High Sensitivity Application

By. Bikiron Hazarika

Supervisor: Dr. Nitin V. Afzulpurkar

Microelectronics

Optimization of Inkjetted Electrodes Using Water-Based Silver Nanoink

By Claire Mayot Joseph

Supervisor: Prof. Joydeep Dutta

Parallel VLSI Routing Using General-Purpose Computations on Graphics Processing Unit (GP-GPU)

By Lalinthip Tangjittaweechai

Supervisor: Dr. Mongkol Ekpanyapong

Chapter 4.7: SET NANOTECHNOLOGY FIELD OF STUDY

4.7.1 Introduction

Nanotechnology

The programme in Nanotechnology at AIT is designed to address the knowledge-based industries of the 21st century that will require continuous development of their workforce.

Postgraduate nanotechnology masters and Ph. D. courses are a well-recognized means of gaining experience in state-of-the-art techniques and applications. The program at AIT is addressed to the needs of engineers and science background students for entering into this burgeoning technology area. Nanotechnology with a focus on nanomaterials engineering at AIT provides international level engineering program. Partnership in learning and research with the corporate world is been one of the hall marks of the programme.

The AIT Nanotechnology Graduate program is a unique blend of truly cross-disciplinary teaching with an integrated curriculum. Budding Nanotechnologists come from different disciplines, including various engineering disciplines physics, materials sciences and chemistry, so a good postgraduate programme in nanotechnology must be able to accommodate students from a wide range of backgrounds. Nanotechnology is an

interdisciplinary field and the engineering focus of the AIT programme indeed targets only the engineers and science background students.

4.7.2 Research Facilities and Laboratories

Our current research encompasses working in "Poor-man's nanotechnology". The unifying concept in the laboratory is to make use of inexpensive wet-chemical methods to fabricate innovative materials and futuristic device components. The education is supported by a state-of-the-art research center focused on applications of nanoparticles in Energy, Food & Agriculture and the environment. Current research activities focuses on dye-sensitized solar cells, piezotronic devices, gas sensors, bio-diagnostic tools, environmental mitigation through visible light photocatalysis, self-organisation of nanoparticles, and layer-by layer growth from colloidal particles, amongst others.

Nanotechnology Center of Excellence (CoEN)

The Center of Excellence in Nanotechnology addresses the creation of knowledge in areas relevant to industries. Activities

include joint research with other local and international universities and institutes, education and training personnel in the field of nanotechnology, technology transfer and promotion of public and industrial awareness of nanotechnology. This center provides international platform for academicians and researchers from the region, AIT and our partnered universities worldwide to work together with the industries. Current research activities at the CoEN is based on a unifying concept of using inexpensive wet chemical methods and self-organisation processes to fabricate innovative materials, develop diagnostic tools, and apply nanoparticles to environmental issues amongst others. Activities of the CoE at AIT include, but not exclusively, research and development focused on the application of nanoparticles, nanomaterials, devices and sensors. The CoE will support innovative research suited to the region, education and training of highly qualified personnel and in increasing public and industrial awareness of nanotechnology, amongst other activities like arranging conferences, workshops etc. Members of the Center of Excellence in Nanotechnology have published over 50 research papers, articles and book chapters since its inception in 2006. Wide ranging collaboration with multinationals and smaller companies in the region includes

Donaldson Inc. (USA), Rak Investment Co. (UAE), SVI Company Ltd. and Western Digital (Thailand), Advance Nanotec (India) and NanoThread Inc. (USA). The center of excellence in Nanotechnology has extensive research collaborations with State University of New York, Buffalo and Colorado School of Mines (USA), Swiss Federal Institute of Technology-Lausanne (Switzerland), Uppsala University and Royal Institute of Technology (Sweden), Agharkar Research Institute and S. N. Bose Center for Basic Sciences (India)

Chulalongkorn University, Prince of Songkhla University, Naresuan University, NANOTEC/NSTDA (all in Thailand), amongst others.

The Center of Excellence in Nanotechnology, AIT has released a portfolio of 16 nanotechnology products and processes to mark the AIT 52nd anniversary celebrations last September 5, 2011 at Renaissance Hotel, Bangkok. The portfolio release is a culmination of five (5) years of extensive research in the center which is one of the 8 centers in Thailand supported by National Nanotechnology Center (NANOTEC). Four patents for these products have been applied and others have been ready for patenting.

4.7.3 Faculty and Research Staff

Full-time Faculty

JOYDEEP DUTTA, BSc (Hons), St Edmund's College; MSc (Physics), North Eastern Hill Univ; Ph.D., IACS, Calcutta University, India.

Professor (Functional materials, nanomaterials, Nanoparticles, self organisation, Biomimetic processes, Polyelectrolyte deposition, Gas sensors, Bio-sensors, optoelectronic devices)

Associated Faculty

GABOR LOUIS HORNYAK, Ph.D. (1997), Colorado State University. Instructor (Introduction to Nanoscience) and Research Professor, Department of Metallurgical & Materials Engineering, Colorado School of Mines in Golden, Colorado

Professor, [Carbon nanotube synthesis & thermodynamics, nano metal composite materials fabrication and optical properties, template synthesis of gold-55 quantum dot cluster synthesis& optical characterization]

SIVANAPPAN KUMAR, Ph.D. Institut National Poly technique de Toulouse, France *Professor, Energy Field of Study, SERD, AIT*

(Renewable energy resource and technologies, Climate change and greenhouse gas mitigation, Solar Energy Cleaner production, Energy and sustainable development)

C HETTIYAPPAN VISVANATHAN, Ph.D. (1998) Chemical / Environmental Engineering, Institut National Poly technique, Toulouse, France. *Professor, Environmental Engineering and Management Field of Study, SERD, AIT*

(Cleaner production, Industrial Environment Management, Membrane Technology, Solid/Liquid Separation, Water and Wastewater Treatment)

OLEG V SHIPIN, PhD, Inst of Biochemistry and Physiology of Microorganisms, Moscow, Russia.

Associate Professor, Environmental Engineering & Management Field of Study

(Anaerobic and Aerobic Wastewater Treatment; Environmental Impact Assessment; Microbial biotechnology (production of commercially important metabolites); Natural systems (ponds and wetlands) as Wastewater treatment systems; Microbial aspects of Environmental Engineering; Molecular Microbiology, Health and Ecological Risk assessment, Ecological Engineering)

THAMMARAT KOOTTATEP, D.Eng. Water and Wastewater Engineering, Asian Institute of Technology, Thailand

Associate Professor, Environmental Engineering and Management Field of Study, SERD, AIT

(Decentralized Waste and Waster water Treatment Systems, Eco-engineering Technology for Waste and Wastewater Treatment and Management, Environmental Health and Sanitation)

ANIL KUMAR ANAL, DVM., University of Agriculture, Pakistan; MSc. and PhD., AIT, Thailand

Assistant Professor, Food Engineering & Bioprocess Technology Field of Study

(Animal Biotechnology, Food and Pharmaceutical Biotechnology, Dairy and Meat Process Technology, Food Colloids and Biopolymer, Functional Foods, Micro-/Nanoencapsulation, Bionanotechnology)

PRABHAT KUMAR, Dr.Rer.Hort. Uni Hannover, Germany; M.Sc. (Ag. Systems), AIT, Thailand; B.Sc. (Ag.) & Hons. RAU, Pusa, India

Affiliated faculty & Senior Research Specialist, Agricultural Systems & Engineering Field of Study (Integrated Pest Management, Farming Systems, Climate change adaptation, Tropical Plant Production and Protection, Smallholder production, Applied research, Nanotechnology and agriculture)

Visiting Faculty

SIDDHARTH JABADE, Ph.D. (2005) in Mechanical Engineering, Indian Institute of Technology-Bombay, India.

Visiting Faculty (*Intellectual property rights, Innovation management, heat transfer*). STIG-AKE LINDGREN, Ph.D. (Physics) (1980), University of Gothenburg, Sweden. Professor of Chalmers University of Technology, Sweden.

Visiting Professor (*General Physics courses, Quantum Physics and Solid State Physics*)

Adjunct Faculty

CHANCHANA THANACHAYANONT, Ph. D. (1999) and BE (1994), Imperial College, London The National Metals and Materials Technology Center, National Science and Technology Development Agency, Thailand

Adjunct Faculty (Transmission Electron Microscopy, Materials Characterization, Semiconductor Physics, III-V Compound Semiconductors) WALEED S. MOHAMMED, Ph. D. (2004), University of Central Florida (USA), M. Eng (1999) Cairo University, Egypt; Bangkok University (Rangsit Campus), Bangkok, Thailand

Adjunct Faculty (Optical wireless, Micro/nano optics Fiber optics, Grating design, Bio-Photonics)

Research Staff

KARTHIK LAKSHMAN KUNJALI, B.E. Power Electronics, Pune University, India; M.Eng (2011) Nanotechnology, AIT, Thailand

Research Associate (Quantum Dots Based Solar Cell, Hydrogen generation, Dye Sensitized Solar Cell) SAABAH BIN MAHBUB, B.Sc. EEE Islamic University of Technology, Bangladesh; M.Eng (2011) Nanotechnology AIT, Thailand

Research Associate (Optical Properties of Nanometal Simulation, SERS Substrate Optimization) MAYUR BABANRAO CHAUDHARI, B.E. Electronics, Vishwakarma Institute of Technology, Inida: M.Eng (2011) Nanotechnology, AIT, Thailand

Research Associate (Optical properties of metal nanoparticles, size and shape effects, simulation) MAYUREE JAISAI, B.Sc. Biotechnology, Mae Fah Luang University, Thailand

Research Assistant (Hydrothermal growth to produce antimicrobial paper and properties) SHAYAN NAVEED, MBA (2010)Marketing, Asian Institute of Technology, Thailand

Marketing Research Associate (Marketing, Patent application, Advertising and Website development)

4.7.4 Grants and Sponsored Research Completed in 2011

Printed Electronics using Direct Writing Technology

Duration: 8-Mar-05 to 31-Dec-11
Project Investigator(s): Joydeep Dutta

Sponsor: NSTDA
Total Contracted Amount (THB):
2,498,776

Photocatalytic thin film coating technology

Duration: 16-Jun-08 to 31-Dec-11
Project Investigator(s): Joydeep Dutta
Sponsor: National Electronic and Computer Technology Center, National Science and Technology Development Agency, Thailand
Total Contracted Amount (THB):
1,870,940

Lab to large scale dye sensitized solar cells

Duration: 15-Apr-09 to 30-Apr-11
Project Investigator(s): Joydeep Dutta
Sponsor: RTG/SVI Public co.Ltd
Total Contracted Amount (THB):
2,000,000

Flow Modeling in Hard disc Drives

Duration: 15-Dec-09 to 31-Dec-11
Project Investigator(s): Joydeep Dutta, Huynh Trung Luong, Pisut Koomsap
Sponsor: Donaldson Company Thailand
Total Contracted Amount (THB): 1,000,000

Zinc Oxide nanorods as filtration Media for multifunctional applications

Duration: 15-Dec-09 to 31-Dec-11
Project Investigator(s): Joydeep Dutta
Sponsor: Donaldson Company Thailand
Total Contracted Amount (THB): 1,000,000

AIT nanotechnology Portfolio release

Duration: 1-Aug-11 to 31-Dec-11
Project Investigator(s): Joydeep Dutta
Sponsor: Center of Excellence in

Nanotechnology, AIT
Total Contracted Amount (THB):
300,000

International Journal Articles with Impact factor

Zinc stannate nanostructures: Hydrothermal synthesis Sunandan Baruah and Joydeep Dutta Science and Technology of Advanced Materials **12** (2011) 013004 **[JCR 2010 Impact Factor ~ 3.22]**

Production of antibacterial filter paper from wood cellulose R. Imani, M. Talaiepour, J. Dutta, M. R. Ghobadinezhad, A. H. Hemmasi and M. M. Nazhad BioResources **6** (2011) 891-900

[JCR 2010 Impact Factor ~ 1.418]

Super hydrophobic surfaces using selected zinc oxide microrod growth on ink-jetted patterns Myo Tay Z Myint, Rungrot Kitsomboonloha, Sunandan Baruah and Joydeep Dutta Journal of Colloid and Interface Science **354** (2011) 810–815

[JCR 2010 Impact Factor ~ 3.066]

Enhanced Visible Light Photo catalysis by Manganese Doping or Rapid Crystallization with ZnO Nanoparticles Mohammad Abbas Mahmood, Sunandan Baruah and Joydeep Dutta Materials Chemistry and Physics **130** (2011) 531– 535

[JCR 2010 Impact Factor ~ 2.353]

Optical Thin Film Filters of Colloidal Gold and Silica Nanoparticles

Prepared by a Layer-by-Layer Self-Assembly Method

Zaheer Abbas Khan, Rachana Kumar, Waleed S. Mohammed, Gabor L. Hornyak and Joydeep Dutta

Journal of Materials Science **46** (2011) 6877–6882

[JCR 2010 Impact Factor ~ 1.855]

Photo selective Excited State Dynamics in ZnO-Au Nano composites and their Implications in Photo catalysis and Dye-Sensitized Solar Cells Soumik Sarkar, Abhinandan Makhil, Tanujjal Bora, Sunandan Baruah, Joydeep Dutta and Samir Pal

Physical Chemistry Chemical Physics, **13** (2011) 12488–12496

[JCR 2010 Impact Factor ~ 3.453]

Plasmon resonance tuning of gold and silver nano-particle-insulator multi layered composite structures for optical filters

Rungrot Kitsomboonloha, Chayanon Ngambenjawong, Waleed S. Mohammed, Gabor L. Hornyak and Joydeep Dutta

Micro & Nano Letters **6** (2011) 342–344

[JCR 2010 Impact Factor ~ 0.836]

Zinc oxide nanorod mediated visible light photoinactivation of model microbes in water

Ajaya Sapkota, Alfredo J Anceno, Sunandan Baruah, Oleg V Shipin and Joydeep Dutta

Nanotechnology 22 (2011) 215703 (7pp)

[JCR 2010 Impact Factor ~ 3.644]

High-Performance Liquified Petroleum gas sensing based on nanostructures of zinc oxide and zinc stannate

Aarthy Sivapunniam, Niti Wiromrat, Myo Tay Zar Myint and Joydeep Dutta

Sensors & Actuators B: Chemical 157 (2011) 232-239

[JCR 2010 Impact Factor ~ 3.368]

Chitosan capped colloidal gold nanoparticles for sensing zinc ions in water

Sujira Promnimit, Tanmay Bera, Sunandan Baruah and Joydeep Dutta

Journal of Nano Research 16 (2011) 55-61

[JCR 2010 Impact Factor ~ 0.492]

Heterogeneous photocatalysis for removal of microbes from water

Mohammad Abbas Mahmood, Sunandan Baruah, Anil Kumar Anal and Joydeep Dutta

Environmental Chemistry Letters (23 Dec 2011 online) pp. 1-7

[JCR 2010 Impact Factor ~ 2.051]

International Journal Articles & Book Chapters without Impact factor

Toxicity of ZnO and TiO₂ Nanoparticles on Germinating Rice Seed L Prapatsorn Boonyanitipong, Boonthida Kositsup, Prabhat Kumar, Sunandan Baruah and Joydeep Dutta

International Journal of Bioscience, Biochemistry and Bioinformatics, 1 (2011) 282-285

Highly efficient ZnO/Au Schottky barrier dye-sensitized solar cells: Role of gold nanoparticles on the charge-transfer process Tanujjal Bora, Htet Htet Kyaw, Soumik Sarkar, Samir Kumar Pal and Joydeep Dutta

Beilstein Journal of Nanotechnology 2 (2011) 681–690

Spray pyrolyzed pre-coating layer for controlled growth of zinc oxide nano rods by hydrothermal process Mohammad Abbas Mahmood and Joydeep Dutta

Nanoscience & Nanotechnology-ASIA 1 (2011) 92-96

Poor man's nanotechnology- from the bottom up

Sunandan Baruah, Gabor Louis Hornyak and Joydeep Dutta

Perspectives in Nanotechnology #7: Nanotechnology and Global Sustainability, editors: Donald Maclurcan and Natalia Radywyl, CRC Press, ISBN: 9781439855768

(December 2011), ISBN 9781439855768

International Conference Publications

Effects of Zinc Oxide Nanoparticles on Roots of Rice *Oryza Sativa L.*

Prapatsorn Boonyanitipong, Prabhat Kumar, Boonthida Kositsup, Sunandan Baruah and Joydeep Dutta

Proceedings of the 2011 International Conference on Environment and Bio Science (ICEBS2011), Cairo, Egypt, October 21-23, 2011

Zinc Oxide/Zinc Stannate Core/Shell Photoelectrode for Improved Performance of Dye Sensitized Solar Cells Tanujjal Bora and Joydeep Dutta

Proceedings of the 3rd Annual International Workshop on Advanced Materials (IWAM-2011), Ras Al Khaimah Center for Advanced Materials (RAK CAM), UAE, February 20-22, 2011, Page 63

Hydrophobic to Superhydrophobic Micro/Nanostructured Zinc Oxide Coated Surfaces

Myo Tay Zar Myint, Sunandan Baruah, Gabor Louis Hornyak and Joydeep Dutta

Proceedings of the 3rd Annual International Workshop on Advanced Materials (IWAM-2011), Ras Al Khaimah Center for Advanced

Materials (RAK CAM), UAE, February 20-22, 2011, Page 64

4.7.5 Doctoral Students' Dissertation

Studies on Zinc Oxide Nanorods for enhanced Visible Light Photocatalysis

by Dr. Mohammad Abbas Mahmood
Supervisor: Prof. Joydeep Dutta

Fabrication and Characterisation of Multilayer Thin Film Using Self-Assembly of Colloidal Gold and Silica Nanoparticles

By Dr. Zaheer Abbas Khan
Supervisor: Prof. Joydeep Dutta

Hydrothermal Growth of Zinc Oxide Nanostructures for Environmental Applications

by Dr. Sunandan Baruah
Supervisor: Prof. Joydeep Dutta

4.7.6 Masters Students' Theses and Research Studies

Antibacterial Superhydrophobic Cotton Surface

by Miss Hoorieh Fallah
Supervisor: Prof. Joydeep Dutta

Fabrication of Carbon Nanotube Based Ammonia Gas Sensors - All Colloidal Assembly

by Miss Pattamon Teerapanich
Supervisor: Prof. Joydeep Dutta

Self-Organization of Cadmium Telluride Nano crystals on Zinc Oxide Nano rods and their Potential Application in Solar Cells

by Mr. Karthik Lakshman Kunjali
Supervisor: Prof. Joydeep Dutta

Modeling and Optimization of Electromagnetic Components of Silver SERS Substrates

By Mr. Saabah Bin Mahbub
Supervisor: Prof. Joydeep Dutta

Optimization of Ink-jetted Electrodes Using Water-Based Silver Nanoink

By Miss Claire Mayot Joseph
Supervisor: Prof. Joydeep Dutta

Desalination with Capacitive Deionization (CDI) by Layer-by-layer Electrode

By Mr. Fadhlullah Ramadhani
Supervisor: Prof. Joydeep Dutta

Capacitive Deionization for Desalination with Zinc Oxide Nanorods

By Mr. Setyono Hari Adi
Supervisor: Prof. Joydeep Dutta

Controlled-Release Double Coated NPK Compound Fertilizer with Chitosan and Kaolin Clay Superabsorbent Polymer

By Mr. Sigit Budi Santoso
Supervisor: Prof. Joydeep Dutta

Optical Simulation of Mesoscale Metal-insulator Nanocomposites: A Classical Electromagnetic Approach

by Mr. Mayur Babanrao Chaudhari
Supervisor: Prof. Joydeep Dutta

2011 (6th AIT Master's Thesis Competition)

INDUSTRIAL SYSTEMS ENGINEERING
Winner: Mr. Setyono Hari Adi
Thesis Title: "Capacitive Deionization for Desalination with Zinc Oxide Nanorods"

2011 (6th AIT Master's Thesis Competition)

INDUSTRIAL SYSTEMS ENGINEERING
Runner-Up: Mr. Saabah Bin Mahbub
Thesis Title: "Modeling and Optimization of Electromagnetic Components of Silver SERS Substrates"

2011 (3rd AIT Video Research Competition)

Popular Choice Award: Dr. Sunandan Baruah
Video Title: "Pure Water under the Sun."

Chapter 4.8: SET REMOTE SENSING AND GEOGRAPHIC INFORMATION SYSTEMS FIELD OF STUDY

4.8.1 Introduction

Geo informatics comprising Remote Sensing (RS), Geographic Information Systems (GIS) and Global Positioning System (GPS) provides extremely useful tools for environmental and natural resources management. They are widely recognized as supporting tools for the planning, monitoring, and management of the appropriate utilization of resources at the country, regional and global levels.

While they represent multidisciplinary backgrounds, students in RS&GIS share a common interest, that is, to use remote sensing, GIS, GPS and other space technologies as tools in pursuing their academic work as well as in developing new technologies that are applicable to the region. Because of the complexity of the technologies together with the heavy dependence on advanced computer skills, application specialists need to have a sound knowledge of the theoretical aspects and practical approaches to integrate many resources of information that address different applications.

Furthermore, scientists, planners or engineers interested in these technologies should be familiar with

past, present and future satellite systems, their appropriate usage, data acquisition and handling and integration with other data sources.

The curriculum well covers the theoretical aspects and application of space technology, especially in Remote Sensing and GIS. It provides students ample time to gain application know-how through laboratory sessions. Students are free to use satellite data received by the NOAA, AVHRR and MODIS Satellite Receiving Stations for their theses or research studies. Recently such as open source Geoinformatics climate change Monitoring using courses Geoinformatics, Advanced Application Development Advance Analysis Methods and Microwave Remote Sensing are add.

The demand for RS&GIS graduates is very high as there is lack of professionals in these disciplines, particularly those with a vast knowledge of the practical utilization of these technologies. Employment opportunities are available in a wide range of areas, including agriculture, forestry, coastal development and management, urban planning and development, medical technology, mapping and planning, disaster mitigation and environmental management.

Major areas covered in the coursework are fundamentals of remote sensing and GIS, earth energy interaction, atmospheric correction, application potential in various disciplines, GIS data sources, map projection, geostatistics, spatial modeling, automated mapping, digital terrain model, GPS data acquisition, and integration of GIS, remote sensing and GPS.

4.8.2 Research Facilities and Laboratories

The RS&GIS field of study provides excellent facilities for learning, research and projects which consists of the Digital Image Processing laboratory, Institute-wide GIS laboratory, Asia e-learning project experiment room, meeting rooms, and the Geo informatics Center laboratory topographic, landuse, soil, geology maps of Thailand and some aerial photographs, ALOS data, are also available. The RS&GIS library also provides students with more specialized books, journals, and computer manuals. Some of the technical magazines regularly available are GIM International, GIS@Development, and International Journal of Geoinformatics. Some equipment in its laboratory available for academic

activities include: Arc GIS 9.4, ERDAS, Arc View 3.3, ENVI; Total Station; Trimble geoexplorer; Garmin GPS Series III and V; digital camera; wireless hub/switch; wireless USB; network switch; network hub; black/white and color laser printers; A4 and A0 scanners; RFID reader/writer, Sensors and Wi Fi Network, Spectrophotometer, Laser Range Finder, Echo Sounder, Sensor Web GIS; table and personal stereoscopes, SCINDA GPS Base Station, TOPCON Photogrammetry Station and others.

4.8.3 Faculty and Research Staff

Full-time Faculty

KIYOSHI HONDA, BAgr, DEng, University of Tokyo, Japan

Associate Professor (*Image Processing, Erosion control, Terrain modeling, Sensor Web GIS*) NITIN KUMAR TRIPATHI, BTech, National Institute of Technology, Warangal, India; MTech, IIT; PhD, IIT, Kanpur, India.

Associate Professor (*GIS, Remote Sensing, RFID and Vehicle Tracking, Indoor Positioning Systems, Environment, Disaster, Agriculture, Health, Applications*)

Visiting Faculty

MARC SOURIS, PhD, Université de La Rochelle, France

Visiting Professor (*Computational geometry and algorithms, GIS development, Spatial analysis, GIS and Remote Sensing for Epidemiology*) MICHIRO KUSANAGI, BS, MS, Univ of Tokyo, Japan; MS, Ph.D, Univ of California, USA

Visiting Professor (Aerospace System Engineering, Space System Engineering) YOSHIKAZU KAMIYA, BEng, Yokohyama National University, Japan; MEng, Ph.D. University of Tokyo, Japan

Visiting Faculty (Aerospace System Engineering and Microwave Remote Sensing) MASAHIKO NAGAI, BS, St. Cloud State University, USA; MS, Asian Institute of Technology, Thailand; DEng, The University of Tokyo, Japan

Visiting Faculty

(Spatial Information Engineering, Remote Sensing, GIS, Image Processing, Mobile Mapping Ontology, Data Interoperability, Environmental Information Science)

Adjunct Faculty

I.V. MURALI KRISHNA, MTECH, Indian Institute of Technology, India; Ph.D., Indian Institute of Science, India.

Adjunct Professor (Remote Sensing Applications in Environment, Climate Change, Sustainable Development)

SURAT LERTLUM, BS, Norwich University; MS, The George

Washington University, USA; DTechSc Computer Science, Asian Institute of Technology, Thailand

Adjunct Faculty (*GIS, RS, Digital Image Processing, Surveying, Mapping*)

VENKATESH RAGHAVAN, BS, MS, Univ of Poona, India; Ph.D., Univ. of Osaka City, Japan

Adjunct Faculty (*Spatial Information Science and Geo informatics*)

Affiliated Faculty and Research Staff

LAL SAMARAKOON, PhD

Visiting Senior Scientist; Director, GIC (*GIS, RS, Digital Image Processing, Surveying, Mapping*)

MANZUL KUMAR HAZARIKA, PhD, University of Tokyo, Japan; MEng, Asian Institute of Technology, Bangkok, Thailand; MTech, Indian Institute of Technology, Kharagpur; BTech, J N KrishiVishwaVidyalaya (J. N. Agriculture University), India

Senior Research and Training Specialist (*RS and GIS Applications to Global Environment, Terrestrial Carbon Cycle and NPP*) TARAVUDH TIPDECHO, BSc, MSc, ChiangmaiUniv, Thailand; DTechSc, Remote Sensing & GIS, Asian Institute of Technology, Thailand **Research Specialist I** (*Advanced Mapping, Terrestrial Scanning*)

VIVARAD PHONEKEO, Bsc, Volgograd State Pedagogical University, Russia, MSc, DTechSc, Asian Institute of Technology, Thailand

Senior Research Associate (*Remote Sensing and GIS, NOAA AVHRR&Terra/Aqua MODIS receiving and processing system, Digital Image Processing, Computer Graphics, Spatial Data Visualization, MODIS Active Fire Monitoring System, Global Environment and Disaster Monitoring using MODIS*)

VIVARAD PHONEKEO, Bsc, Volgograd State Pedagogical University, Russia, MSc, DTech Sc, Asian Institute of Technology, Thailand

Senior Research Associate (*Remote Sensing and GIS, NOAA AVHRR&Terra/Aqua MODIS receiving and processing system, Digital Image Processing, Computer Graphics, Spatial Data Visualization, MODIS Active Fire Monitoring System, Global Environment and Disaster Monitoring using MODIS*)

4.8.4 Grants and Sponsored Research Completed in 2011

NOAA AVHRR and Terra/ Aqua MODIS

Duration: 1-Apr-07 to 31-Mar-11
Project Investigator(s): Lal Samarakoon
Sponsor: Vision Tech/Japan
Total Contracted Amount (THB): 783,000

Training Programs in Poverty Mapping

Duration: 1-Oct-08 to 31-Oct-11
Project Investigator(s): Lal Samarakoon
Sponsor: Multi donors
Total Contracted Amount (THB): 576,000

Provision of Galileo expertise Networking and Support for International Initiatives

Duration: 1-Nov-08 to 30-Jun-11
Project Investigator(s): Nitin Kumar Tripathi
Sponsor: Instituto Superiore Mario Boella, Italy
Total Contracted Amount (THB): 687,000

World Health Organisation

Duration: 1-Dec-08 to 31-Jan-11
Project Investigator(s): Lal Samarakoon
Sponsor: WHO
Total Contracted Amount (THB): 612,000

Developing Land cover Data Products in Monsoon Asia over the Period 2004-07 through Integration of Landsat and Multi-Temporal ALOS/PALSAR Imagery

Duration: 1-Apr-09 to 31-Dec-11
Project Investigator(s): Manzul Hazarika
Sponsor: University of Oklahoma, USA
Total Contracted Amount (THB): 1,020,000

South East Asia Center on European GNSS for International cooperation and Local development.

Duration: 15-Mar-09 to 30-Jun-11
Project Investigator(s): Nitin Kumar Tripathi
Sponsor: The European GNSS Supervisory Authority
Total Contracted Amount (THB): 1,996,000

Application of Microwave remote sensing (Professional development Training)

Duration: 1-Jul-10 to 28-Feb-11
Project Investigator(s): Lal Samarakoon
Sponsor: Surveyor Association of Malaysia, PEJUTA
Total Contracted Amount (THB): 320,000

Forest Information Planning and Management in Lao PDR

Duration: 1-Jul-10 to 30-Apr-11
Project Investigator(s): Lal Samarakoon
Sponsor: Kokusai Kogo Co Ltd
Total Contracted Amount (THB): 736,000

JAXA Capacity Building 2010 – 2011

Duration: 1-Oct-10 to 31-Dec-11
Project Investigator(s): Lal Samarakoon
Sponsor: Japan Aerospace Exploration Agency
Total Contracted Amount (THB): 8,387,410

The Application of GPU Computing technology to accelerate Geoinformatics Applications

Duration: 31-Jul-09 to 31-May-11
Project Investigator(s): Kiyoshi Honda
Sponsor: RTG
Total Contracted Amount (THB): 990,000

4.8.5 On-going Grants and Sponsored Research

Business and Logistics Management using Integrated RFID and Internet GIS

Duration: 1-Aug-07 to 31-Mar-12
Project Investigator(s): Nitin Kumar Tripathi
Sponsor: RTG/CARACAD
Total Contracted Amount (THB): 1,800,000

Thailand GIS Development for Research on Ontology

Duration: 1-Jan-08 to 20-Dec-13
Project Investigator(s): Lal Samarakoon
Sponsor: Center for Spatial Information Science, University of Tokyo
Total Contracted Amount (THB): 1,050,000

Integrated Coastal Zone Planning and Management Using RS and GIS

Duration: 15-Sep-08 to 31-Mar-12
Project Investigator(s): Nitin Kumar Tripathi
Sponsor: Self-paid
Total Contracted Amount (THB): 1,257,450

UNIGIS Online Masters and Professional Program

Duration: 1-Aug-07 to 31-Dec-12
Project Investigator(s): Nitin Kumar Tripathi
Sponsor: Self-paid
Total Contracted Amount (THB): 1,089,000

Satellite Data utilization for disaster Risk reduction and response Training Seminar and Workshop for Capacity Building in ASEAN

Duration: 1-Feb-09 to 31-Dec-12
Project Investigator(s): Lal Samarakoon
Sponsor: ADRC
Total Contracted Amount (THB): 14,185,344

Integrated Coastal Zone Planning and Management using Geoinformation Technology

Duration: 1-Nov-09 to 31-Mar-12
Project Investigator(s): Nitin Kumar Tripathi
Sponsor: Multi donors
Total Contracted Amount (THB): 544,000

Data generation for Tsunami modeling and Risk assessment

Duration: 1-Oct-09 to 30-Jun-12
Project Investigator(s): Kiyoshi Honda
Sponsor: Asian Disaster Preparedness Center (ADPC)
Total Contracted Amount (THB): 4,947,360

CANAsia

Duration: 1-Oct-11 to 31-Oct-15
Project Investigator(s): Lal Samarakoon
Sponsor: CANAsia Geoinformatics Solution Ltd
Total Contracted Amount (THB): 870,000

Training and Study tour for United Group UG Students

Duration: 1-Jun-11 to 31-May-12
Project Investigator(s): Nitin Kumar Tripathi, Nitin V. Afzulpurkar
Sponsor: United Group of Institutions, India
Total Contracted Amount (THB): 520,000

JAXA Capacity Building 2011 – 2012

Duration: 1-Aug-11 to 31-Dec-12
Project Investigator(s): Lal Samarakoon
Sponsor: Japan Aerospace Exploration Agency JAXA
Total Contracted Amount (THB): 8,384,000

Advance tools for GIS and Remote sensing data processing

Duration: 2-Aug-11 to 31-Aug-12
Project Investigator(s): Nitin Kumar Tripathi
Sponsor: Ministry of Finance and planning Sri Lanka, SUNTAC Myanmar, Sultan Qaboos University Oman
Total Contracted Amount (THB): 300,000

Research on Ionospheric in Asia (RISA)

Duration: 21-Dec-11 to 21-Sep-13
Project Investigator(s): Nitin Kumar Tripathi
Sponsor: Asian Office of Aerospace R&D
Total Contracted Amount (THB): 1,411,740

4.8.6 Publications

International Journal Articles with Impact factor

Jeefoo, P., Tripathi, N.K., and Souris, M. (2011). Spatio-Temporal Diffusion Pattern and Hotspot Detection of Dengue in Chachoengsao Province, Thailand. *Int. J. Environ. Res. Public Health*, 8(1), 51-74. (MDPI, ISSN: 1660-4601, Impact factor: 0.515)

S. Qasim, R. P. Shrestha, G. P. Shivakoti, N. K. Tripathi, Socio-economic determinants of land degradation in Pishin sub-basin, Pakistan. *International Journal of Sustainable Development & World Ecology*, (Taylor and Francis, ISSN: 1350-4509, Impact factor: 0.518)

Hamid Mehmood, and Tripathi, N.K., 2011. Optimizing artificial neural network based indoor positioning system using genetic algorithm *International Journal of Digital Earth*, DOI:10.1080/17538947.2011.60637 (IF = 1.43) (Taylor and Francis, online ISSN: 1753-8955)

Yongyoot Witheetrirong, Nitin Kumar Tripathi, Taravudh Tipdecho and Preeda Parkpian, 2011

Estimation of the Effect of Soil Texture on Nitrate-Nitrogen Content in Groundwater Using Optical Remote Sensing, *Int. J. Environ. Res. Public Health*, 8(8), 3416-3436, <http://www.mdpi.com/1660-4601/8/8/3416/> (MDPI, ISSN: 1660-4601, Impact factor: 0.515)

O.P.Robert, M. Rahman, K.Honda, A.Shrestha, A.Vaseashta, SnO₂ gas sensors and geo-informatics for air pollution monitoring:: *JOURNAL OF OPTOELECTRONICS AND ADVANCED MATERIALS*, Vol. 13, No.5, p.560-564, 2011

Chomchid Imvitthaya, Kiyoshi Honda, Surat Lertlum, Nipon Tangtham, Calibration of a biome-biogeochemical cycles model for modeling the net primary production of teak forests through inverse modeling of remotely sensed data:: *Journal of Applied Remote Sensing*, 5, 053516 (Mar 31, 2011), doi:10.1117/1.3567194 , 2011

Sujittra Charoenhirunyingyos, Kiyoshi Honda, Daroonwan Kamthonkiat, Amor Ines, Soil moisture estimation from inverse modeling using multiple criteria functions:: *Computers and Electronics in Agriculture* , 75, 278–287, ISSN 0168-1699, 2011

Sujittra Charoenhirunyingyos, Kiyoshi Honda, Daroonwan Kamthonkiat and Amor V.M. Ines, Soil Hydraulic Parameters Estimated By Satellite Information Through Data Assimilation:: *International*

Journal of Remote Sensing, Vol. 32, No. 23, 8033-8051, doi:10.1080/01431161.2010.532170 , 2011

Conference Proceedings

Sanit, A., Mehmood, H., and Tripathi, N.K., 2011. An architecture for web based realtime monitoring of infants at hospital nurseries using RFID and Sensor Network. *Proc. of 4th Int. Conf on HealthGIS*, 5-6 August 2011, New Delhi, India, pp 213-215.

Books and Chapters

Nitin Kumar Tripathi, Nakarin Chaikaew and Phisan Jeefoo, 2011. *Impact of Climate Variability on Human Health*, *Geoinformatics for Climate Change Studies*. The Energy and Resources Institute (TERI) Press, New Delhi, India, 259-281

4.8.7 Doctoral Students' Theses

Calibration of a BIOME-BGC Model through Data Assimilation with Remote Sensing Data
By Chomchid Imvitthaya
Supervisor: Dr. Kiyoshi Honda

Spatial-Temporal Dynamics and Risk Zonation of Dengue Fever (DF) and Dengue Haemorrhagic Fever (DHF), and Dengue Shock Syndrome (DSS) in Chachoengsao, Thailand
By Phaisarn Jeefoo
Supervisor: Dr. Nitin K. Tripathi

Level of Riding Service Models for Pavement Monitoring by Using the Phase Array Type L-Band Synthetic Aperture Radar (PALSAR)
By Weerakaset Suanpaga
Supervisor: Dr. Yoshikazu Kamiya

Use of GIS and Spatial Statistics for Investigation of Rural Poverty and Improving Poverty Alleviation Programs: A Case Study in Northeast, Thailand
By Romane Thongdara
Supervisor: Dr. Lal Samarakoon

Automate Generation of Digital Elevation Model from Digital Surface Model in Forest Area using Artificial Neural Networks
By Kande R.M. U. Bandara
Supervisor: Dr. Lal Samarakoon

Real Time Self Mapping Hybrid Positioning System (HyPos)
By Hamid Mehmood
Supervisor: Dr. Nitin K. Tripathi

4.8.8 Masters Students' Theses

Development of Methodologies to Generate Topographic DEMs for Tsunami Simulation Model "INSPIRE"
By Payuha Napat
Supervisor: Dr. Kiyoshi Honda

Developing Methodology for Generating Building Database at Low Cost Condition
By. Nutthawut PromduByong
Supervisor: Dr. Kiyoshi Honda

Mapping Potential Sites for Rainwater Harvesting in the Central Part of Balkh Province, Afghanistan

By. Ahmad Farin Sabety
Supervisor: Dr. Nitin K. Tripathi

Analysis and Forecasting of Snow Cover using ANN in Kaligandaki Basin, Nepal

By. Bhogendra Mishra
Supervisor: Dr. Mukand S. Babe

Analysis and Forecasting of Snow Cover using ANN in Kaligandaki Basin, Nepal

By. Bhogendra Mishra
Supervisor: Dr. Nitin K. Tripathi

Monitoring Rice Brown Spot in Agricultural Crops Using Remote Sensing

By. Haoran Zhang
Supervisor: Dr. Nitin K. Tripathi

Modeling Carbon Sinks in Digital Spaces in Nakhon Nayok Province, Thailand

By Md. Ahasanul Hoque
Supervisor: Dr. Nitin K. Tripathi

A Geo-Spatial Analysis of Elephant Intrusion in Human Human Settlements: A Study of Trends and Patterns in Sri Lanka

By R.M.C.W.M. Rathnayake
Supervisor: Dr. Kiyoshi Honda

Landslide Hazard and Risk Assessment Mapping using Remote Sensing and GIS, Integrated with Geomechanics Engineering

By. Kyaw Swar Myint Thein
Supervisor: Dr. Kiyoshi Honda

An Analysis of Urban Growth and Retail Distribution in Klong Luang, Pathumthani, Thailand

By. Tenzin Choesang
Supervisor: Dr. Nitin K. Tripathi

Evaluation of EO-1 Hyperion Image for Assessment of Soil Organic Carbon in Faizabad Watershed, Tajikistan

By. Farrukh Nazarmavloev
Supervisor: Dr. Kiyoshi Honda

Forecasting Water Demand for Future Urban Expansion using Artificial Neural Network and Geo-Informatics Techniques

By Kuanpat Ngosuwaan
Supervisor: Dr. Nitin K. Tripathi

The Effects of Land Use/Land Cover Change (LULCC) on Soil Erosion and Sediment Transport using ARCSWAT Model in the Upper Pasak River Basin, Thailand

By Jaruporn Tosang
Supervisor: Dr. Nitin K. Tripathi

Geospatial Modeling Urban Growth Pattern in Siem Reap, Cambodia

By Ourng Chan Voleak
Supervisor: Dr. Nitin K. Tripathi

Mapping Paddy Cultivation and Crop Burn Areas Using Modis in Mekong Delta, Vietnam

By. Pham Duy Tien Supervisor: Dr. Nitin K. Tripathi



Remote Sensing and Geographic Informations students at GISTDA.



Remote Sensing and Geographic Information systems students visit to GISTDA

Chapter 4.9: SET STRUCTURAL ENGINEERING FIELD OF STUDY

4.9.1 Introduction

Structural engineering has always been seen as one of the few fields of study where one can combine real technical skills with artistic flair. Structural engineers are known to be people who enjoy innovation, opportunities, responsibility and excitement, whilst working within a creative profession. Structural engineers plan and design various structures such as buildings, bridges, sport stadiums, towers, and underground structures.

The built environment which is designed and constructed by structural engineers has an enormous impact on our everyday lives. In order to design and construct safe and economic structures, they need to keep abreast with the latest methods of structural analysis, modeling concepts for computation, advanced design, material technology, and improved knowledge in structural loadings. The field educates professionals who will be at the forefront of advanced research in Structural Engineering. They are trained to respond creatively to the industrial requirements of infrastructure development

4.9.2 Research Facilities and Laboratories

Structural Engineering Laboratory

The Structural Engineering Laboratory (STE Lab) has a long history of excellence in advanced structural and material research. The STE Lab is equipped with instruments for scientific research, which provide excellent experimental environment for scholars and experts in the Asian region to enhance academic cooperation and development. Completed in 1975 and renovated in 2000, the structural testing area of the laboratory is a versatile area with a two-storey clear height that can be used to carry out a wide range of tests of building materials, components, structural assemblies and models.

One of principal elements of STE Lab is a strong floor system. The strong floor is a 1.5 meter deep heavily reinforced concrete mat, covering an area of 380 square meters, with anchorage slots spaced 1 meter apart and cluster points with a capacity of 1,000 kN per cluster. This arrangement provides versatility in the mounting of experiments, and full-size members of complete structures can be loaded to destruction. A test control room and the hydraulic power supply area are located adjacent to the test floor.

The laboratory is equipped with a series of hydraulic actuators of various load (100 kN to 500 kN.), stroke (+100 mm to +250 mm.) and servo-value capacities for static, dynamic and fatigue testing. Standard laboratory instrumentation for structural engineering is available e.g., extensometer, universal testing machine, ultrasonic pulse velocity and strain gauge preparation, impulse force test hammer, etc.

Seismic Load Simulation Facility

Set up in 2001, the Seismic Load Simulation Facility is basically composed of (1) a rigid, A-shape, steel reaction wall, (2) a 50-ton force generating capacity, 1000-mm piston stroke, hydraulic actuator that operates under precision closed-loop servo value control, and (3) the existing strong reinforced concrete floor of the STE Lab. The facility has the capability to perform various experimental seismic tests on near-full-scale structural models, such as quasi-static tests, cyclic loading tests, and pseudodynamic tests. The facility has been used intensively by many master and doctoral students in STE Field of Study.

Boundary Layer Wind Tunnel Laboratory

This wind tunnel laboratory is a state-of-the-art research facility for the study of wind loads and several complex wind-induced effects on buildings and structures. The laboratory was developed by a joint effort between School of Engineering and Technology at AIT and Faculty of Engineering at Thammasat University. The laboratory, located in Thammasat, is the longest and largest wind tunnel in Thailand. It is capable of simulating atmospheric boundary layer wind as well as smooth and uniform wind in its 2.5m x 2.5m tunnel section with wind speeds varying from 0.5 m/s to 20 m/s. The wind tunnel is well equipped with hot-wire anemometers, pressure transducers with rotary scanning system, multi-component dynamic force sensors, dynamic motion sensors, turn tables, rotary side frames, and several other instruments. With this facility, various types of advanced experimental research study, student training, and industrial aerodynamic tests can be realized. The construction of the wind tunnel was completed in 2003, and it has been used intensively since then by graduated students of AIT and Thammasat University.

4.9.3 Faculty and Research Staff

Emeritus Professor

PISIDHI KARASUDHI, Ph.D., Northwestern Univ., USA; M.Eng.,

AIT, Thailand; B.Eng., Chulalongkorn Univ. Thailand. **[Solid Mechanics]**

Full-time Faculty

WORSACK KANOK-NUKULCHAI, Ph.D., Univ of California (Berkeley), USA. ; M.Eng., AIT, Thailand; B.Eng. (Hon), Chulalongkorn Univ, Thailand.

Professor [*Computational Mechanics; Finite Element Methods; Tall Building Static and Seismic Analysis; Bridge Engineering; Microcomputer Software for Structural Engineering; Genetic Algorithms; Nonlinear Analysis of Structures and Continua; Plate/Shell Structures; Engineering Education; Nanomechanics*]

PENNUNG WARNITCHAI, D.Eng., M.Eng., University of Tokyo, Japan; B.Eng. (Hon), Chulalongkorn Univ, Thailand.

Associate Professor [*Structural Dynamics; Earthquake Engineering; Wind Effects of Structures; Bridge Engineering; Control of Structural Vibration*]

PUNCHET THAMMARAK, PhD, The Univ of Texas, Austin, USA; B.Eng, Chulalongkorn Univ, Thailand;

Instructor [*Finite-Element Analysis (FE Programming; Dynamic problem & Wave Propagation Analysis; Absorbing Boundary Conditions; Material Nonlinearities; Soil-Structure Interactions; Structural Engineering (Reinforced-Concrete Design/Steel Design)*]

Visiting/Adjunct/Affiliated Faculty

KI-DU KIM, Ph.D Imperial College of Science Technology and Medicine, England; M.S., AIT, Thailand, B.S., Hanyang, Korea.

Visiting Professor [*Development of general purpose nonlinear dynamic finite element software; Large displacement elastoplastic analysis of steel shell structures with initial imperfection; Development of non-linear solid, shell and thin-walled beam element Postbuckling behavior of un-stiffened and stiffened composite plate and shell structures using finite element method; Nonlinear analysis of reinforced concrete& prestressed concrete structures; Non-linear dynamic analysis of suspension bridge*]

CHING-JONG WANG, Ph.D. University of Arizona, USA; M.S. Wayne State University USA; B.S. National Central University, Taiwan.

Visiting Faculty [*Seismic performance assessment for bridge structures; Developed procedures and application computer codes for equivalent SDOF- Capacity spectrum method; Equivalent SDOF – Nonlinear dynamic analysis Multi-span bridge frame model – Nonlinear static pushover analysis; Finite element soil-structure dynamic interaction; Developed modeling and analysis computer codes for underground MRT box structure*]

racking analysis; Multi-span bridge deck pounding analysis Flood flow resistance of bridge structures; Impact response of underground conduits]

THANAKORN PHEERAPHAN, Ph.D. and M.Sc., Massachusetts Institute of Technology USA. B.Sc., Virginia Military Institute, USA.

Adjunct Assistant Professor [*Dynamic soil-structure interaction; Seismic behavior of under ground structure; Seismic behavior of earth structure; Multi-Agent simulation; Development of Virtual Clearinghouse for earthquake disaster reconnaissance]*

RAKTIPONG SAHAMITMONGKOL, D.Eng., M.Eng, University of Tokyo, Japan; B.Eng., Sirindhorn International Institute of Technology, Thailand.

Adjunct Faculty [*Cracking Resistance of Expansive Concrete; Chemically Prestressed Concrete; Inspection on Concrete Structures & Performance Based Design; Non-Destructive Testing for Concrete Structures; Tension Stiffening Effect and Bonding Characteristic of Reinforced Concrete]*

SONGKIAT MATUPAYONT, Ph.D., Saitama University, Japan; M.Eng., AIT, Thailand; B.Eng., Chulalongkorn Univ, Thailand.

Adjunct Faculty [*Bridge Engineering; Prestressed Concrete; Structural Analysis and Design]*

KITTIPOOM RODSIN, Ph.D., The University of Melbourne, Australia M.Eng., AIT, Thailand; B.Eng., Chulalongkorn Univ, Thailand.

Adjunct Faculty [*Experimental Investigation of Socket-Type Connection for Pre-Cast Column-Footing Connection; Suppression of Pedestrian Bridge Vibration in Bangkok]*

BUI THANH TAM, D.Eng., M.Eng., AIT, Thailand; B.Eng., HoChiMinh City University of Technology, Vietnam.

Affiliated Faculty and Research Engineer [*Computational Mechanics; Finite Element Analysis; Structural Analysis; Fluid-Structure Interaction; Parallel Computing; Software Development]*

NAVEED ANWAR, D.Eng., M.Eng., AIT, Thailand; B.Sc.Eng., Univ. of Engineering & Tech., Lahore, Pakistan.

Affiliated Faculty [*Structural Analysis and Design; Computational Mechanics; Computer Application; Bridge Engineering; Tall Buildings; Software Development]*

SUN SAYAMIPUK, D.Eng., M.Eng., AIT, Thailand; B.Eng., Kasetsart Univ., Thailand.

Affiliated Faculty and Senior Laboratory Supervisor [*Low cost housing materials Construction materials and its durability, Supplementary cementitious*

materials, Experimental behavior of structural systems, Field testing of structures]

4.9.4 Grants and Sponsored Research Completed in 2011

Retrofitting of Existing Buildings in Thailand

Duration: 1-Apr-08 to 31-Oct-11

Project Investigator(s): Pennung Warnitchai

Sponsor: The Thailand Research Fund

Total Contracted Amount (THB): 3,850,000

Development of Seismic Design Code for Buildings and Structures in Thailand

Duration: 19-Sep-07 to 30-Jun-11

Project Investigator(s): Pennung Warnitchai

Sponsor: Siridhorn Institute of Technology (SIIT)

Total Contracted Amount (THB):2,380,000

Performance Based Design of Knightsbridge Building

Duration: 1-Mar-09 to 31-Dec-11

Project Investigator(s): Naveed Anwar

Sponsor: Century Properties Inc Manila, Phillipines

Total Contracted Amount (THB): 1,530,000

East Serendra

Duration: 1-Jun-09 to 31-Mar-11

Project Investigator(s): Naveed Anwar, Keerati Tunthasawatana

Sponsor: Ayala land Inc

Total Contracted Amount (THB): 680,000

Toyo Thai Project I

Duration: 1-Jun-09 to 31-Mar-11
Project Investigator(s): Pennung Warnitchai, Naveed Anwar
Sponsor: Toyo Thai Co. Ltd
Total Contracted Amount (THB): 650,000

Master Plan for Earthquake Mitigation in Thailand Phase II

Duration: 15-Nov-09 to 31-Dec-11
Project Investigator(s): Pennung Warnitchai
Sponsor: Panya Consultants Co., Ltd.
Total Contracted Amount (THB): 1,568,000

Performance Based Evaluation of Serendra District 1

Duration: 1-Jan-10 to 31-Dec-11
Project Investigator(s): Naveed Anwar, Pennung warnitchai
Sponsor: Serendra Inc
Total Contracted Amount (THB): 1,024,000

Structural Peer Review of Lights Residences Building

Duration: 1-Jun-10 to 31-Dec-11
Project Investigator(s): Naveed Anwar
Sponsor: SM Investments Corporation
Total Contracted Amount (THB):1,440,000

ACEE 2010 the 3rd Asia Conference on Earthquake Engineering

Duration: 1-Sep-10 to 31-Mar-11
Project Investigator(s): Naveed Anwar, Pennung Warnitchai
Sponsor: ASEP, AIT,TIT,EIT
Total Contracted Amount (THB):1,500,000]

4.9.5 On-going Grants and Sponsored Research

Capacity Building of Faculty of Engineering, Balkh University, Afghanistan

Duration: 1-Jan-08 to 30-Jun-12
Project Investigator(s): Naveed Anwar
Sponsor: Balkh University, Ministry of Higher Education, Islamic Republic of Afghanistan
Total Contracted Amount (THB):42,979,260

Building Energy Code

Duration: 1-Jan-01 to 30-Jun-12
Project Investigator(s):Worsak Kanok-Nukulchai
Sponsor: Dansk Energi Management A/S, Denmark
Total Contracted Amount (THB): 14,040,001

Preparation of the Structural Assessment Guideline for Offshore Petroleum Platform and Pipeline

Duration: 29-Dec-07 to 30-Jun-12
Project Investigator(s): Worsak Kanok-Nukulchai, Joko Widjaja
Sponsor: Department of Mineral Fuel, Thailand
Total Contracted Amount (THB): 3,774,000

Mix design of RCC for Upper Pandas Hydropower

Duration: 1-Sep-09 to 30-Aug-12
Project Investigator(s): Sun Sayamipuk
Sponsor:Upper Pandas Hydropower Consultants
Total Contracted Amount (THB):2,006,400

Structural Integrity Evaluation of the Burapa Withi Expressway

Duration: 1-Jun-10 to 31-Jul-12
Project Investigator(s): Pennung Warnitchai
Sponsor:Expressway Authority of Thailand
Total Contracted Amount (THB): 26,980,000

A study on Seismic design and Retrofit of Buildings in Thailand

Duration:1-Jun-11 to 31-May-13
Project Investigator(s): Pennung Warnitchai
Sponsor: The Thailand Research Fund
Total Contracted Amount (THB):5,181,000

Publications

International Journal Articles with Impact factor

4.9.10 Doctoral Students' Dissertation

Optimal Reduction of Inelastic Seismic Demands in High-Rise RC Core Wall Buildings using Energy Dissipating Devices

By Munir Ahmed
Supervisor: Assoc. Prof. Pennung Warnitchai

4.9.11 Masters Students' Theses

Applicability of Enhanced Pushover Analysis Methods Considering Higher-Mode Effect for Tall Buildings
By Amelia Kusuma
Supervisor: Dr. Naveed Anwar

Comparison of Different Modeling Techniques for Bridge Abutments, Determination of Abutment

Response for Longitudinal Loads and Developments

By Stefani Reni

Supervisor: Dr. Naveed Anwar

Determination of Optimal Microwave Curing Process to Obtain the Highest Early Strength of Normal Concrete

By Adnan Nawaz

Supervisor: Dr. Pennung Warnitchai

Development of a general-purpose software package for Offshore Platform Structural Analysis

By Thanh Huu Le

Supervisor: Prof. Worsak Kanok-Nukulchai

Development of Chemically-Prestressed Ferrocement

By Akira Kodaka

Supervisors: Dr. Pennung Warnitchai / Dr. Raktipong Sahamitmongkol

Development of Microwave Curing Technique to Predict the 28-Day Compressive Strength of Fly Ash Concrete

By Abdul Habib Ghafoorzai

Supervisor: Dr. Thanakorn Pheeraphan

Development of Post-Tensioned Precast Concrete Building Systems for Seismic Resistance

By May Phyo Aung

Supervisor: Dr. Pennung Warnitchai

Diaphragm Effects on Tall Buildings Curved in Plan

By Ja San Lu

Supervisor: Dr. Naveed Anwar

Effective Modeling of Shear Walls in High Rise Buildings for Nonlinear Static and Dynamic Analysis

By Rojit Shahi

Supervisor: Dr. Naveed Anwar

Effects of Typical Configuration Irregularities on Seismic Performance of Gravity-Load-Designed RC Buildings

By Sarun Chimamphant Supervisor: Dr. Pennung Warnitchai

Enhanced Conductivity Measurement Techniques for Evaluation of Metakaolin Pozzolanic Activity

By Purna Bahadur Chhetri Supervisor: Dr. Pennung Warnitchai

Estimation of Potential Losses of a Major City from Earthquake Disasters

By Miti Nuntatikul

Supervisor: Dr. Pennung Warnitchai

Flexural Strengthening of Reinforced Concrete Beam Using High Performance Ferrocement

By Kamaluddin Kamal

Supervisor: Dr. Pennung Warnitchai

Impact of Different Design Parameters on the Seismic Performance of Hybrid Precast Wall Systems

By Muhammad Irshad Qureshi

Supervisor: Dr. Pennung Warnitchai

Implementation of New Constitutive Relations for Shear-Flexure Interaction for Cyclic Response of Squat RC Walls

By Omar Hayat

Supervisor: Dr. Pennung Warnitchai

Performance of Metakaolin Mortar Against Carbonation

By Chatree Kittisapcharoen

Supervisor: Dr. Sun Sayamipuk

Properties of High Performance Grouts Made with Various Supplementary Cementitious Materials

By Atipong Chuamuangphan

Supervisor: Dr. Pennung Warnitchai

Properties of Magnesia-Phosphate Cement for Rapid Repair Mortar

By Monsan Visessgahamin

Supervisor: Dr. Sun Sayamipuk

Seismic Performance Improvement of Gravity-Load-Designed (GLD) Reinforced Concrete Frame Buildings

By Phichaya Suwansaya

Supervisor: Dr. Pennung Warnitchai

Seismic Performance of Precast Hybrid Frame-Wall Buildings

By Bahram Babayanazadeh Ahari

Supervisor: Dr. Pennung Warnitchai

Seismic Safety Evaluation of Earth Dam in Northern Thailand

By Bhuddarak Charatpangoon

Supervisors: Dr. Pennung Warnitchai / Dr. Kyung-Ho Park

Self-Healing Performance of Concrete with Different Additives

By Dechkhachorn Jaroenratanapirom

Supervisor: Dr. Pennung Warnitchai

Shear Strengthening of RC Member by Near-Surface Mounted AFRP Rods

By Pongsak Wiwatrojanagul

Supervisor: Dr. Raktipong

Sahamitmongkol

Ultimate Drift at Gravity Load Collapse of Non-Ductile RCc Column

By Tahir Mehmood
Supervisor: Dr. Pennung Warnitchai

*Utilization of MK-Based Geopolymer
as Adhesives for Refractory Brick*

By Atinuch Sinsilaket
Supervisor: Dr. Pennung Warnitchai

Chapter 4.10: SET TELECOMMUNICATIONS FIELD OF STUDY

4.10.1 Introduction

The **Telecommunications Field of Study** offers areas of specialization in transmission systems; switching systems; telematics; network planning, and in collaboration with the School of Management telecommunications management. The courses offered emphasize modern telecommunications skills in systems planning and engineering, telecommunications software development, and administrative and financial aspects of telecommunications management.

Graduates from the master's program form the nucleus for effective high-level technical planning and management operations at their employer organizations. Some of the graduates are engaged in planning, development, and service activities leading to the installation, commissioning, management, design, etc. of value-added systems. Given the important role of our graduates in the development of the telecommunications sector, the learning is of significant benefit to the users of telecommunications services within the region. Graduates of the doctoral program play key roles in enhancing the level of education and research in the

national universities of the region, and promote and strengthen the R&D potential of emerging regional manufacturing industries.

4.10.2 Research Facilities and Laboratories

Today's fast-booming world of Telecommunications and Computer networking plays a significant leadership role. To support this achievement the Telecommunications field of study puts the effort to continue the development of telecommunications technologies and systems. It covers a wide variety of research in telecommunications ranging from modeling, analysis wire line and wireless systems to application and protocol development. Its research subjects are in coherent optical communications; congestion control, ATM, and B-ISDN networks; error correction and detection methods; mobile and Internet traffic studies; multiple access strategies for cellular mobile, satellite systems, and cabled networks; network performance analysis, planning and design; and speech processing. Its research specializations are in broadband networks; network planning; Switching systems; telecommunications management in collaboration with the School of

Management; telematics; and transmission systems.

Transmission and Switching Lab (TSL)

The Transmission and Switching lab is equipped with Nokia Digital Switching Exchange DX200 (DX220, DX210) that supports PSTN and ISDN. There are also several telephone switches, traffic simulators, protocol analyzer, PDH/SDH (STM1 & STM4) transmission systems, fiber optic line equipment, transmission line analyzer, error rate meter which are available for experiment in switching, transmission and internetworking. The switching and transmission systems are integrated as real telecommunications network. Among the applications whose study has been made possible by these systems are Operation and Maintenance, performance measurements of real narrowband and broadband telecommunication networks, as well as new services.

Network Planning Lab (NPL)

High performance computer aided network planning tools are supported by several workstations at the Network Planning lab. This lab provides hands-on experience

design and optimization in radio network, fixed network and fiber optical network.

Wireless Lab (WL)

The main purpose of the Wireless laboratory is for measurement and performance analysis. It is equipped with Modulation and Error rate measurement meters, Simulation software like SATSIM, which was developed by the students, is a simulation package to calculate the sub-satellite points of a LEO/MEO/GEO and its orbital parameters. It also displays graphically on a two-dimensional earth map the instantaneous position and path traced by the satellite (Multi orbit and Multi satellite). Another is NMS/X, is a measurement system for GSM, DCS and NMT networks tracing, capable of measuring up to four networks simultaneously. The results are used for benchmarking service quality of operational cellular networks. These results can be analyzed and can be used for tuning the network parameters in NPS/X.

Communications Labs (CL)

The Communications lab is used to perform experiments courses under Signal and Systems, Communications Electronics, Digital Transmission Technology and Digital Signal Processing. Test bench equipment includes analog and digital oscilloscopes, function generators,

analog and digital Spectrum analyzers, Digital sampling oscilloscopes and DSP cards and workstations which have simulation applications like MATLAB.

Computer Laboratory (PCL)

There are two Computer Laboratories in Telecommunications Program. One is for Senior students and one is for Junior Students. All computers are latest powerful computers.

TC Library

In Telecommunications Program, there is a small library, from where students can borrow telecommunication related journals, manuals and reference books.

4.10.3 Faculty and Research Staff

Full-time Faculty

KAZI MOHIUDDIN AHMED, MSc, Inst of Communications, Leningrad, USSR; PhD, Univ of Newcastle, Australia.

Professor (*Telecommunication Networks; Digital Modulation Techniques; Satellite Communications; Cellular Mobile Communications; Digital Transmission and Communications*)

R M A P RAJATHEVA, B.Sc. Hons. (Eng), Moratuwa Univ, Sri Lanka; M.Sc., Ph.D. (Electrical and

Computer Eng), Univ of Manitoba, Canada.

Associate Professor (*Digital and Mobile Communications, Cooperative Diversity, Relay Systems, OFDMA Resource Allocation, Cognitive Radio: Detection/Estimation Techniques, Space Time Processing-MIMO Systems, Distributed Video Coding (DVC)*)

TEERAPAT SANGUANKOTCHAKORN, BEng, Chulalongkorn Univ, Thailand; MEng, DEng, Tokyo Institute of Technology, Japan.

Associate Professor (*Data Communications; Broadband Integrated Services Digital Networks; Multimedia Communications and Systems; Network Quality of Service*)

POOMPAT SAENGUDOMLERT, BSE, Princeton Univ; MS, PhD, Massachusetts Inst of Tech, USA

Assistant Professor [Communication theory, optical networks, resource allocation problems, and array processing; Recent research activities have focused on optical network designs based on existing infrastructure networks and communications for disaster management]

Visiting Faculty

TAPIO J ERKE, MSc, Helsinki Univ of Tech, Finland.

Visiting Associate Professor [Traffic measurements, modeling, and performance in various telecommunication networks, PSTN, Cellular, Internet, ATM, and optical networks; Resource allocation for different services, network dimensioning and optimization, and switching structures]

4.10.4 Grants and Sponsored Research Completed in 2011

Creating Smart Environments through Indoor Optical Wireless Data Transmissions using White light LED's

Duration: 1-Sep-09 to 30-Jun-11
Project Investigator(s): Poompat S.
Sponsor: RTG
Total Contracted Amount (THB): 920,000

4.10.5 Publications International Journal Articles with Impact factor

P. Vesarach and P. Saengudomlert, "Switch port allocation in WDM networks with hybrid optical electronic switching nodes," *IEICE Transactions on Communications*, vol. E94-B, no. 4, pp. 928–939, April 2011.

S. Herath, N. Rajatheva, C.Tellambura (2011) Energy Detection of Unknown Signals in Fading and Diversity Reception. - *IEEE Transactions on Communications* 59 (9), 2443-2453.

Nuwan Suresh Ferdinand; Nandana Rajatheva (2011) Unified Performance Analysis of Two-Hop Amplify-and-Forward Relay Systems with Antenna Correlation. - *IEEE Transactions on Wireless Communications* 10 (9), 3002-3011

Nuwan Suresh Ferdinand; Nandana Rajatheva (2011) Performance analysis of imperfect channel estimation in MIMO two hop fixed gain relay network with beamforming. - *IEEE Communications Letters* 15 (2), 208-210

Nuwan Suresh Ferdinand; Nandana Rajatheva; Matti Latva-aho (2011) Effects of Antenna Correlation in MIMO Two Hop AF Relay Network over Rayleigh-Rician Channels. - *IEEE Communications Letters* 15 (9), 941-943

Haroon Rasheed, N. Rajatheva. (2011) Spectrum Sensing for Cognitive Vehicular Networks over Composite Fading. - *International Journal of Vehicular Technology* 2011, 1-9.

Mohsin Nazir, Nandana Rajatheva , Matti Latva-aho (2011) Bandwidth Resource Competition in Cooperative Cognitive Wireless Communications. - *International journal of wireless information networks* 18 (4), 243-256.

Oruthota U.S., Rajatheva Nandana (2011) Cooperative Diversity Based Multi-Carrier CDMA System with

Decode and Forward Relays in Rayleigh Fading channels. - *Wireless personal communications* 58 (3), 503-523

Conference Publications

M.Z. Farooqui and P. Saengudomlert, "Average transmit power reduction through power allocation for OFDM-based indoor wireless optical communications," in *Proceedings of ECTI-CON 2011, Thailand, 17–19 May 2011.*

R.K. Saha and P. Saengudomlert, "Novel resource scheduling for spectral efficiency in LTE-advanced systems with macrocells and femtocells," in *Proceedings of ECTI-CON 2011, Thailand, 17–19 May 2011.*

W. Yuttachai and P. Saengudomlert, "Detection and localization of link quality degradation in WDM networks," in *Proceedings of ECTI-CON 2011, Thailand, 17–19 May 2011.*

K.L. Sterckx and P. Saengudomlert, "Visible light communication via dimmable LED lamps," in *Proceedings of European Conference on Networks and Optical Communications (NOC 2011), UK, 20–22 July 2011.*

Amila Pradeep Kumara T. G.; Nandana Rajatheva (2011) A Simple Equalization Technique to Minimize ICI in OFDMA-Based Femtocell Networks. (Scientific conference proceedings). - *PIMRC'11: 2011 IEEE*

22nd International Symposium on Personal, Indoor and Mobile Radio Communications. -, Toronto, Canada. 112-116

Dhungana, Y. ; Rajatheva, N. ; (2011) Analysis of LMS Based Dual Hop MIMO Systems with Beamforming. (Scientific conference proceedings). - Communications (ICC), 2011 IEEE International Conference on. -. Japan, IEEE. 1-6.

Laddu Keeth Saliya Jayasinghe, Nandana Rajatheva, Matti Latva aho (2011) Dual Hop MIMO OSTBC Communication over Rayleigh-Rician Channel. (Scientific conference proceedings). - MIMO. IEEE Vehicular Technology Conference, Spring 2011. 1 – 5.

Nuwan Suresh Ferdinand; Nandana Rajatheva; Matti Latva-aho (2011) Effect of antenna correlation on the performance of MIMO multi-user dual hop relay network. (Scientific conference proceedings). -. IEEE Globecom. USA, IEEE. 6

Mathew Goonewardena, Nandana Rajatheva†, Tijani Chahed‡, Djamel Zeghlache (2011) ENPA and EBPA Models for Primary User Activity Based Power Allocation in Cognitive Systems. (Scientific conference proceedings). - PIMRC'11: 2011 IEEE 22nd International Symposium on Personal, Indoor and Mobile Radio Communications.

Sugathapala, I. ; Rajatheva, N. (2011) Game theory based capacity and

power optimization in OFDMA femtocell networks. (Scientific conference proceedings). - Industrial and Information Systems (ICIIS), 2011 6th IEEE International Conference on. -, IEEE. 120-124.

Uditha L. Wijewardhana; Nandana Rajatheva; Matti Latva-aho (2011) Interference and Performance Analysis for Cognitive Adhoc Network with Relay Assisted Primary Link. (Scientific conference proceedings). - PIMRC'11: 2011 IEEE 22nd International Symposium on Personal, Indoor and Mobile Radio Communications. IEEE. 676-680.

Nuwan Suresh Ferdinand; Nandana Rajatheva (2011) Multi-User Scheduling in AF Relay Network with Antenna Correlation. (Scientific conference proceedings). - IEEE VTC. IEEE VTC. Hungary, IEEE. 5 Laddu Keeth Saliya Jayasinghe, Nandana Rajatheva, Matti Latva aho (2011) Optimal Power Allocation for PNC Relay Based Communications in Cognitive Radio. (Scientific conference proceedings). - PNC. IEEE ICC, Japan 2011. 1 – 5.

Herath, P. ; Gunawardana, U. ; Liyanapathirana, R. ; Rajatheva, N. (2011) Outage probability analysis of two-hop MIMO relay networks with interference at the relay. (Scientific conference proceedings). - Communications Theory Workshop (AusCTW), 2011 Australia, IEEE. 89 - 93.

K.B.Shashika Manosha, Nandana Rajatheva, Matti Latva-aho (2011) Overlay/Underlay Spectrum Sharing for Multi-Operator Environment in Cognitive Radio Networks. (Scientific conference proceedings). - CognitiveRadio. IEEE Vehicular Technology Conference, Hungary. 1-5.

Sanguanpuak, T.; Rajatheva, N.; (2011) Performance Analysis of Primary User Energy Detection in a Cognitive Relay System with Diversity. (Scientific conference proceedings). - Vehicular Technology Conference (IEEE Vehicular Technology Conference Hungary Spring 73rd., IEEE. 1-5.

Nuwan Suresh Ferdinand; Nandana Rajatheva; Matti Latva-aho (2011) Performance Analysis of Two-Way Relay System with Antenna Correlation. (Scientific conference proceedings). - IEEE Globecom. United States.

Nuwan Suresh Ferdinand; Nandana Rajatheva; Matti Latva-aho (2011) Performance of OSTBC MIMO Amplify-and-Forward Two-Hop Relay System with Asymmetric Channels. (Scientific conference proceedings). - IEEE ISWCS. Aachen, Germany.

Uditha Lakmal Wijewardhana, Rajatheva Nandana (2011) Power Allocation for Cognitive Ad hoc Network with Relay Assisted Primary Link. (Scientific conference proceedings). - Cognitive Radio and Power Control. IEEE

ISWCS 2011. Germany, IEEE. 562 - 566.

Banjade, Vesh Raj S. ; Rajatheva, Nandana (2011) Primary user capacity maximization in cooperative detection network using m out of N fusion rule. (Scientific conference proceedings). - Wireless Communication Systems (ISWCS), 2011 8th

International Symposium on. -. Gamage, Amila Tharaperiya; Rajatheva, Nandana; Codreanu, Marian (2011) Resource allocation for OFDMA-based relay assisted two-tier femtocell networks. (Scientific conference proceedings). - Wireless Communication Systems (ISWCS), 2011 8th International Symposium on. -. Aachen, Germany

Nuwan Suresh Ferdinand; Nandana Rajatheva (2011) Unified Performance Analysis of Two-Hop Fixed Gain Relay Systems with Beamforming. (Scientific conference proceedings). - 2011 IEEE International Conference on Communications (ICC). ICC. Japan.

Teerapat Sanguankotchakorn and Kumar Pudashine: The Cross-layer Framework for Efficient MPEG-4 Video Streaming over IEEE802.11e in MANETs, The 8th IEEE ECTI-CON 2011, Khon Kaen, Thailand, pp.369-372, May 17-20, 2011.

Teerapat Sanguankotchakorn and Padam Maharjan: A New Approach for QoS Provision Based on Multi-

constrained Feasible Path Selection in MANET, The 8th IEEE ECTI-CON 2011, Khon Kaen, Thailand, pp. 352-356, May 17-20, 2011.

Teerapat Sanguankotchakorn and Thanapol Sangsrichan: OLSR Control Overhead Reduction by Using Game Theory, The 8th IEEE ECTI-CON 2011, Khon Kaen, Thailand, pp. 373-376, May 17-20, 2011.

Kunagorn Kunavut and Teerapat Sanguankotchakorn: Optimized Path Selection Process in OLSR based on Weighted Connectivity Index and Delay, The 8th IEEE ECTI-CON 2011, Khon Kaen, Thailand, pp. 348-351, May 17-20, 2011.

Teerapat Sanguankotchakorn and Thanathorn Dechasawatwong: Automatic Attack Detection and Correction System Development, The 13th Asia Pacific Network Operations and Management Symposium: Managing Clouds, Smart Networks and Services (APNOMS 2011), Taipei, Taiwan, September 21-23, 2011.

Amit Kumar Tamang and Teerapat Sanguankotchakorn: MPEG-4 Video Transmission over IEEE802.11e EDCA in Multi-hop OLSR MANET using Cross layer Approach, Asian Himalayan International Conference on Internet (AH-ICI2011), The next Generation of Mobile, Wireless and Optical Communication Networks, Soaltee Crowne Plaza Hotel, Kathmandu, Nepal, November 4-6, 2011.

Ram S. Dahal and Teerapat Sanguankotchakorn: QoS Routing in MANET through Cross-Layer Design with BER and Modifying AODV, Asian Himalayan International Conference on Internet (AH-ICI2011), The next Generation of Mobile, Wireless and Optical Communication Networks, Soaltee Crowne Plaza Hotel, Kathmandu, Nepal, November 4-6, 2011.

Kunagorn Kunavut and Teerapat Sanguankotchakorn: QoS Routing for Heterogeneous Mobile Ad Hoc Networks Based on Multiple Exponents in the Definition of Weighted Connectivity Index, The 7th International Conference on Signal Image Technology & Internet Based System (SITIS2011), Dijon, France November 28-December 1, 2011.

Books and Chapters

P. Saengudomlert, Optimization for Communications and Networks. Science Publishers, Enfield, NH, USA, 2011.

4.10.5 Doctoral Students' Dissertation

Capacity Provisioning in WDM Networks with Traffic Grooming and Optical Bypass

By. Pratkasem Vesarach
Supervisor: Dr. Poompat Saengudomlert

Evaluation of Real Time Performance of Impulse Radio Time Hopping UWB Field Bus

By. Farah Haroon
Supervisor: Prof. Kazi Mohiuddin Ahmed

Performance Analysis of Cooperative Networks: Bit Interleaved Coded Modulation with Iterative Decoding and Space Time Analog Network Coding over Various Fading Environments

By. Shujaat Ali Khan Tanoli
Supervisor: Dr. R.M.A.P. Rajatheva

Sensing Analysis for Cognitive Radio in Multipath and Shadowing

Conditions over Composite Fading
By. Haroon Rasheed
Supervisor: Dr. R.M.A.P. Rajatheva

4.10.6 Masters Students' Theses and Research Studies

Traffic Grooming in Translucent Optical Networks Considering the Physical Layer Impairment
By. Suramya Sharma Dahal
Supervisor: Dr. Poompat Saengudomlert

Downlink Outage Probability Analysis and Optimized Power Allocation for Two-Tier Femtocell Networks

By. Sumudu Prasad Samarakoon
Supervisor: Dr. R.M.A.P. Rajatheva

Performance Analysis of LMS based MIMO Relay Communication

By Yamuna Dhungana
Supervisor: Dr. R.M.A.P. Rajatheva

Distributed Traffic Grooming with Alternate Routing in WDM Networks

By. Witsarut Pornsrimate
Supervisor: Dr. Poompat Saengudomlert

Performance Improvement of OLSR in Heterogeneous Manet Using Modified Connectivity Index

By Aaronrot Choosakun
Supervisor: Dr. Teerapat Sanguankotchakorn

Distributed Survivable Routing in Transparent WDM Networks Using a Modified Resilience Matrix

By Pichaya Sangrungs
Supervisor: Dr. Poompat Saengudomlert

Improving Search in Peer-to-Peer Networks Using People Social Patterns

By Neetya Shrestha
Supervisor: Dr. Poompat Saengudomlert

Cooperative Communication with Cognitive Radios: Distributed Detection, Fusion and Power Allocation

By. Vesh Raj Sharma Banjade
Supervisor: Dr. R.M.A.P. Rajatheva

Resource Allocation and Interference Mitigation for OFDMA Based

Wireless Hierarchical Networks
By. Tharaperiya Gamage Amila Pradeep

Kumara
Supervisor: Dr. R.M.A.P. Rajatheva

Dynamic Survivable Traffic Grooming with P-Cycle Protection in WDM Networks

By. Nutthapol Sivasri
Supervisor: Dr. Poompat Saengudomlert

Modified Connectivity Index on AODV Routing Protocol in Heterogeneous Manet

By Sirinapa Sirithorn
Supervisor: Dr. Teerapat Sanguankotchakorn

Mean Packet Delay Analysis for Limited Service in Epon with Heterogeneous Traffic and Large Round Trip Time

By. Atirut Utumtong
Supervisor: Dr. Poompat Saengudomlert

TCP Behavior over Wireless Links: Possible Improvements with Scheduling and Network Coding

By. Lakmal Madhusanka Liyanage
Supervisor: Dr. Poompat Saengudomlert

Construction and Analysis of Efficient Block Codes for Data Transmissions via Dimmable Light

By. Shashi Shah
Supervisor: Dr. Poompat Saengudomlert.

Chapter 4.11: SET TRANSPORTATION ENGINEERING FIELD OF STUDY

4.11.1 Introduction

Industrialization and population growth have tremendous impacts in the movement of people and goods. Everyday, movement is hampered by congestion, insufficiency of public transport facilities, traffic accidents, and other conditions. Moreover, as manufacturing expands globally, businesses want to reduce transportation costs by limiting the number of distribution nodes. Concerns over congestion on highways, increasing pollution and hazardous materials all emphasize the need to effectively maximize transportation systems. Thus, the issue of transportation is obviously crucial, not only now but in the future.

The Transportation Engineering field exposes students to the process of alleviating transportation problems. The coursework and research in the area provide advanced knowledge in transportation planning and economics, traffic engineering and safety, and the design of highways/pavements and other transportation facilities. Transportation Engineering students acquire advanced skills concerning the planning, design, operations, maintenance, rehabilitation, performance, and evaluation of transportation systems, including

their economic and public policy aspects. The field imbues in each student the development of analytic, problem-solving, design, and management skills suitable for public and private sector professional work.

4.11.2 Faculty and Research Staff

Emeritus Professor

JOHN HUGH JONES, B.S., B.Eng., University of California, USA (Highway Engineering, Transportation Engineering)

Full-time Faculty

KUNNAWEE KANITPONG, Ph.D., University of Wisconsin- Madison; M.Sc., University of Maryland at College Park, USA; B.S., Chulalongkorn University, Thailand.

Associate Professor (*Road Traffic Safety, Accident Data Analysis, Highway Materials and Construction, Pavement Design and Analysis, and Pavement Management System*)

THIRAYOOT LIMANOND, Ph.D., University of California, Davis, USA; M.S., Arizona State University, USA; B. Eng., Chulalongkorn University, Thailand **Assistant Professor** (*Sustainable transport, travel*

demand, transportation planning, traffic engineering, transport energy planning, intelligent transportation system)

Visiting Faculty

HIRONORI KATO, D.Eng., M.Eng., B.Eng., University of Tokyo, Japan

Visiting Associate Professor (*Transportation planning and policy; travel behavioral analysis; transportation project evaluation*)
KAZUSHI SANO, D.Eng., M.Eng., B.Eng., University of Tokyo, Japan

Visiting Associate Professor (*Transportation Planning, Traffic Engineering, and Logistics*)
TAKASHI NAKATSUJI, D. Eng., M. Eng., B. Eng., Hokkaido University, Japan.

Visiting Professor (*Traffic Engineering, Traffic Flow Simulation, Winter Maintenance, Traffic Accident Reconstruction*)

Adjunct Faculty

PIYAPONG JIWATTANAKULPAISARN, Ph.D., Imperial College London, United Kingdom; M.Eng., Asian Institute of Technology, Thailand; B. Eng., Chulalongkorn University, Thailand.

(Wider Economic Impacts of Transport Infrastructure, Highway Development and Land Use,

Financing Transport Infrastructure, Econometric Modeling for Policy Analysis, Statistical and Quantitative Methods for Transportation Analysis, Fuel Demand Modeling, Accident Risk Behaviours of Road Users, Traffic Safety Engineering and Evaluation of Road Safety Interventions)

Research Staff

PREDA JATURABONG, M.Eng. (Transportation Engineering), Asian Institute of Technology; B.Eng. (Civil Engineering), Kasetsart University, Bangkok, Thailand.

Research Associate

SATTRAWUT PONBOON, M. Eng. (Transportation Engineering), Asian Institute of Technology, Thailand; B.Eng. (Transportation Engineering), Suranaree University of Tech., Nakhon Ratchasima, Thailand.

Research Associate

SUMETHEE SONTIKUL, M. Eng. (Transportation Engineering), Asian Institute of Technology; B. Eng. (Civil Engineering), King Mongkut's Institute of Technology Ladkrabang, Bangkok, Thailand.

Research Associate

SUPATTRA SAMRANJIT, M.A. (Library and Information Science), Ramkhamhaeng University; B.A. (Communication Arts) Bangkok University, Bangkok, Thailand.

Research Associate

4.11.3 Grants and Sponsored Research Completed in 2011

Accident in Depth Study Training and workshop

Duration: 22 Jun 10 - 30 Apr 11
Project Investigator(s): Kunnawee Kanitpong
Sponsor: Siam Cement Group (SCG)
Total Contracted Amount (THB): 96,300

An Agent based Dynamic simulation Model for Tour Area evaluation

Duration: 01 Jul 09 - 30 May 11
Project Investigator(s): Hyunmyung Kim
Sponsor: RTG
Total Contracted Amount (THB): 1,000,000

Analysis of Accident Cost in Thailand by Willingness to Pay Method

Duration: 13 Jan 10 - 30 Apr 11
Project Investigator(s): Kunnawee Kanitpong
Sponsor: Mitsui Sumitomo Insurance Welfare Foundation
Total Contracted Amount (THB): 150,000

Knowledge Dissemination to Improve Road Safety for Rural Community

Duration: 01 Sep 08 - 30 Jun 11
Project Investigator(s): Kunnawee Kanitpong
Sponsor: Toyota Motor Thailand Co., Ltd.
Total Contracted Amount (THB): 1,605,000

Road Safety Watch Central Region

Duration: 01 Apr 10 - 30 Jun 11
Project Investigator(s): Kunnawee Kanitpong

Sponsor: Thai Roads Foundation
Total Contracted Amount (THB): 1,826,600

Accident in Depth-Study Training and Workshop 2011

Duration: 22 Jun 11 - 31 Dec 11
Project Investigator(s):
Sponsor: Siam Cement Group (SCG)
Total Contracted Amount (THB): 64,200

4.11.4 On-going Grants and Sponsored Research

Road Safety Knowledge Development and Dissemination

Duration: 01 Jun 08 - 30 Jun 12
Project Investigator(s): Kunnawee Kanitpong
Sponsor: Department of Highways, Thailand
Total Contracted Amount (THB): 7,756,000

Improving Road Traffic safety in Thailand: A common challenge for European and Thai Universities

Duration: 24 Dec 08 - 30 Apr 12
Project Investigator(s): Kunnawee Kanitpong
Sponsor: Commission of the European Communities
Total Contracted Amount (THB): 8,317,938

Road Safety Watch-Central Region 2011

Duration: 1 Jun 11 – 30 Jun 12
Project Investigator(s): Dr. Kunnawee Kanitpong
Sponsor: ThaiRoads Foundation
Total Contracted Amount (THB): 725,320

Road Safety for Rural Community in Chacheongsao Province

Duration: 20 Mar 11 – 31 Dec 12
Project Investigator(s): Dr. Kunnawee Kanitpong
Sponsor: Toyota Motor Thailand Co., Ltd.
Total Contracted Amount (THB): 706,200

Improvement of Roadside Safety Design Standard

Duration: 20 Mar 11 – 31 Dec 12
Project Investigator(s): Dr. Kunnawee Kanitpong
Sponsor: Department of Highways, Thailand
Total Contracted Amount (THB): 13,040,500

ROSCOE

Duration: 1 Jun 11 – 31 Oct 13
Project Investigator(s): Dr. Kunnawee Kanitpong
Sponsor: Bauhaus-University Weimar (BUW)
Total Contracted Amount (THB): 549,780

4.11.5 Publications

International Journal Articles with Impact factor

Jiwattanakulpaisarn, P., Kanitpong, K., Ponboon, S., Boontob, N., Aniwattakulchai, P., and Samranjit, S., "Does Law Enforcement Awareness Affect Motorcycle Helmet Use? Evidence from Urban Cities in Thailand," the Global Health Promotion, 2011. (in press)

Kanitpong, K., Charoentham, N., and Likitlersuang, S., "Investigation on Effects of Gradation and Aggregate Type to Moisture Damage of WMA Modified with Sasobit," the

International Journal of Pavement Engineering, 2011. (in press)

Chaturabong, P., **Kanitpong, K.,** and Jiwattanakulpaisarn, P., "Analysis of Motorcycle Accident Costs in Thailand by Willingness-To-Pay Method," Transportation Research Record, Journal of the Transportation Research Board 2239, pp.56-63, 2011.

Kangkajitre, C. and **Kanitpong, K.,** "Effect of Aggregate Characteristics on Texture and Skid Resistance of Asphalt Pavement Surface," the Journal of Eastern Asia Society for Transportation Studies, Vol.8, 2011, pp. xxx-xxx. (in press)

Limanond T. and Tuntiworawit N. Estimating Arterial Link Speed using Conventional Road Detectors *Transport Planning and Technology* 2011; 34(3): 231-243.

Limanond T., Jomnonkwao S., Watthanaklang D., Ratanavaraha V., Siridhara S. How vehicle ownership affect time utilization on study, leisure, social activities and academic performance of university students? A case study of engineering freshmen in a rural university in Thailand. *Transport Policy* (In press). Available online 23 February 2011.

Limanond T., Jomnonkwao S., Srikaew A. Projection of future transport energy demand of Thailand. *Energy Policy* 2011; 39(5): 2754-2763.

Limanond T., Butsingkorn C., Chermkhunthod C. Travel behavior of university students who live on campus: A case study of a rural university in Asia. *Transport Policy* 2011; 18 (1) : 163-171.

Conference publications

Kaewdee, S., **Kanitpong, K.,** and Sawangsuriya, A., "Determination of Truck Factor from WIM Data in Thailand," the 9th Eastern Asia Society for Transportation Studies (EASTS), Jeju, Korea, 2011.

Kanitpong, K., Jiwattanakulpaisarn, P., and Yaktawong, W., "Speed Management Strategies and Drivers' Attitude in Thailand," the 90th Annual Meeting of Transportation Research Board, 2011

Sontikul, S., **Kanitpong, K.,** and Jiwattanakulpaisarn, P., "Driver Typology and Speeding Behavior in Speed Enforcement Zone," the 90th Annual Meeting of Transportation Research Board, 2011.

4.11.6 Masters Students' Theses and Research Studies

Effect of Milling Speed on the Performance of Recycled Pavement with or Without the Use of Oversized Aggregates

By Nabin Rajbhandari
Supervisor Dr. Thirayoot Limanond

Effect of Milling Speed on the Performance of Recycled Pavement with or Without the Use of Oversized Aggregates

By Nabin Rajbhandari
Supervisor Dr. Kunnawee Kanitpong

A Study of Bus Services in Khulna Metropolitan City, Bangladesh

By Saleh Hasan Pramanik
Supervisor Dr. Kunnawee Kanitpong

An Empirical Analysis of Success and Failure Factors for Public-Private Partnerships in Toll Road Investments

By Sathita Taothong
Supervisor Dr. Kunnawee Kanitpong

Factors Affecting Motorcycle Accident Severity in Thailand

By Sitthichai Sitthiprapha
Supervisor Dr. Kunnawee Kanitpong

Predicting Young Drivers' Intention to Drive Exceeding the Speed Limit: An Application of Extended Theory of Planned Behavior and Driver Typology

By Montira Ketphat
Supervisor Dr. Kunnawee Kanitpong

A Genetic Algorithm for the Heterogeneous Fleet Vehicle Routing Problem with Delivery System

By Manasanan Titapunyapat
Supervisor Dr. Kunnawee Kanitpong

Impact of Modern Roundabouts on Vehicular Emissions: Comparison with Signalized and Un-Signalized Intersections

By Mohibullah Rahmat
Supervisor Dr. Kunnawee Kanitpong

Optimal Maintenance Work Zone Lengths for Multilane Highways

By Rung Buayairaksa
Supervisor Dr. Kunnawee Kanitpong

Evaluation of Second Pavement Recycling with Addition of Cement and Asphalt Emulsion Using the Cold Mix Method

By Niti leadjui
Supervisor Dr. Kunnawee Kanitpong

Hazardous Location Identification and Accident Prediction Model for Banda Aceh-Biruen, Indonesia

By Romi Satria
Supervisor Dr. Kunnawee Kanitpong

Traffic Breakdown Mechanism of Hidden Bottlenecks on an Arterial Road: Case Studies of U-Turn and On-Street Parking in Aceh Province of Indonesia

By Sugiarto
Supervisor Dr. Thirayoot Limanond

Transportation System Influence on Property Value: Case Study in Da'an District and Neihu District in Taipei

By Chi Tao Chang
Supervisor: Dr. Thirayoot Limanond.



Chapter 4.12: WATER ENGINEERING AND MANAGEMENT FILED OF STUDY

4.12.1 Introduction

Today's major challenges for water engineers and managers include securing water for people and for food production, protecting vital ecosystems, and dealing with climate variability and change and uncertainty of water in space and time. The Water Engineering and Management (WEM) field of study imparts education and training towards an understanding of the complexity of water cycle, utilization, and management. It offers a balanced curriculum covering both engineering and management aspects of water resources. Students acquire knowledge and hands-on practice in tools and techniques to come up with viable and sustainable water management for water, food, energy, and environmental security. Students conduct research on country-specific water related problems, and have opportunities to join research and internship programs with industries and partners.

The WEM field of study covers five focal areas: Agricultural Water, Coastal Water, Urban Water, Water Resources, and Extreme Events and Risk Management. The curriculum is designed in such a way that students

can specialize according to their interests. Courses on Watershed Hydrology, Hydrodynamics, Water Resources Systems, and Concepts in Water Modeling provide the solid foundation to the advanced courses. The curriculum emphasizes tools and techniques in water resources planning and management.

Agricultural Water courses impart knowledge and skills necessary for the development and management of water resources for agriculture. They address various multi-disciplinary issues in the planning, design, implementation, operation and maintenance of irrigation and drainage projects and land and water conservation programs. Current researches in the area include irrigation and drainage system management, cropping systems, erosion and water quality problems, soil conservation and land-use, and watershed management. The management and design of sound engineering works for the control and effective use of coastal zones require in-depth knowledge of hydrodynamics and the understanding of coastal zone phenomena. Coursework and research in Coastal Water cover studies of wave characteristics and their action on beaches, coastal sedimentation, estuarine hydraulics

and the applied aspects of coastal zone engineering and management. Urban Water courses relate to water supply and sanitation, storm water, and domestic wastewater and urban drainage for sustainable management of urban areas. The research in relation to urban water focuses on application of state-of-the-art theory in water demand forecasting and management, design and management of water distribution systems in urban and rural areas, real-time hydrological information systems for urban flooding and drainage. Given the ever-growing importance of water quality, an integrated water quantity-quality approach is essential. Courses in Water Resources focus on techniques to assess the occurrence and availability of surface and groundwater. Students acquire a sound understanding of basic principles in river engineering and modeling, water resources planning, conjunctive use of surface and groundwater; integrated water resources management and social and environmental impact assessment of water resources projects.

Climate change impact and adaptation in water sector is an active area of research and

education at WEM. In-depth knowledge and hands-on practice on mathematical modeling of water resources systems is provided. Flooding is a natural phenomenon and various human activities as well as climatic changes have aggravated the problem causing economic losses. Students are exposed to an understanding of the behavior of rivers, and to design appropriate structural and non-structural alternatives for the effective management of rivers and waterways. Research in the area of Extreme Events and Risk Management includes drought analysis and management, river flow analysis, and flood control and mitigation, flood modeling and forecasting, flood plain development and management. Research in the area of climate change and water resources include downscaling of climatic variables at local scale and impact and adaptation studies of future climate on water resources and on water use sectors.

In addition, WEM offers the following Double Degree Masters programs with renewed institutions under which students are awarded two Master degrees: one from AIT and one from AIT's partner institution.

- Urban Water Engineering and Management (UWEM) in collaboration with UNESCO-IHE, The Netherlands and

Environmental Engineering and Management field of study at AIT

- Agricultural Water Management for Enhanced Land and Water Productivity (DD-AWELWP) in collaboration with UNESCO-IHE, The Netherlands
- Hydroinformatics and Water Management (HWM) in collaboration with The University of Nice, Sophia Antipolise, France

WEM also offers e-learning programs on:

- Integrated Water Resources Management (IWRM) in collaboration with UNU-INWEH, Canada
- Service Oriented Management of Irrigation Systems (SOMIS) in collaboration with UNESCO-IHE, The Netherlands

WEM also encourages students to undertake internship program and receive students from partner institutions under exchange and dual degree program.

4.12.2 Faculty and Research Staff

Emeritus Professor

ASHIM DAS GUPTA, BEng, Gauhati Univ, India; MEng, DEng, AIT, Thailand.

Visiting Professor (*Integrated water resources management; Groundwater development and management; Modeling and monitoring*)

Full-time Faculty

MUKAND S BABEL, BEng, Rajasthan Agr Univ, India; MEng, DEng, AIT, Thailand.

Associate Professor [Hydrologic and water resources modeling as applied to integrated water resources management; Watershed modeling and management; Waterresources allocation and management; Water resources and socio- economic development; Water supply system and management; Climate change impact and adaptation; Groundwater resources management; and Flood and drought analysis, forecasting and management]

ROBERTO CLEMENTE, BSAE, Univ of the Philippines at Los Baños; MEng, AIT, Thailand; PhD, McGill Univ, Canada.

Associate Professor [Focal areas related to irrigation/ drainage, and land and water resource assessment and management; Studies on the impacts of fertigation on water quality, modeling surface/subsurface transport of water and solutes, performance evaluation of irrigation

and drainage systems, and assessment of soil erosion hazard and soil quality dynamics in agricultural watersheds; Joint research on water harvesting and management and soil hydraulic characterization in sloping agricultural lands; Future research focuses on evaluation and optimization of soil, water, chemical and crop management schemes to enhance agricultural productivity without jeopardizing environmental quality]

SANGAM SHRESTHA MSc., Institute of Agriculture and Animal Science, Tribhuvan University, Nepal; MSc., Asian Institute of Technology, Thailand; PhD., University of Yamanashi, Japan.

Assistant Professor [*Climate change and adaptation, Integrated water resources management, Hydrology and water quality modeling, Groundwater development and management, Sustainable water management policy*]

Visiting Faculty

ASHIM DAS GUPTA, BEng, Gauhati Univ, India; MEng, DEng, AIT, Thailand.

Visiting Professor [*Integrated Water Resources Management; Groundwater Development and management; Modeling and monitoring*]

AKIYUKI KAWASAKI, BEng, MEng, DEng,, Yokohama National University, Japan

Visiting Associate Professor [*Geographic Information System / City and regional planning / Transboundary river / Benefit sharing / Land-use modeling / Disaster management (Landslide and flood)*] TAWATCHAI TINGSANCHALI, BEng, Chulalongkorn Univ, Thailand; MEng, DEng, AIT, Thailand.

Visiting Professor [*Flood Control Engineering and Management; Flood Forecasting, Warning and Flood Disaster Management; River Engineering and Hydropower; Water Resources Project System Optimization*]

SYLVAIN PERRET, MS and PhD, University of Montpellier II, France; DSc, Ecole Polytechnique de Lorraine, Nancy, France.

Visiting Associate Professor [*Water economics and governance, with special interest onto valuation approaches of rural and environmental water uses, irrigation systems' performances and evaluation, environmental assessment of production systems, governance in irrigation systems, integrated water resource management and governance at the river basin level, social participation in the water sector*]

DAMIEN JOURDAIN, BEng, MSc, Ecole Nationale Supérieure Agronomique Montpellier, France; PhD, University of Montpellier I, France

Visiting Assistant Professor [*Agricultural & Natural Resources Economics / Farm Modeling / Water and Watershed Management Payment for Environmental Services*]

SHASHIDHAR THHATIKKONDA, BEng, Osmania Univ., M.E. Anna Univ., PhD. Indian Institute of Tech. Madras, India.

Visiting Assistant Professor [*Civil Engineering, Hydrology and Water Resources Engineering, Experimental and Modeling Studies on Transport and Biotransformation of Chromium in Contaminated Aquifer*]

MUTUKURU GANGIREDDY MUNIREDDY, B.Eng. Osmania Univ., M. Tech. Sri Venkateswara Univ., PhD. IIT Madras Univ., India.

Visiting Assistant Professor [*Civil Engineering, Hydraulics and Water Resources Engineering, Coastal and Ocean Engineering*]

Affiliated Faculty

SUTAT WEESAKUL, D.Eng, M.Eng, Asian Institute of Technology; BEng, Chulalongkorn University, Thailand

[Numerical computation in sea and coastal area including flood propagation using developed

computer programs; Application in solving urban drainage problem using both engineering and management approaches; the on-line urban flood warning system at Sukhumvit , Bangkok , Thailand providing useful information in daily life during rainy season are disseminated in <http://www.wap.ait.ac.th>;

Improvement of hydraulic design using physical hydraulic model test in hydropower; hydropower development projects in Lao and Myanmar and improvement in design of intake, diversion tunnel, riparian outlet, energydissipater, spillway and head pond]

4.12.3 Grants and Sponsored Research Completed in 2011

Asian Infrastructure Research Center (AIRC) Phase I

Duration: 1-Jan-07 to 31-Dec-11
Project Investigator(s):Mukand S. Babel, Noppadol Phienwej, Kyung-Ho Park, BHW Hadikusumo, Kunnawee Kanitpong
Sponsor: Konkuk University, South Korea
Total Contracted Amount (THB): 4,472,153

EWRI -AIT An International Perspective on environmental and Water Resources Conference 2009 (Participants)

Duration: 1-Dec-08 to 31-Dec-11
Project Investigator(s): Mukand S. Babel
Sponsor: Participants

Total Contracted Amount (THB):1,943,350

4th Batch of E- Learning Program on Integrated Water resource Management

Duration: 1-Sep-09 to 31-Dec-11
Project Investigator(s): Mukand S. Babel
Sponsor: UNU-INWEH and participants
Total Contracted Amount (THB):878,000

PhD Short Course cum Workshop on “Advances in Agricultural Water Productivity assessment and improvement in irrigation schemes”

Duration: 1-Sep-09 to 31-Dec-11
Project Investigator(s): Mukand S. Babel
Sponsor: FIVA,DWF,University of Copenhagen
Total Contracted Amount (THB): 1,440,000

Regional Refresher Seminar on Disaster Management of Urban Water systems under Climate Change

Duration: 1-Oct-09 to 31-Dec-11
Project Investigator(s): Mukand S. Babel
Sponsor: UNESCO-IHE
Total Contracted Amount (THB):1,372,800

Assistance in developing a Trainers Manual on Integrated Watershed Management on the Basis of the MRC-GTZ Watershed Management Projects Experiences and materials

Duration: 1-Jul-10 to 31-Dec-11
Project Investigator(s): Mukand S. Babel
Sponsor:RECOFTC Thailand
Total Contracted Amount (THB):418,500

Training Course on Irrigation Systems and Hydraulic Structures for Participants from Afghanistan

Duration: 1-Nov-10 to 31-Oct-11 Project

Investigator(s): Mukand S. Babel
Sponsor: DAI,ACDI/VOCA, USA
Total Contracted Amount (THB):2,039,820

4.12.4 On-going Grants and Sponsored Research

Support to Capacity Building at the Water Resources University, Hanoi, Vietnam

Duration:1-Sep-01 to 31-May-13
Project Investigator(s):Mukand S. Babel, Ashim Das Gupta
Sponsor: Danish International Development Assistance (Danida)
Total Contracted Amount (THB): 6,257,249

Optimization of water allocation between off stream and in stream competing demands

Duration: 1-Sep-09 to 30-Jun-12
Project Investigator(s): Mukand S. Babel
Sponsor: UNESCO-IHE Delft Netherlands
Total Contracted Amount (THB):1,430,680

Climate change Impacts on seasonally and Intermittently Open Tidal inlets

Duration: 1-Jan-10 to 31-Dec-13
Project Investigator(s): Sutat Weesakul
Sponsor: UNESCO-IHE
Total Contracted Amount (THB):953,540

Post Doctoral Research Programme on Adaptation to Climate change (PProACC) in River Basin development

Duration: 1-Apr-10 to 30-Jun-12
Project Investigator(s): Mukand S. Babel
Sponsor: UNESCO-IHE Delft Netherlands
Total Contracted Amount (THB): 1,504,800

Post Doctoral Research Programme on Adaptation to Climate change (PRoACC) in Water Resources Management and Governance

Duration:1-Apr-10 to 30-Jun-12

Project Investigator(s): Mukand S. Babel

Sponsor:UNESCO-IHE Delft Netherlands

Total Contracted Amount

(THB):1,504,800

Establishment of Overseas Collaboration center at AIT

Duration:1-Jun-10 to 31-Dec-12

Project Investigator(s): Sangam Shrestha

Sponsor:ICRE University of Yamanashi Japan

Total Contracted Amount (THB): 701,592

Adaptation to Global Change in Agricultural practices

Duration: 1-Aug-10 to 31-Dec-14

Project Investigator(s): Mukand S. Babel

Sponsor:UNESCO IHE Delft Netherlands

Total Contracted Amount

(THB):1,455,840

Development of alternative forecasted short term rainfall and capability improvement of reservoir operation optimization

Duration: 1-Jan-11 to 30-Jun-13

Project Investigator(s): Sutat Weesakul

Sponsor:Electricity Generating Authority of Thailand (EGAT)

Total Contracted Amount (THB): 3,663,000

Online Courses: Urban flood modeling and disaster risk management and Urban Water systems management

Duration:31-Dec-10 to 31-Mar-12

Project Investigator(s): Sutat

Weesakul,Mukand S. Babel

Sponsor: UNESCO-IHE

Total Contracted Amount

(THB):1,464,000

Climate Change and Adaptation to water Scarcity: Strategies for integrated water and land use management to enhance the resilience of rural communities in the Gangetic Basin

Duration: 2-Feb-11 to 31-Jan-12

Project Investigator(s): Sangam Shrestha

Sponsor:Institute of Global

Environmental Strategies (IGES).

Total Contracted Amount (THB):500,000

Training Course on GIS and Remote sensing in Irrigation planning for Participants from Afghanistan

Duration: 1-Feb-11 to 31-Jan-12

Project Investigator(s): Mukand S. Babel

Sponsor:The Ministry of Energy and Agriculture (MEW) Afghanistan

Total Contracted Amount

(THB):1,660,200

Training course on Integrated Watershed Management and reforestation

Duration:1-May-11 to 30-Apr-12

Project Investigator(s): Mukand S.

BabelSponsor: UNESCAP Thailand

Total Contracted Amount

(THB):2,298,000

Hydraulic Model study of side channel spillway of Nam Ken for Hongsa Mine Mouth Power Project

Duration: 1-Apr-11 to 31-May-12

Project Investigator(s): Sutat

Weesakul,Arturo G Roa

Sponsor: Thaiwat engineering Co. Ltd

Total Contracted Amount

(THB):4,250,000

Providing Two Week Training on Modern irrigation practices

Duration: 1-Oct-11 to 31-Aug-12

Project Investigator(s): Mukand S. Babel

Sponsor:Ministry of Energy and Water, Afghanistan

Total Contracted Amount (THB):

840,000

An Enhancing the use of Science in International Water (IW) project to improve results

Duration: 1-Sep-11 to 31-Aug-12

Project Investigator(s): Mukand S. Babel

Sponsor:UNEP Nairobi

Total Contracted Amount (THB):

870,000

The Regional Study on Water interventions for improving smallholder farming and rural livelihoods in Asia and Pacific

Duration: 1-Sep-11 to 31-Aug-12

Project Investigator(s): Mukand S. Babel

Sponsor:FAO Thailand

Total Contracted Amount

(THB):2,323,596

4.12.5 Publications

International Journal Articles with Impact factor

Islam, Md. S. and M. S. Babel (2011). Economic Analysis of Leakage in the Water Distribution System of Bangkok, Accepted in *Journal of Water Resources Planning and Management*, Publisher: ASCE, Impact factor: 1.252 (2009). Citation:

Piman, T. and **M. S. Babel** (2011). Prediction of Rainfall-Runoff in an Ungauged Basin Using Weather Radar and Hydrologic Modeling, Accepted in *Journal of Hydrologic Engineering*, Publisher: ASCE, Impact factor: 1.098 (2009). Citation: -

Babel, M. S. and S. M. Wahid (2011). Hydrology, Management and Rising Water Vulnerability in The Ganges-Brahmaputra-Meghna River Basin, *Water International*, 36 (3), 340-356. Publisher: Routledge (Taylor and Francis Group), Impact factor: 0.483 (2009). Citation: -

Babel, M. S., Pandey, V. P., Rivas, A. A. and Wahid, S. M. (2011). Vulnerability Assessment of Freshwater Resources: Methodological Framework Development and Application to Bagmati River Basin, Nepal, *Environmental Management*, 48, 1044-1059. Publisher: Springer, Impact factor: 1.408 (2009). Citation: -

Divakar, L., **Babel, M. S.**, Perret, S. R. and A. Das Gupta (2011). Optimal Allocation of Bulk Water Supplies to Competing Use Sectors Based on Economic Criterion - An Application to the Chao Phraya River Basin, Thailand. *Journal of Hydrology*, 401(1-2), 22-35. Publisher: Elsevier, Impact factor: 2.433 (2009). Citation: - Kamolsin, P., Soni, P., Salokhe, V. M., **Babel, M. S.** and H. T. Luong (2011). Physico-mechanical harvesting properties of hydrilla (*Hydrilla verticillata*) and pondweed (*Potamogeton malaianus*).

International Agricultural Engineering Journal, 19(4), 1-7. Publisher: Asian Association for Agricultural Engineering, Impact factor: -. Citation: - (SNIP=0.416)

Pal, S. K., Adeloye, A. J., **Babel, M. S.** and A. Das Gupta (2011). Evaluation of the Effectiveness of Water Management Policies in Bangladesh, *International Journal of Water Resources Development*, 27(2), 401-417. Publisher: Taylor & Francis, Impact factor: 0.881 (2009). Citation: -

Muangthong, S., Clemente, R. S., **Babel, M. S.**, Gallardo, W. and S. Weesakul (2011). Assessment of Wetland Ecosystem Health in Lower Songkhram, Thailand, *International Journal of Sustainable Development & World Ecology*. DOI:10.1080/13504509.2011.620643 Publisher: Taylor & Francis, Impact factor: 0.518 (2010). Citation: **Babel, M. S.**, Shrestha, B. and S. R. Perret (2011). Hydrological Impact of Biofuel Production: A Case Study of the Khlong Phlo Watershed in Thailand, *Agricultural Water Management*, 101, 8-26. Publisher: Elsevier, Impact factor: 2.016 (2009). Citation: -

Desalegn, Ch. E., and **M. S. Babel** (2011). Application of ANN-based Streamflow Forecasting Model for Agricultural Water Management in the Awash River Basin, Ethiopia, *Water Resources Management*, Vol. 25, 1759-1773. Publisher: Springer, Impact factor: 2.013 (2009). Citation: -

Babel, M. S. and Shinde, V. R. (2011). Identifying Prominent Explanatory Variables for Water Demand Prediction Using Artificial Neural Networks: A Case Study of Bangkok, *Water Resources Management*. Vol. 25, 1653-1676. Publisher: Springer, Impact factor: 2.013 (2009). Citation: -

Khattak, M. S., **Babel, M. S.** and M. Sharif (2011). Hydro-meteorological Trends in Upper Indus River Basin in Pakistan, *Climate Research*, Vol. 46, 103-119. Publisher: Inter-Research Science Center, Impact factor: 2.25 (2009), Citation: -

Mullick, M. R. A., **Babel, M. S.**, and Perret S. R. (2011). Discharge-based Economic Valuation of Irrigation Water: Evidence from the Teesta River, Bangladesh. *Irrigation and Drainage*, 60(4), 481-492. Publisher: Wiley InterScience, Impact factor: 1.108 (2009), Citation: - 1 (Google Scholar)

Babel, M. S., Agarwal, A., Swain, D. K. and S. Herath (2011). Evaluation of Climate Change Impacts and Adaptation Measures for Rice Cultivation in Northeast Thailand, *Climate Research*, Vol. 46, 137-146. Publisher: Inter-Research Science Center, Impact factor: 2.25 (2009), Citation: -

Pandey, V. P., **Babel, M. S.**, Shrestha, S., and F. Kazama (2011). A Framework to Assess Adaptive Capacity of Water Resources System in Nepalese River Basins, *Ecological*

Indicators, Vol. 11(2), 480-488. Publisher: Elsevier, Impact factor: 3.102 (2009). Citation: -

Muanthong, S., **R.S. Clemente**, M.S. Babel, W. Gallardo, and S. Weesakul (2011). Assessment of Wetland Ecosystem Health in Lower Songkhram, Thailand. *International Journal of Sustainable Development and World Ecology*, iFirst 2011, 1-9. Publisher: Taylor and Francis Impact factor: 0.52 (2010)

Tiewtoy, S., **R. S. Clemente**, S. Perret, M.S. Babel, and S. Weesakul (2011). Irrigation Sustainability Assessment of Selected Projects in Tha Chin Basin, Thailand. *Irrigation and Drainage*, 60, 296-307. Publisher: John Wiley and Sons, Ltd. Impact factor: 0.48 (2009)

Kawasaki, A., Berman, L.B., Guan, W. (2011) Emerging web and geospatial technology revolutionizes disaster response with public involvement, Accepted in *Disasters*, 37(2). Publisher: Wiley-Blackwell, Impact factor: 1.174. Citation: -

Kawasaki, A., Yoshida, S., Sadohara, S. (2011) Methods and techniques for promoting a multidisciplinary environmental research project using GIS. *Asian Journal of Environment and Disaster Management (AJEDM)*, 3(3), 301-315. Publisher: Research Publishing, Impact factor: -. Citation: -

Kawasaki, A. (2011) Geodatabase: Advanced data model and spatial

analysis (Zukai ArcGIS Part3). Book: 284 pages. Publisher: Kokon Shoin Inc.

Jourdain, D., Dang Dinh Quang, Tran Pham Van Cuong, and Jamin, J.-Y. (2011). "Différenciation des exploitations agricoles dans les petits bassins versants de montagne au Nord du Vietnam: le rôle clé de l'accès à l'eau ?" *Cahiers Agricultures*, 20(1-2), 48-59.

Jourdain, D., Rakotofiringa, A., Quang, D. D., Valony, M.-J., Jamin, J.-Y., and Vidal, R. (2011). "Gestion de l'irrigation dans les montagnes du Nord du Vietnam: vers une autonomie accrue des irrigants" *Cahiers Agricultures*, 20(1-2), 78-84.

Mullick, M.R.A., Babel, M.S., **Perret, S.R.** (2011) Discharge-based economic valuation of irrigation water: evidence from Teesta river, Bangladesh. *Irrigation and Drainage*, 60(4): 481-492

Babel, M.S., Shrestha, B., **Perret, S.R.** (2011) Hydrological impact of biofuel production: a case study of the Khlong Phlo watershed in Thailand. *Agricultural Water Management*, 101 (2011): 8-26

Tiewtoy, S., Clemente, R., **Perret, S.R.**, Babel, M.S. Weesakul, S. (2011) Irrigation sustainability assessment of selected projects in Tha Chin Basin, Thailand. *Irrigation and Drainage*, 60(3): 296-307

Manandhar, S., Schmidt-Vogt, D., **Perret, S.R.**, Kazama, F. (2011) Adapting cropping systems to climate change in Nepal: a cross-regional study of farmers perception and practices. *Regional Environmental Change*, 11(2011):335-348

Divakar, L., Babel, M.S., **Perret, S.R.**, Das Gupta, A. (2011) Optimal allocation of bulk water supplies to competing use sectors based on economic criterion – An application to the Chao Phraya River Basin, Thailand. *Journal of Hydrology*, 401(1-2): 22-35

Speelman, S., Frija, A., **Perret, S.R.**, Farolfi, S., D'haese, M. and D'Haese, L. (2011) Variability in smallholders' irrigation water value: study in North-West Province, South Africa. *Irrigation and Drainage*, 60(1):11-19 (2011)

Pandey, V. P., Babel, M. S., **Shrestha, S.**, and F. Kazama (2011). A Framework to Assess Adaptive Capacity of Water Resources System in Nepalese River Basins,

Ecological Indicators, Vol. 11(2), 480-488. Publisher: Elsevier, Impact factor: 3.102 (2009).

Pandey, V.P., **Shrestha, S.**, Chapagain, S.K. and Kazama, F. (2011). A framework for measuring groundwater sustainability, *Environmental Science and Policy*, 14 (4), pp. 396-407. Publisher: Elsevier, Impact factor: 2.322 (2009).

Refereed Books / Chapters

Babel, M. S., Islam M. S. and A. A. Rivas (2010). Application of Hydraulic Modelling for Leakage Management in the Bangkok Water Supply System - A Case Study, In Price, R.K. and Z. Vojinovic (2010). Urban Hydroinformatics: Data, Models and Decision Support for Integrated Urban Water Management, IWA Publishing, December, 2010.

Conference Proceedings

Babel, M. S., Fakhruddin, S.H.M., and A. Kawasaki (2011). A Decision Support Framework for Flood Risk Assessment: an Application to the Brahmaputra River in Bangladesh. In *Proceedings of the 5th International Conference on Flood Management (ICFM5)*, 27-29 September, 2011, Japan.

Niroshinie, M.A.C., **Babel, M.S.,** and S. Herath (2011). A methodology to analyze extreme flooding under future climate change scenarios for Colombo, Sri Lanka. In *Proceedings of the IESL-SSMS Joint International Symposium 2011*, Colombo, Sri Lanka. Sep. 14-15, 2011, pp. 650-659. <http://management.kochi-tech.ac.jp/?content=journalpaper>)

Kawasaki, A., Takamatsu, M., Rogers, P. (2011) Development and application of a land-use prediction model for future water resources management in the Greater Mekong

sduregion. *International Conference on GMS 2020.*

Kawasaki, A., Henry, M., Meguro, K. (2011) Disaster information gathering behavior after the Tohoku Earthquake Part 1: Results of Japanese respondents, *Proceedings of the Tenth International Symposium on New Technologies for Urban Safety of Mega Cities in Asia.*

Henry, M., **Kawasaki, A.,** Meguro, K. (2011) Disaster information gathering behavior after the Tohoku Earthquake Part 2: Results of foreign respondents, *Proceedings of the Tenth International Symposium on New Technologies for Urban Safety of Mega Cities in Asia.*

Takamatsu, M., **Kawasaki, A.,** Rogers, P., Rangarajan, S. (2011) A modeling framework for water resources management in the 3S Basin. *Proceedings of the 14th World Lake Conference.*

Poster

Shrestha, S., Shrestha S., and Kazama, F. (2011). Chemical composition of bulk precipitation in Kathmandu Valley. In: *The 8th International Conference on Acid Deposition: ACID RAIN 2011*, 15-18 June, 2011, Beijing, China.

Sthapit, M., **Shrestha, S.** P. Amatya, P., and Shrestha, S. (2011). Rainwater harvesting potential in the housing colonies of urban valley of Nepal. In the 4th IWA-ASPIRE

Conference and Exhibition, 2-6 October, 2011, Tokyo, Japan.

Shrestha, S., **Shrestha, S.,** Nakamura T. and Kazama, F. (2011). Stable isotopic composition of rainwater and soil water of Kathmandu Valley, Nepal. Presented (Poster No. AHW023-P05) in Japan Geoscience Union Meeting 2011, May 20-27 2011, Makuhari, Chiba, Japan.

4.12.6 Doctoral Students' Dissertation

Impacts of Climate Change on the Water Resources and Irrigation Water Demand in the Upper Indus River Basin, Pakistan

By Muhammad Shahzad Khan Khattak
Supervisor Dr. Mukand S. Babel

Optimal Water Allocation Based on Economic and Environmental Criteria: Cases from Bangladesh and Indonesia

By Md. Reaz Akter Mullick
Supervisor Dr. Sylvain Perret, Dr. Mukand S. Babel

4.12.7 Masters Students' Theses and Research Studies

Analysis of Bay Shapes Under Static Equilibrium in Vietnam

By Ngo Minh Trang
Supervisor Dr. Sutat Weesakul, Dr. Sangam Shrestha

Application of Benchmarking to Assess and Compare Performance Efficiencies of Irrigation Systems: A Case Study in Hari Rod River Basin, Afghanistan

By Ahmad Wais Basiri
Supervisor Dr. Roberto S. Clemente

Participatory Approach to Rural Water Supply Management : A Case Study in Ngapudaw Township, Myanmar

By Thang Za Khai
Supervisor Dr. Roberto S. Clemente

Effect of Future Climate on the Offshore Wave Characteristics at Songkhla in Gulf of Thailand

By Weerasinghe Liyanage Kanchana Kaushalya
Supervisor Dr. Sangam Shrestha, Dr. Sutat Weesakul

Impact of Future Climate on Trends of Inflow to Ubolratana Dam, Thailand

By Chatchai Chingchanagool
Supervisor Dr. Sangam Shrestha, Dr. Sutat Weesakul

Evaluation of Lined and Unlined Irrigation Water Courses in Kandahar Province, Afghanistan

By Nazir Ahmad Qani
Supervisor Dr. Sangam Shrestha, Dr. Roberto S. Clemente

Evaluation of Rice Productivity Under Different Water Stress Conditions in Saraburi, Thailand: A Simulation Study using Aquacrop Model

By Piyanuch Nontikansak
Supervisor Dr. Roberto S. Clemente

Development of Neuro-Fuzzy Computing for Real Time Reservoir Operation

By Chalermchon Lertlum
Supervisor Dr. Sutat Weesakul, Dr. Sangam Shrestha

Flood Vulnerability Assessment and Coping Strategy in Kyaukse Township, Myanmar

By Khin Lwin Lwin Po
Supervisor Dr. Akiyuki Kawasaki

An Investigation of Land Productivity and Technical Efficiency in Irrigated Rice Systems of Ma River Basin, Vietnam: A Combined Modeling and Optimization Approach

By Le Phuong Dong
Supervisor Dr. Sylvain Roger Perret

Evaluation of Tank Irrigation Systems in Northeast Thailand

By Kanokwan Sengprathom
Supervisor Dr. Roberto S. Clemente

Asset Management of Hydropower Infrastructures: A Case Study of Yeywa Hydropower Project in Myanmar

By .Le Win Khine
Supervisor Dr. Roberto S. Clemente

Assessing the Potential Environmental Impacts of Hydropower Projects in Myanmar: Comparison with Lignite Thermal Project and Opportunity for Clean Development Mechanism

By Khin Seint Wint
Supervisor Dr. Sylvain Roger Perret

Development and Application of Tool for Impact Assessment of Valve Failure in Water Networks

By Shiva Prasad Paudel
Supervisor Dr. Mukand S. Babel

Effect of Demand Variation on Reliability of Water Distribution Networks

By Ehambaranathan Jegathesan
Supervisor Dr. Mukand S. Babel

Management of Losses in Water Supply System from Economic and Technical Perspectives: The Case of Davao City, Philippines

By James Torres Gonida
Supervisor Dr. Mukand S. Babel

Clogging Patterns in Vertical Flow Constructed Wetlands Treating Combined Sewer Flows Under Different Feeding Modes

By Eranda Pradeep Rajapakse
Supervisor Dr. Thammarat Koottatep

Integrated Framework for Assessment of Water Security

By Sohail Mehr
Supervisor Dr. Akiyuki Kawasaki

Development of an Agricultural Water Availability Index and its Application under Climate Change in Rechna Doab, Pakistan

By Waqas Ahmad
Supervisor Dr. Mukand S. Babel

Evaluation of Climate Change Impacts and Adaptation Measures for Maize Cultivation in the Wet Agro-Ecological Zone of Uganda

By Turyatunga Emmex
Supervisor Dr. Mukand S. Babel

Effects of Climatic and Socio-Economic Factors on Future Water Demand in Bangkok

By Nisuchcha Maporn
Supervisor Dr. Mukand S. Babel

Climate Change Impact on Snow Cover and Runoff in Tamakoshi Basin, Nepal

By Dibesh Khadka
Supervisor Dr. Nitin K. Tripathi, Dr.
Mukand S. Babel

*Assessment of Groundwater
Quantity and Quality: A Case Study
in Dubhdhubhi Watershed,
Maharashtra, India*

By Parmeshwar Digamber Udmale
Supervisor Dr. Sangam Shrestha

*Assessment of Land Use Change and
its Effects on Hydrology of Indrawati
Basin, Nepal*

By Kunjan Lal Pradhan
Supervisor Dr. Mukand S. Babel

*Water Footprint and Virtual Water
Trade of Major Crops and Livestocks
in Nepal*

By Chawalit Chanamai
Supervisor Dr. Sangam Shrestha

4.12.8 Focus Areas and Plans

Asian Water Research and Education Centre (AWARE Centre) at AIT

Nurturing Sustainable Water Futures of Asia

In order to address the complex water problems in Asia and beyond, AIT decided to establish a water centre named, Asian Water Research and Education (AWARE) Centre to collaborate in undertaking capacity building, research and outreach activities related to water. Forward-looking, regionally-focused and development-oriented AIT AWARE Centre will incubate and

nurture holistic approach in water education and research within the context of sustainable development and poverty alleviation.

The AIT AWARE Centre will thrive to become a regional centre of excellence on capacity building and research and outreach in sustainable water management and allied sciences, providing a platform for science-policy dialogue, and enhancing the quality of planning and implementation of relevant activities. The Centre will:

- Generate knowledge and skills through research and development to address current and future water problems of Asia
- Become institutional home for spreading knowledge of sustainable water management;
- Increase awareness of planners and policy-makers about challenges and opportunities for sustainable water management;
- Develop and demonstrate innovative forward-looking management and technology solutions; and
- Collaborate and share knowledge, information, experience, and expertise with regional and international institutions.

The specialized focal areas of activities of the Center include water and sanitation (urban and rural water supply; wastewater management; sanitation and health), water and food security (agricultural water management; fisheries and aquaculture), water and ecosystem (watershed and river basin management; wetlands and coastal zone management), water and climate (climate change impact and adaptation; water disasters and risk management), water and society (water, gender and social equity; water policy, governance and economics), and water and development (water and sustainable infrastructure development; water and green growth; water and environmental modeling).

The AWARE C will collaborate and partner with stakeholders and beneficiaries including Government agencies, Private sector, Development partners, Water networks and Civil Society and media. The pathway to attain the AWARE Centre's vision and support sustainable water futures of Asia is based on an array of services that includes: Initiation of flexible education; Initiation of innovative professional training and study visits; Facilitating applied collaborative water-related research; Facilitating industry placements, workshops, seminars and other events; Producing policy and corporate briefs and facilitating public lectures and consultation; and

Leading the establishment of and hosting Asian University Consortium on Water.

It is planned to officially launch the AWARE C at the Asian Pacific Water Summit (APWS) which is scheduled to be held in Bangkok in May/June

2012. Several activities are being planned by the Centre.



Chapter 4.13: SET INFORMATION AND COMMUNICATION FIELD OF STUDY

4.13.1 Introduction

Information and Communications Technologies field is a newly established area of study in response to the needs for the offering of a curriculum selectively drawn from the curricula of Telecommunications (TC), Computer Science, and Information Management (CSIM). With strong emphasis on communications aspects - rather than on the aggregation of hardware, software, networks, equipment and related industries - ICT recognizes the important role of information services and applications in the creation of a complete ICT infrastructure.

4.13.2 Research Facilities and Laboratories

There is a rapidly growing and constantly evolving interest in ICT throughout the academia and society. To support this, the evolution and the benefits of ICT in our lives, the ICT field of study at AIT continues to research and develop of ICT. The field of study covers a wide variety of research supported by the body of faculty consisting of a multi-professional team of international experts in telecommunication, computer

science, educational technology and related fields.

The faculty has a strong academic background ranging from wireless and optical networks, through hardware and software, to web education and other e-services.

Research subjects include those on ICT applications (e-services such as e-learning, e-health, e-governance, rural development, knowledge creation and knowledge dissemination); on the information technologies (e.g. operating systems, programming languages, information storage and retrieval); on the communication infrastructure (e.g. networks, transmission technologies, switching and routing). Research specializations are in adaptive technologies; computer-supported collaboration; Home networking; ICT security; online communities; and voice over IP. The ICT area of study shares the research facilities and laboratories of the Telecommunications field of study.

4.13.3 Faculty and Research Staff

The ICT Field of Study draws from the faculty and research staff of the Computer Science, Information Management, Remote Sensing & Geographic Information Systems,

and Telecommunications Fields of Study.

Faculty Members

From ICT Area of Study

MIKKO KOVALAINEN, Ph.D., M.Econ., University of Jyväskylä, Finland

Visiting Senior Researcher

From Telecommunications Field of Study

KAZI MOHIUDDIN AHMED, **Professor**

R M A P RAJATHEVA, **Associate Professor, ICT-Joint Coordinator**
TEERAPAT SANGUANKOTCHAKORN, **Associate Professor**

POOMPAT SAENGUDOMLERT, **Assistant Professor**

TAPIO ERKE, **Visiting Associate Professor**

From Computer Science and Information Management Fields of Study

KANCHANA KANCHANASUT, **Professor**

PETER HADDAWY, **Professor**

PHAN MINH DUNG, **Professor**

VILAS WUWONGSE, **Professor**

SUMANTA GUHA, **Associate Professor**

VATCHARAPORN ESICHAIKUL, **Associate Professor**

MATTHEW N. DAILEY, Assistant Professor

PAUL JANECEK, Assistant Professor, ICT Joint Coordinator From Remote Sensing and Geographic Information Systems Field of Study

KIYOSHI HONDA, Associate Professor

NITIN KUMAR TRIPATHI, Associate Professor

XIAOYONG CHEN, Associate Professor and ICT Joint Coordinator

4.13.4 Doctoral Students' Dissertation

Ecosystem Modeling for Self-Organizing Cooperative Cognitive Wireless Communication Networks
By Muhammad Mohsin Nazir
Supervisor Dr. R.M.A.P. Rajatheva

4.13.5 Masters Students' Theses and Research Studies

Resource Reuse and Scheduling in Femtocell Deployed Two-Tier LTE-Advanced Systems
By Rony Kumer Saha
Supervisor Dr. Poompat Saengudomlert

A Framework to Analyze RDF Links
By Srija Pokharel Supervisor Prof. Vilas Wuwongse

Performance Study of Femto-Cell in WiMAX Environment

By Furqan Ali Shaikh
Supervisor Prof. Kazi Mohiuddin Ahmed

Cognitive Radio Resource Allocation Based on Primary System Behavior

By Mathew Pradeep Goonewardena
Supervisor Dr. R.M.A.P. Rajatheva

Privacy and Security in the Health Care Domain

By Sabita Khadka
Supervisor Prof. Phan Minh Dung

Uplink Power and Rate Optimization in CDMA and OFDMA Femtocell Networks using Game Theory

By Kalogasthanne Gedara Inosha Shyamali Sugathapala
Supervisor Dr. R.M.A.P. Rajatheva

Interference, Performance Analysis and Power Allocation for Cognitive Ad hoc Network with Relay Assisted Primary Link

By Uditha Lakmal Wijewardhana
Supervisor Dr. R.M.A.P. Rajatheva

QoS Provisioning in Home Multimedia Services in 802.11n

By Indira Paudel
Supervisor Dr. Badii Jouaber, Dr. Teerapat Sanguankotchakorn

The Cross Layer Design for QoS Routing in MANET AODV Based on BER

By Ram Sewak Dahal
Supervisor Dr. Teerapat Sanguankotchakorn

Reputation Based Decision Solution for Vertical Handover in Multihoming Platform

By Jeevan Pokhrel

Supervisors Dr. Badii Jouaber, Prof. Kazi Mohiuddin Ahmed

MPEG-4 Video Transmission over IEEE 802.11E EDCA in Multihop OLSR Manet using Cross Layer Approach

By Amit Kumar Tamang
Supervisor Dr. Teerapat Sanguankotchakorn

Collaborative Geo-tagging of Information in a Mobile Ad hoc Network (MANET) Based Platform

By Birodh Rijal
Supervisor Dr. Paul Janecek

Wireless Sensor Networks for Fire Alarm Systems

By Kadam Vrushali Deepak
Supervisor Prof. Phan Minh Dung

Performance Analysis of MIMO Two-Hop Relaying over Generalized Fading Channels

By Nuwan Suresh Ferdinand
Supervisor Dr. R.M.A.P. Rajatheva

Developing a Thai Language Learning Application for Mobile-Touch Devices as a Teaching Aid in Primary Schools

By Benjawan Arukaroon
Supervisor Dr. Sumanta Guha

IT Service Outsourcing Risk Allocation and A Standard Service Contract Model

By Chayaluck Tummasiri
Supervisor Prof. Phan Minh Dung.

A Modified Algorithm for Multiple Constraints Routing using Nonlinear Function and QoS Priority Metrics

By Surabodi Maneepong
Supervisor Dr. Teerapat Sanguankotchakorn

*Equalization in Indoor Visible Light
Communications Using Recurrent
Neural Networks*

By Modick Bahadur Basnet Supervisor
Dr. Poompat Saengudomlert.

*Extending the Content Centric
Networks to Mobile and Delay*

Tolerant Networks

By K.W. Sandun Priyadarshana
Wijayarathne
Supervisor Dr. R.M.A.P. Rajatheva

*A Solution to the Problem of Pointcut
Fragility at Component Level in
Ubiquitous Systems*

By Madduma Patabendige Harith
Samitha Kumara
Supervisor Dr. Sumanta Guha Cloud
Computing for Providing Greener IT By
Pierrick Monard Supervisor Dr. Sumanta
Guha.

Chapter 4.14: SET OFFSHORE TECHNOLOGY AND MANAGEMENT PROGRAM

4.14.1 Introduction

Rationale

Oil and Gas resources in the Southeast Asian region have been explored for several decades, especially following the global slump in oil and gas production during the early 1970's. Since then, the region has become one of the most productive oil and gas areas in the world. However, the global demand for skilled human resources of the upstream oil and gas industry greatly exceeds the supply and, therefore, regional companies are required to seek contract overseas worker to fill job vacancies; a situation that continues to exist after more than three decades of E&P activity in the region. The shortage of skilled manpower has recently become critical due to the tremendously high level of oil and gas exploration and production activity around the world that has occurred to meet the increasing global demand for energy, especially since China's becoming the "world's factory", and the move towards deep water exploration and production.

Mission Statement

AIT's Offshore and Technology & Management Program (OTM) is the first of its kind to provide regional post-graduate study in upstream oil

and gas education, and is designed to combine application-oriented course work, field studies and internships into a curriculum from which graduates are equipped with the skills and knowledge-and-practice-readiness to mitigate the shortages of skilled manpower in the upstream sector of oil and gas industry. As an industrial application-oriented program, OTM's unique characteristics offer a flexible study structure which allows students to build their own area of specialization in addition to the areas formally offered in the program, those areas being: Offshore Structural Design and Construction (OSDC), Oil and Gas Management (OGM), and Geosystem Exploration and Petroleum GeoEngineering (GEPG), and offered in collaboration with the Geotechnical and Geoenvironmental field of

study). With the available teaching expertise; library and laboratory facilities multitude of courses from AIT's different schools skilled and professional faculty members and staff; strong collaborations with overseas partner universities in Europe, Asia, Australia and North America; and strongly supported by oil and gas industries, AIT's OTM

post-graduate program has become one of the most suitable post-graduate study for engineers and young managers to pursue higher professional careers in both the oil and gas industry and government bodies.

4.14.2 Faculty and Research Staff

Full-time Faculty

GREGORY L.F. CHIU, M.S. Civil Engineering, Columbia University, New York, USA; PhD. Civil Engineering, Stanford University, California, USA

Visiting Associate Professor

Adjunct Faculty

JOKO HARSONO WIDJAJA, Master of Engineering, Asian Institute of Technology, Bangkok, Thailand; Doctor of Philosophy, University of Technology, Sydney-NSW, Australia

L.F. BOSWELL, Doctor of Philosophy, University of Leeds; Doctor of Science, Technical University of Isai; Doctor of Science, Technical University of Cluj Napoca

POOVADOL SIRIRANGSI, Master of Business Administration, University of Central Oklahoma the United

State; Doctor of Engineering, Asian Institute of Technology, Bangkok, Thailand

PORNPONG ASAVADORNDEJA, Master of Engineering, Asian Institute of Technology, Bangkok, Thailand; Doctor of Engineering, Asian Institute of Technology, Bangkok, Thailand

PRATEEP POKINWONG, Master of Science, University of Southern California, USA; Doctor of Philosophy in Engineering, University of Southern California

SARUNPHONG ARTICHARTE; Master of Science, Texas A&M University, USA

THITISAK BOONPRAMOTE, Master of Science, Colorado School of Mines, USA; Ph.D., Colorado School of Mines, USA
WINAI OUYORNPRASERT, Master of Engineering, Chulalongkorn University, Bangkok, Thailand; Ph.D., University of Innsbruck, Austria

4.14.3 Ongoing / In Progress Grant and Sponsored Research

Preparation of the Structural Assessment Guideline for Offshore Petroleum Platform and Pipeline

Duration: 29 Dec 07 - 31 Dec 11

Project Investigator(s): Worsak Kanok-Nukulchai, Joko Widjaja

Sponsor: Department of Mineral Fuel, Thailand Total Contracted Amount (THB): 3,774,000

4.14.4 Publications

International Journal Article with Impact factor

4.14.5 Masters Students' Theses and Internships

Comparative Study of Joint Can Fatigue Life

By Kitinun Pongsapasiritut
Supervisor Dr. Joko Harsono Widjaja,
Dr. Gregory L. F. Chiu

Causes and Effects of Change Orders: A Case Study of Detailed Engineering Design Projects of EPC Revamped Offshore Platforms in the Gulf of Thailand

By Somsakul Sukalanun
Supervisors Dr. Chotchai Charoenngam, Dr. Gregory L. F. Chiu

Investigation of Water Coning in Dry Gas Reservoirs

By Surapong Tanwattana
Supervisors Dr. Suwat Athichanagorn, Assoc. Prof. Gregory L. F. Chiu

Innovative Minimal-Cost-Based Offshore Structures - Gulf of Thailand

By Vorawit Suwandamrong
Supervisors Dr. Gregory L. F. Chiu, Dr. Joko Harsono Widjaja

Kinetic Energy Distribution of Slender Dropped Objects for Risk Assessment Purposes

By Kathawut Weerayutwattana
Supervisor Dr. Pornpong Asavadorndeja, Assoc. Prof. Gregory L. F. Chiu

Study of Corporate Risk Tolerance Assessment, Its Applications, and Tool Development: The Case Petroleum E&P Companies in Thailand

By Rawiwan Chayeenet
Supervisors Dr. Thitisak Boonpramote,
Dr. Gregory L. F. Chiu

Application of ANN Analysis in Prediction of Reservoir Porosity for an Oil Field in the Northern Pattani Basin

By Nicha Nakapraves
Supervisor Dr. Pham Huy Giao

A Study Guide to Optimize Thailand Petroleum Fiscal Regimes

By Sarun Sumransub
Supervisors Dr. Thitisak Boonpramote,
Dr. Gregory L. F. Chiu

Artificial Lift System Management

By Auttasit Joyklad
Supervisors Dr. Gregory L. F. Chiu, Dr. Poovadol Sirirangsi

Stability and Dynamics Response of a Hybrid Spar Buoy Platform

By Chana Sinsabvarodom
Supervisors Assoc. Prof. Gregory L. F. Chiu, Dr. Joko Harsono Widjaja

Integrity Challenges of Fault Crossing Offshore Pipeline

By Lawal Umar Kankia
Supervisors Dr. Pornpong Asavadorndeja, Assoc. Prof. Gregory L. F. Chiu

Decision Matrix to Support Selection of Well Logging Method

By Suntorn Srimuean
Supervisors Assoc. Prof. Gregory L. F. Chiu, Mr. Sarunphong Articharte

Well Logging Interpretation for Wichain Buri Oil Field By Sunanta Somsup Supervisor Dr. Gregory L. F. Chiu
Drilling Activities and Lost Circulation Solution in Sirikit Fields (S1)
By Ekkarat Rattanaphra Supervisor Dr. Gregory L. F. Chiu

Manora Development Platform Cost Estimate
By Sarawut Busabong Supervisor Dr. Gregory L. F. Chiu

Application of the Analytic Hierarchy Process to Logistics Activities Outsourcing Decisions
By Wichada Lohachunsiri Supervisor Dr. Gregory L. F. Chiu

Real Options Approach for Oil and Gas Project Development

By Nuttapon Attakornwattana Supervisor Dr. Gregory L. F. Chiu

Corrosion Integrity Management of Gas Pipelines
By Maung Aung Phyoe Supervisor Dr. Gregory L. F. Chiu

Procurement Management and Risk Analysis for Wellhead Platform Construction
By Chontira Silaratana Supervisor Dr. Gregory L. F. Chiu

Process Schematic for Offshore Oil and Gas
By Wutthichai Pipattanasakulkij Supervisor Dr. Gregory L. F. Chiu

Research Study: Strategic Decision for Transition to 4G Networks
By Frederic Leduc Supervisor: Prof. Kazi Mohiuddin Ahmed

Research Study: The Role of Microblogging in Emergency Management: A Case Study of Twitter
By Albane Coeurquetin Supervisor: Dr. Sumanta Guha

Research Study: Traffic Measurement and Analysis of Mobile Ngn Network: A Case Study of ETL, Laos
By Sangvan Chanthachone Supervisor: Dr. Tapio J. Erke

Research Study: Web-Based Support System for Contract Dispute Resolution
By Suwiphar Suwatthanaphiset Supervisor: Prof. Phan Minh Dung.

Chapter 5: SCHOOL OF ENVIRONMENT, RESOURCES AND DEVELOPMENT

5.1.1 Mission, Vision, and Core Values

SERD Mission

The School of Environment, Resources and Development is committed to excellence in graduate education as well as research and outreach activities. Through its academic programs and outreach units, SERD has been working towards capacity building and human resource development in the areas of resource management, development studies, and energy and environmental management.

SERD responds to regional needs by mobilizing and enhancing capacities for socially, economically and environmentally sound development in partnerships with public and private sectors. The School's interdisciplinary approach integrates technological, natural and social sciences.

SERD Vision

SERD will continue its leadership role in offering excellent academic programs relevant to regional needs.

SERD research will be concentrated toward focal areas and are to be conducted by core teams.

SERD outreach will be community service-oriented. SERD Programs will be consolidated and financially viable. The School activities including the students, staff, faculty and curricula, will be subject to quality assessment.

SERD Core Values

- **Interdisciplinarity**
- **Innovativeness**
- **Excellence**
- **Responsiveness**

5.1.2 Field of Study and Multidisciplinary Programs

Fields of Study

- Agricultural Systems and Engineering
- Aquaculture and Aquatic Resources Management
- Energy
- Environmental Engineering and Management
- Food Engineering and Bioprocess Technology.
- Gender and Development Studies
- Natural Resources Management
- Pulp and Paper Technology

- Regional and Rural Development Planning
- Urban Environmental Management

Inter-university Program

Environmental Toxicology, Technology and Management

Interdisciplinary Programs

- Cleaner Production
- Agri Business Management
- Sustainable Development
- Disaster Prevention, Mitigation and Management
- Gender, Transportation and Development

5.1.3 Research Facilities and Laboratories

SERD provides laboratory, computer and information technology (IT) facilities for education and learning for graduate students, and research activities of graduate students, faculty, and sponsored and contracted projects.

SERD has six research laboratories in Agricultural Systems and Engineering, Aquaculture and Aquatic Resources Management, Food Engineering and Bio-process

Technology, Environmental Engineering and Management,

Energy, and Pulp and Paper Technology, and each laboratory is unique with modern equipments, excellent guidance and assistance, and provides safe working facilities and environments to carry out experimental studies and research.

IT facilities are provided for everyone to attend their academic and research related activities. There are three computer centers maintained by the SERD at the SERD Main building (two computer laboratories), Agriculture and Food Engineering building and Energy Building which provides convenient working environment, with all the necessary facilities. These are open twenty four hours a day for use by students, staff and faculty. Full internet access is available to these PCs through a high speed network backbone which connects all academic buildings including the residence halls. A large number of PC software packages for applications such as word-processing, spreadsheets, network

communications, multi media and file transfer utilities are available. High quality laser printers, scanning and CD writing facilities are available for students' uses.

Furthermore, laboratories also have computer facilities, which enhance the productivity of the teaching and research activities of the school.

5.1.4 School Governance

Dean of School

WEERAKORN ONGSAKUL

BEng, Chulalongkorn Univ, Thailand;
MS, PhD, Texas A&M Univ, USA.

Associate Professor (*Artificial Intelligence Applications to Power Systems; Parallel Processing Applications; Power System Operation & Control; Power System Deregulation & Restructuring*)

Associate Deans

MOKBUL MORSHED AHMAD

BSc, MSc, Dhaka Univ, Bangladesh;
MSc, AIT, Thailand; PhD, Univ of Durham, UK.

Associate Professor (*Economic geography; regional and rural development planning; community development; Non-Governmental Organizations (NGOs); civil society; globalization etc*)

ANIL KUMAR ANAL, DVM., University of Agriculture, Pakistan; MSc. and PhD., AIT, Thailand

Assistant Professor (Food Engineering & Bioprocess Technology Field of Study

(Animal Biotechnology, Food and Pharmaceutical Biotechnology, Dairy and Meat Process Technology, Food Colloids and Biopolymer, Functional Foods, Micro-/Nanoencapsulation, Bionanotechnology)

5.1.5 On-going Grants and Sponsored Research

Greater Mekong Sub region Academic and Research Network

Duration: 20 Apr 10 - 19 Apr 11

Project Investigator(s): Weerakorn Ongsakul

Sponsor: Multi donors

Total Contracted Amount (THB): 1,000,000

Chapter 5.2: SERD AGRICULTURE SYSTEMS AND ENGINEERING FIELD OF STUDY

5.2.1 Introduction

This field of study emphasizes on sustainable agricultural and related technologies development through holistic approach for efficient food production from small holder agriculture.

5.2.2 Research Facilities and Laboratories

Agricultural Systems and Engineering (ASE) Laboratory caters to researchers, which address sustainability in agricultural production. The facilities are capable for implementing excellent agronomic and engineering researches on soils, water and plant, such as, plant growth, soil fertility and management, integrated pest management, plant water requirement, etc. Facilities to conduct researches on terramechanics, ergonomics and tillage are also available. The engineering aspects of agricultural production are dealt with through innovations and development of machines and equipment to enhance productivity and reduce human drudgery. These innovations are constructed at the ASE workshop.

Major laboratory equipment include a Spectro UV- VIS double PC double

beam (scanning) flame photo meter; Digestion block;

Trinocular Microscope MBL 2100; Stereo zoom microscope Model MSZ 5400; Porometer type AP4 Light meter WP4 Dewpoint Potential Meter; Mini-disk Infiltrometer Soil hydraulic conductivity; Tensio Meter; Soil bin carriage system; Sony CXC- 390 1/3" 3 CCD Camera; Spider 8 data logger; National Instrument DAQ; NI Vision Module; Dynamic strain amplifier; and an SC-900 Soil compaction meter.

The SERD Computer Lab III in the Agricultural and Food Engineering Building has various kinds of software packages for system analysis and simulation, including DSSAT (Decision Support System for Agrotechnology Transfer), ArcView etc. A Computer-Aided Design (CAD) workstation is also available for training the design of agricultural equipment. There is a machine workshop with facilities for fabricating various types of laboratory and experimental apparatus and models. Consultation and fabrication of different types of transducers can be provided. About 20 high-end PCs connected to the campus-wide Ethernet and ATM network and a high quality laser printer, scanning and CD writing

facilities are available for students' uses.

5.2.2 Faculty and Professional Staff

Full-time Faculty

GANESH P SHIVAKOTI, BS, MS, Udaipur Univ, India; PhD, Michigan State Univ, USA.

Professor (Agricultural Development and Policy Analysis; Resource Development; Farming

Systems; Natural Resources Management)

PEEYUSH SONI; DEng

Senior Instructor (Instrumentation and Measurement Techniques; Design & Testing of Agricultural Machinery; Precision Agriculture; Analytical Techniques & Decision Tools for Agribusiness)

Visiting, Adjunct Faculty/Affiliated Faculty

S L RANAMUKHAARACHCHI, BSc, Univ of Peradeniya, Sri Lanka; MSc, PhD, Pennsylvania State Univ, USA.

Visiting Associate Professor (Agronomy; Crop Eco-physiology; Cropping Systems; Pest Management; Soil Fertility

Management; Organic Farming; Stress Physiology)

KUMAR, PRABHAT; B.Sc. (Ag. & Hons., RAU, India); M.Sc. (Ag. Systems, AIT); Dr.Rer.Hort. (Uni Hannover, Germany)

Affiliated faculty (Tropical Horticulture Production and Protection Systems, Integrated Pest Management, Extension Education and Communication, Applied and Action Research, Application of nano-technologies for Agriculture)

MISHRA, ABHA; B.Sc. (Ag.& Hons), RAU, India); M.Sc. (Ag.) Plant Breeding, RAU, Pusa, India; Ph.D. (Ag. Systems), AIT

Affiliated faculty (Agronomy; Agro-ecology, Conservation agriculture, Agriculture and Climate Change Adaptation)

CHAIYAPHOL
KAEWPRAKAISAENGKUL; PhD

Adjunct Faculty (*Agricultural Machinery Design & Testing; Instrumentation & Measurement; Quality Control & Assurance*)

ROONGRUANG KALSIRISILP; PhD

Adjunct Faculty (*Agricultural Machinery Design & Testing; Agricultural Power & Machinery Management; Agricultural. Systems Engineering*)

Professional Staff

WATTANAPORN MESKUNTAVON,
DTechSc

Senior Laboratory Supervisor (*Crop Modeling; Farm Management; Laboratory Analyses of Soil and Plants*)

5.2.4 Grants and Sponsored Research Completed in 2011

Linking Thai Jasmine Rice Farmers with Markets using Participatory action research for sustainability of rain-fed lowland rice-based system in Northeast Thailand

Duration:1-Jan-08 to 31-Dec-11
Project Investigator(s): Prabhat Kumar, Sudip Rakshit
Sponsor: Consultative Group on International Agricultural Research
CGIAR World Bank
Total Contracted Amount (THB): 8,262,000

Livelihood Training of DZLiPP on Agriculture & Marketing.

Duration: 10-Aug-11 to 31-Dec-11
Project Investigator(s): S.L. Ranamukaarachchi
Sponsor: Dry Zone Livelihood support and partnership program, Sri Lanka
Total Contracted Amount (THB): 487,500

Short Term Training in ASE Agricultural engineering

Duration: 1-Jul-10 to 31-Dec-11
Project Investigator(s): Peeyush Soni
Sponsor: Sultan qaboos University (SQU) Oman
Total Contracted Amount (THB):62,863

Regional studies on Public-Private-Partnership (PPP) in Agribusiness

and Agro Industry development in Asia

Duration: 14-Dec-10 to 31-Dec-11
Project Investigator(s): Peeyush Soni
Sponsor: FAO
Total Contracted Amount (THB): 1,395,000

5.2.5 On-going Grants and Sponsored Research

"Community preparedness for climate change and increased water use efficiency for rice cultivation using principles of SRI (System of Rice Intensification) in Central Thailand"

Duration:1-May-09 to 30-Mar-12
Project Investigator(s):Prabhat Kumar, Abha Mishra
Sponsor: APFED/UNEP
Total Contracted Amount (THB):1,020,000

Regional knowledge exchange with SRI:Producing more with less water

Duration: 1-Jun-09 to 30-Jun-12
Project Investigator(s): Prabhat Kumar, Abha Mishra
Sponsor: World Bank Institute
Total Contracted Amount (THB):1,426,30

Area Wide Integrated Pest Management of Fruit Flies in South and Southeast Asian Countries

Duration: 15-Feb-10 to 30-Dec-12
Project Investigator(s): Prabhat Kumar
Sponsor: Global Horticulture Initiative
Funding from ICDF, Taiwan
Total Contracted Amount (THB):8,125,000

Less Loss more Profit better Health:Reducing the losses caused

by the Pod borer on Vegetable legumes in SE Asia and Sub Saharan Africa by refining component technologies of a sustainable management strategy

Duration: 1-Aug-10 to 30-Dec-12
Project Investigator(s): Prabhat Kumar
Sponsor: AVDRC Taiwan
Total Contracted Amount (THB): 929,475

Capacity Building for spread Prevention and Management of Cassava Pink Mealy bug in the Greater Mekong Sub region

Duration: 15-Jun-11 to 30-Dec-12
Project Investigator(s): Prabhat Kumar, Abha Mishra
Sponsor: FAO RAP Bangkok
Total Contracted Amount (THB): 607,200

Short term Training visit and international internship on Agribusiness and Agroindustries in Thailand

Duration: 1-Sep-11 to 31-Dec-12
Project Investigator(s): Peeyush Soni
Sponsor: Joseph School of Business Studies India
Total Contracted Amount (THB): 548,873

CNH: When Strengths can become weaknesses: Emerging vulnerabilities in coupled Natural Human systems under globalization and climate change

Duration: 16-Oct-11 to 01-Sep-15
Project Investigator(s): Ganesh Shivakoti
Sponsor: NSF Total Contracted Amount (THB): 4,405,959

5.2.6 Publications

International Journal Articles with Impact factor

Nalavade, P., Peeyush Soni, Salokhe, V.M., and Tanya Niyamapa (2011). "Application of Powered Disc Implements for Efficient on-Farm Residue Management: A Review". International Agricultural Engineering Journal, 20(3):1-7. Publisher: Asian Association for Agricultural Engineering

Nalavade, P., Peeyush Soni, V.M. Salokhe and Tanya Niyamapa (2011). "Comparative Performance of Standard, Notched and Spiral-notched Tillage Discs." Manuscript submitted to: International Agricultural Engineering Journal. Date submitted: 9 February 2011, Date accepted: 26 Dec 2011, Publisher: Asian Association for Agricultural Engineering

Grianggai Samseemoung, Hemantha P. W. Jayasuriya, and Peeyush Soni (2011). "Oil Palm Pest Infestation Monitoring and Evaluation by Helicopter-mounted, Low Altitude Remote Sensing Platform." Journal of Applied Remote Sensing, 5(1): Article no. 053540. Publisher: SPIE (International Society for Optics and Photonics). [IF: 1.00]

Chakrapong Taewichit, Peeyush Soni, Vilas M. Salokhe, and H.P.W. Jayasuriya (2011). "Optimal Stochastic Multi-States First-Order Markov Chain Parameters for Synthesizing Daily Rainfall Data using Multi-Objective Differential

Evolution in Thailand." Manuscript submitted to: Meteorological Applications. Manuscript ID: MET-11-0001. Date submitted: 3-Jan-2011; Date accepted: 4Aug-2011. Publisher: John Wiley & Sons. [IF: 1.402]

Conference Publications

V.M. Salokhe, Peeyush Soni and Direk Chimchana (2011). Development and Testing of an uneven Speed Operated Co-axial Rice Thresher with Split-Rotor Mechanism for High Moisture Paddy Threshing. In: Proceedings of the "Forum on Harvester Technologies 2011", Asian Association for Agricultural Engineering (AAAE), Harvesting Machinery Branch of the Chinese Society for Agricultural Machinery (CSAM) and Jiangsu University, CHINA. 2-4 December, 2011.

Alex Keen, Nigel Hall, Peeyush Soni, Madhav D. Gholkar, Simon Cooper, and Jannatul Ferdous (2011). A Review of the Tractive Performance of Wheeled Tractors and Soil Management in Lowland Intensive Rice Production. In: Proceedings of the 17th International Conference of the International Society for Terrain-Vehicle Systems (ISTVS), Blacksburg, Virginia, USA, 18-22 September 2011.

5.2.7 Doctoral Students' Dissertation

Enhancing Biodiversity for Ecofriendly Management of Tangerine Pests in Northern Thailand

By Chomchuan Boonrahong

Supervisor Dr. S. L. Ranamukhaarachchi

Low-Altitude Remote Sensing and Image Processing for Weed and Disease Monitoring by an Unmanned Radio-Controlled Helicopter

By Grianggai Samseemoung

Supervisor Dr. Peeyush Soni

Assessing Sustainability of Small Holding Rubber-Based Farming System: Application of a Sustainable Livelihood Approach in Southern Thailand.

By Onanong Longpichai

Supervisor: Prof. Ganesh P. Shivakoti

5.2.8 Masters Students' Theses

Potential of Maize and Legumes for Double Cropping in Northwest Mountainous Region of Vietnam

By Nguyen Phi Hung

Supervisor Dr. S. L.

Ranamukhaarachchi

Effects of Surface Condition on the Tractive Performance of Small Agricultural Tractors on Bangkok Clay Soil

By Jannatul Ferdous

Supervisor Dr. Peeyush Soni

Problems, Prospects and Potentials of Nepalese Orthodox Tea Production: A Case Study of Illam District, Nepal

By Subhechchha Shrestha

Supervisor Prof. Ganesh P. Shivakoti

Development and Application of a Rice Yield Model for Suphanburi (Thailand) Under the SEA-START Climate Change Scenario

By Khagendra Pralhad Bharambe

Supervisor Dr. Peeyush Soni

Performance Evaluation of Powered-Disc Harrow under Sugarcane Residue Surface Conditions

By Thanaphop Asanathong

Supervisor Dr. Peeyush Soni

Evaluation of Thai Local Rice Varieties for High Temperature Tolerance

By Anupong Saenruen

Supervisor Dr. S. L.

Ranamukhaarachchi

Response of Mungbeans to Dosage and Placement of Nitrogen Fertilizer

By Shakila Mulavizada

Supervisor Dr. S. L.

Ranamukhaarachchi

Design and Development of a Low-Cost Piercing Machine for Dry Lotus Seeds

By Weerachai Panyawan

Supervisor Dr. Peeyush Soni

Precision Spraying Using a Radio-Controlled Quad-Copter

By Krai Noosom

Supervisor: Dr. Peeyush Soni

Irrismart: A Web-based Application for Irrigation Scheduling

By Paleerat Taptawat

Supervisor: Dr. Peeyush Soni

Chapter 5.3: SERD AQUACULTURE AND AQUATIC RESOURCE MANAGEMENT FIELD OF STUDY

5.3.1 Introduction

AARM promotes research and development through aquaculture and small-scale capture fisheries. The Field of Study has a wide spectrum of activities enabling it to address poverty, constraints facing the promotion of sustainable management and utilization of aquatic resources. The central theme is capacity building: the advancement of individuals and institutions creating indigenous capacity in education, research and development within the region.

5.3.2 Research Facilities and Laboratories

Aquaculture Laboratory serves the academic and research programs of aquaculture and aquatic resources management (AARM) field of study. It is equipped with modern equipment to analyze water quality, nutrients in food and feedstuffs, and soil classification and their problems identification. Some of its major laboratory equipment includes a Distillation Unit; Extraction Unit; Incubator; UV/Vis Spectrophotometer; Soxtec, Fibertec and Kjeltex system, microscope with camera, etc. The field facilities include a hatchery, outdoor tanks

and earthen ponds for field research.

The SERD Computer Lab III in the Agricultural and Food Engineering Building has various kinds of software packages for system analysis and simulation, including DSSAT (Decision Support System for Agrotechnology Transfer), ArcView etc. A Computer-Aided Design (CAD) workstation is also available for training the design of agricultural equipment. There is a machine workshop with facilities for fabricating various types of laboratory and experimental apparatus and models. Consultation and fabrication of different types of transducers can be provided. About 20 high-end PCs connected to the campus-wide Ethernet and ATM network and a high quality laser printer, scanning and CD writing facilities are available for students' uses.

5.3.3 Faculty and Research Staff

Emeritus Professor

PETER EDWARDS, BSc, University of Liverpool, UK; PhD, University of Texas, USA.

(General aquaculture with emphasis on recycling organic wastes (human, animal, agro-industrial); small-scale aquaculture; integrated farming; aquaculture for poverty alleviation; and systems approaches to education, research and development; curriculum development; project formulation, management and evaluation.

Full-time Faculty

AMARARATNE YAKUPITIYAGE, BSc, Univ of Kelaniya, Sri Lanka; MSc, AIT, Thailand; PhD, Univ of Stirling, Scotland.

Associate Professor (**Aquaculture, Bioenergetics, Fish Nutrition, Statistics, Database Systems Development**)

AMRIT BART, BA Earlham College, USA; MA, MS, PhD, Auburn Univ, USA.

Associate Professor (**Aquatic Resource Management, Cryopreservation, Reproductive Physiology, Seed Production**)

WENRESTI G GALLARDO, BSc, Master of Aquaculture, University of the Philippines; MSc, PhD, Nagasaki University, Japan;

Associate Professor (**Aquaculture - Seed Production and Grow-out,**

Fisheries Management, Integrated Coastal Management)

Lionel Dabbadie, MSc, Montpellier SupAgro (France); DSc (PhD), University of Paris 6, France.

Cirad Visiting Faculty (Pond dynamics, Quality and Food Safety, Systemic Approach, Research for Development, Knowledge management)

Research Staff and Affiliated Faculty

DHIRENDRA P. THAKUR, BFSc, Rajendra Agricultural University, India; MSc, AIT, Thailand; MSc, Kochi University, Japan; PhD, Ehime University, Japan;

Senior Research Specialist and Affiliated Faculty (*Intensive aquaculture, Water quality and nutrient dynamics, Environmental impacts of aquaculture; Integrated Coastal Management, Aquatic product quality and certification*)

RAM C. BHUJEL, BSc, Institute of Agriculture and Animal Sciences, IAAS, Chitwan, Nepal; MSc and PhD, AIT, Thailand;

Senior Research Scientist and Affiliated Faculty (**Biostatistics and Research Design, Curriculum Development, Women in Aquaculture, Broodstock Nutrition/Management and Fry Production, Technology Transfer/Extension**)

5.3.4 Grants and Sponsored Research Completed in 2011

Linking the Post-graduate Education in Aquaculture and Aquatic Resources Management with its Industry Through Internship

Duration: 1-Sep-07 to 28-Feb-11
Project Investigator(s): Ram C. Bhujel
Sponsor: European Commission
Total Contracted Amount (THB): 31,939,965

Sustainable Aquaculture Research Networks in Sub-Saharan Africa

Duration: 1-Feb-08 to 31-Jan-11
Project Investigator(s): Ram C. Bhujel
Sponsor: European Commission through University of Stirling, UK
Total Contracted Amount (THB): 3,000,010

International Symposium on Aquaculture and Fisheries Education

Duration: 1-Mar-09 to 28-Feb-11
Project Investigator(s): Wenresti Gallardo, Ram C Bhujel
Sponsor: Multi donors
Total Contracted Amount (THB): 2,481,600

Ecosystem Level impacts of Shrimp farm Eutrophication in Thailand

Duration: 1-Jun-09 to 28-Feb-11
Project Investigator(s): Dharendra Prasad Thakur
Sponsor: University of Michigan
Total Contracted Amount (THB): 620,160

Integrated culture of tropical abalone (*Haliotis asinina*) seaweed (*Ulva* sp.) rock oyster (*Saccostrea cucullata*) and sea bass (*Lates calcarifer*) in land-based

recirculation system

Duration: 1-Aug-09 to 31-Mar-11
Project Investigator(s): Wenresti Gallardo
Sponsor: RTG
Total Contracted Amount (THB): 950,000

5.3.5 On-going Grants and Sponsored Research

AIT-Coca Cola for Sustainable Coastal Livelihoods Project in Ranong Province, Thailand

Duration: 1-Oct-05 to 31-Mar-12
Project Investigator(s): Amrit N. Bart
Sponsor: Coca Cola (Thailand) Ltd.
Total Contracted Amount (THB): 8,000,000

Internship in Aquaculture and Aquatic Resources Conservation

Duration: 1-Sep-10 to 31-Dec-12
Project Investigator(s): Ram C. Bhujel
Sponsor: Multi donors
Total Contracted Amount (THB): 3,000,000

AIT support to National University of Laos NUOL 2007-2010 Extension-Fisheries Training

Duration: 1-May-11 to 30-Jun-12
Project Investigator(s): Wenresti G Gallardo, Amaratatne Yakupitiyage
Sponsor: SIDA
Total Contracted Amount (THB): 1,433,315

5.3.6 Publications

Journal

Coelho, S., Oliveira, R., Pereira, P., Mussoa C., Dominguesa, I., Bhujel, R.C., Soares, A.M.V.M., António J.A., Nogueira, A.J.A., 2011.

Assessing lethal and sub-lethal effects of trichlorfonon different trophic levels. *Aquatic Toxicology* 103 (2011) 191–198.

Kiriyakit, A., Gallardo, W.G., Bart, A.N., 2011. Successful hybridization of groupers (*Epinephelus coioides* x *Epinephelus lanceolatus*) using cryopreserved sperm. *Aquaculture* 320: 106-112.

Muangkeow, B., Ikejima, K., Powtongsook, S., Gallardo, W.G., 2011. Growth and nutrient conversion of white shrimp *Litopenaeus vannamei* (Boone) and Nile tilapia *Oreochromis niloticus* L. in an integrated closed recirculating system. *Aquaculture Research* 42: 1246-1260.

Nudtha, N., Yakupitiyage, A., Rakshit S.K., Prapansak S., 2011. Molecular characterization and increased expression of the Nile tilapia, *Oreochromis niloticus* (Linnaeus) T cell receptor beta chain in response to *Streptococcus agalactiae* infection. *Journal of Fish Diseases* (in press).

Nuon, V., Gallardo, W.G., 2011. Perceptions of the local community on the outcome of community fishery management in Kralah Peah village, Cambodia. *International Journal of Sustainable Development and World Ecology* 18: 453-460.

Saengsupavanich, C., Gallardo, W.G., Sajor, E., Murray, W.W., 2011. Constraints influencing stakeholder

participation in collective environmental management. *Environmental Earth Sciences* (in press).

Sakset, A., Gallardo, W.G., Ikejima K., 2011. Physicochemical conditions and biodiversity in the freshwater fishing area of Pak Phanang River Basin, Thailand. *International Journal of Sustainable Development & World Ecology* (in press).

Somphinit M., Clemente, R.S., Babel M.S. Gallardo, W.G. Sutat W. 2011 Assessment of wetland ecosystem health in Lower Songkhram, Thailand. *International Journal of Sustainable Development & World Ecology* (in press).

Conference/workshop proceedings

Baqui, M. A. and Bhujel, R. C. A hands-on training helped proliferation of tilapia culture in Bangladesh p. 311-322. In *Better Science, Better Fish, Better Life proceedings of the ninth international symposium on tilapia in aquaculture* (eds) L. Liping and K. Fitzsimmons Aqua-Fish Collaborative Research Support Program. 409 pages.

Bhujel, R.C. 2011. How to produce billions of high quality tilapia fry p. 123-131. In *Better Science, Better Fish, Better Life proceedings of the ninth international symposium on tilapia in aquaculture* (eds) L. Liping and K. Fitzsimmons Aqua-Fish

Collaborative Research Support Program. 409 pages.

Bhujel, R.C. 2011. All-male tilapia culture: techniques and challenges p. 23-30. In *Asia*

Pacific Aquaculture and Giant Prawn 2011. 17-20 Jan 2011. Kochi, India. 110 pages.

Bhujel, R.C. 2011. Issues of tilapia seed production and grow-out. WAS-APC Conference, Kochi, India, January 18-20, 2011.

Bhujel, R. C. 2011. Asia-Link internship: an effort to enhance aquaculture and fisheries education. April 22-23, 2011. Shanghai, PR China.

Bhujel, R.C. 2011. How to produce billions of high quality tilapia fry. ISTA9, April 22-23, 2011. Shanghai, PR China.

Bhujel, R.C. 2011. Improving Fisheries/Aquaculture Curricula and Enhancing Employability of Graduates: AIT Experience, p. 41-58. May 8-10, 2011. Fisheries College and Research Institute, Tamilnadu, India. 271 pages.

Bhujel, R. C., 2011. Promotion of Sustainable Aquaculture for Livelihood Improvement. Knowledge Management and Sustainable Development. Kathmandu, Nepal. AIT Alumni Conference. Dec 8-10, 2011.

De Jesus-Ayson, E.G. and Gallardo, W.G., 2011. Maintaining Environmental Integrity through Responsible Aquaculture. Proceeding of the ASEAN-SEAFDEC Conference on Sustainable fisheries for Food Security Towards 2020. Bangkok, Thailand. June 13-17, 2011.

Gallardo, W.G., 2011. Future Cooperation for Sustainable Fisheries in the ASEAN Region: Asian Institute of Technology. Proceeding of the ASEAN-SEAFDEC Conference on Sustainable fisheries for Food Security Towards 2020. Bangkok, Thailand. June 13-17, 2011.

Sreejariya, P., Gallardo, W.G. and Dabbadie, L., 2011. The role of Integrated Multi-Trophic Aquaculture (IMTA) in climate change mitigation and adaptation. In Climate Change and Green Economy: Pathway to Response. Climate Thailand Conference 2011, Bangkok; August 18-19, 2011.

Yakupitiyage, A. 2011. On-farm feeding and feeding management strategies in tropical aquaculture. pp. xx-xx. In: editors; volume title. FAO Fisheries Proceedings. No. xx, Rome, FAO. xxx p. (in press)

5.3.7 Doctoral Students' Dissertation

Enhanced Grouper (Epinephelus spp.) Seed Production using Cryopreserved Sperm from Hormone Sex-Reversed Males

By Taweessin Peatpisut
Supervisor Dr. Amrit Bart

Cryopreservation of Zebrafish (Danio rerio) Embryos

By Sawitri Silakes
Supervisor Dr. Amrit Bart

Development of Seed Production Techniques for Grouper Hybrids (Epinephelus coioides and Epinephelus lanceolatus)

By Anocha Kiriyaakit
Supervisors Dr. Wenresti Gallardo, Dr. Amrit Bart

Development of Suitable Cropping Calendars for Shrimp Culture in Mekong Delta, Vietnam

By Vo Nam Son
Supervisor Dr. Amaratatne Yakupitiyage

Biophysical and Socio-Economic Assessment for Fisheries Management in the Freshwater Fishing Area in Pak Phanang River Basin, Nakhon Si Thammarat Province, Thailand

By Amphorn Sakset
Supervisor Dr. Wenresti Gallardo

5.3.8 Masters Students' Theses and Research Studies

Assessment of Culture-Based Fisheries Management Practice and Benefits: A Case Study of Champhone and Xabouly District, Savannakhet Province, Lao PDR

By Phaisane Kaisone
Supervisor Assoc. Prof. Wenresti Gallardo

Assessment of Vulnerability and Adaptation of a Fishing Community to the Lowest Water Level in Mekong River in Stung Treng Ramsar Site Cambodia

By Lou Vanny
Supervisor Dr. Wenresti Gallardo

Successes and Failures of Community Fishery Regulations Implemented in Kiet Ngong Swamp Pathoumphone District, Champasak Province, Lao PDR

By Viengxay Xaydala
Supervisor Dr. Amaratatne Yakupitiyage

Farmers' Strategies to Reuse and Renovate Abandoned Shrimp Ponds: A Case Study in Pak Phanang River Basin, Thailand

By Hirunya Chumjinda
Supervisor Dr. Amaratatne Yakupitiyage

Exotic and Indigenous Fish Species in Two Markets, Kaisone Phomvihan District, Suvannakhet Province, Laos PDR

By Chanlakhone Homkingkeo
Supervisor Dr. Wenresti Gallardo

Chapter 5.4: SERD ENERGY FIELD OF STUDY

5.4.1 Introduction

Energy related academic program at AIT was established in 1979. So far, over 1,100 students have graduated in the Energy studies. As of December 2011, about one hundred students are enrolled in Energy Field of Study. About thirty percent of the current students are at doctoral level. Apart from teaching and student research, faculty at Energy FoS is involved in a number of research projects. Some of the current research focuses of Energy FoS are Energy, environment and climate change, Energy for sustainable development, Renewable Energy and Energy efficiency, Electric power system management, and Energy economics and planning.

Student admitted to Energy Field of Study can specialize in one of the three areas.

- Electric Power System Management (EPSM)
- Energy Technology (ET)
- Energy Economics and Planning (EEP)

Details regarding Energy field of study activities are available at www.serd.ait.ac.th/energy

Research Facilities and Laboratories

Energy Laboratory serves as a facility for conducting experimental studies for courses, carrying out students and sponsored research, and testing of energy equipments as well as providing hands-on training. Laboratory functions are focused mainly on solar thermal energy, photovoltaics, biomass energy, energy management, thermodynamics and heat transfer, and electrical measurement and analysis. The laboratory facilities include two indoor laboratories, an energy park and a meteorological station. The indoor laboratories are equipped with experiment setups, testing apparatus and measuring equipment for thermal and electrical management studies, thermodynamics, fluid mechanics and heat transfer, and electrical power supply management. Energy Park covers 3980-m² outdoor research and demonstration facility equipped with photovoltaic systems, solar thermal (air and water) systems, biomass research and daylighting setups. The meteorological station records solar radiation and other meteorological data. Energy laboratory continues to carry out testing services such as fuel quality tests, gas composition tests, tests for heating value of fuels, solar thermal collector performance tests, solar water heater system

performance tests and stove efficiency tests.

Among its major equipment include a Gas Analyzer; Campbell data logger; Ultrasonic flow-meter; Bomb calorimeter; and a Gas chromatography.

The SERD Computer Lab IV in the Energy Building has a large number of computer modeling software for energy planning and policy analysis. These include Model for Analysis of Energy Demand and Environmental Impacts (MAED, MEDEE-S/ENV, LEAP), Electricity System Planning (WASP-III Plus, ENPEP, DECPAC), Energy-Environmental Flow Optimization Model (EFOM-ENV), Wood Energy Planning Models, Energy-Environmental Models for estimation of impacts of energy externalities, air pollution emission and dispersion and climate change (CO2 DB, RAINS, TEMIC, ECOSENS, ISC) and Energy- Environmental Database Management Software (DBAVOID). An energy-environment database for Asia is maintained in this computer lab.

5.4.2 Faculty and Research Staff

Full-time Faculty

SAID IRANDOUST, MSc, PhD, Chalmers University of Technology, Sweden

Professor [*Chemical reaction engineering*]

SIVANAPPAN KUMAR, BE, Univ of Madras, India; MEng, AIT, Thailand; PhD, Inst Natl Polytechnique, Toulouse, France.

Professor [*Renewable energy resources and technologies: Climate change and green house gas mitigation: energy and sustainable development*]

WEERAKORN ONGSAKUL, BEng, Chulalongkorn Univ, Thailand; MS, PhD, Texas A&M Univ, USA.

Associate Professor and Dean, School of Environment, Resources and Development (*Artificial Intelligence Applications to Power Systems; Parallel Processing Applications; Power System Operation & Control; Power System Deregulation & Restructuring*)

P. ABDUL SALAM, BSc.Eng (Hons.) University of Peradeniya, Sri Lanka; M.Eng., D.Eng., AIT

Assistant Professor (*Bioenergy, Renewable energy; Energy conservation and efficiency*) ; *climate change mitigation*)

JAI GOVIND SINGH, Ph.D. in Electrical Engineering, Indian Institute of Technology, Kanpur, India

Assistant Professor (*Power system planning; Operation and control; FACTS controllers; Restructuring of Electric Industry, Demand side management; Grid integration of renewable energy resources; Power distribution systems*)

Visiting Faculty

BRAHMANAND MOHANTY, BSc, SAICE, India; MSc, AIT, Thailand; PhD, Institut National Polytechnique of Toulouse, France

Visiting Faculty [*Cogeneration, Demand-side management, Energy auditing and conservation, Energy Efficiency policies; and Rational use of technology*]

CHARLES O P MARPAUNG, Ms.c, Statistics, Bogor Agricultural University, Indonesia; D. Eng, AIT

Visiting Faculty [*Generation expansion planning; Energy economics and environmental modeling*]

SRI NIWAS SINGH, B.Tech. (E.E.) Kamla Nehru Institute of Technology Sultanpur, India, M.Tech. Electrical (Power Systems), India Institute of Technology, Kanpur, India, Ph.D. Electrical (Power Systems) India Institute of Technology, Kanpur, India.

Visiting Faculty (*Power System Restructuring/Deregulation; FACTS Technology; Wind Power; Optimal Power Dispatch and Security*

Analysis; Power System Dynamics, Operation and Control; Distributed Generation and Smart Grid; AI Application in Power Systems)

Adjunct Faculty

RAM M SHRESTHA, BE, Univ of Baroda; LL Tribhuvan Univ, Nepal; MEng, DEng, AIT, Thailand.

Emeritus Professor and Adjunct Faculty [*Energy and Environmental Policy; Energy Economics; Energy-economic Modeling*]

Research Staff

Mr. Albert Pedrajas, *Program Officer* (NUOL Project)

Ms. Kanwalai Nachaisit, *Secretary* (GMSARN Project)

Ms. Maria Kathrina Gratuito, *Research Associate* (RERIC))

Ms. Merina S. Lohani, *Research Associate* (TNA – mitigation Project)

Ms. Parichart Kammeerak, *Secretary* (RERIC)

Mr. Pravakar Pradhan *Research Associate* (ADEME Project)

Mr. Ramesh Soysa, *Research Associate* (GMSARN Project)

Ms. Sheree Ann Baywes-Mendoza, *Secretary* (ADEME, TNA – mitigation Project)

Dr. Vo Ngoc Dieu, *Research Associate (Part time)* (GMSARN Project)

Ms. Pujan Shrestha, *Research Associate* (UPEA Project)

Mr. Prathamesh Savagaonkor, *Research Associate* (ADBI Project)

Ms. Barsha Pandey, *Research Associate* (TNA Project)

Ms. Brenda Cabahug, *Research Assistant* (TNA Project)

Ms. Bantu Sireesha, *Research Associate* (EBARA Project)

5.4.4 Grants and Sponsored Research Completed in 2011

Completed Projects:

1. Biomass Gasification Study in the Mekong Region.

The study aimed to review/survey the existing commercial biomass gasification plants/projects in Thailand and Cambodia. The study identified the problems associated with the plants and suggested the measures to overcome them. Duration: June 2010 – February 2011 Project status: Completed Investigator: Dr. P. Abdul Salam and Prof. S. Kumar Sponsor: Energy Environment Partnership (EEP Mekong Region) Total contracted amount: Baht 617,000

2. ICETT International Cooperation Network Information Project (ICNIP) in Thailand.

The project aimed to conduct a seminar in Thailand with the objective of promoting voluntary and collaborative activities for environmental conservation and business promotion. Duration: 1 September 2010 – 31 December 2010 Project status: Completed Investigator: Prof. S. Kumar Sponsor: International Centre for Environmental Technology Transfer (ICETT), Japan Total contracted amount: Baht 230,000

3. CDKN Project Proposal on Sustainable Tourism.

The objectives of this sponsored activity are to provide support to the design, development and preparation of a project proposal.

Duration: 1 June – August 2011 Project status: Completed Investigator: Prof. S. Kumar and Dr. K. Kusakabe Sponsor: Sustainable Mekong Research Network Total contracted amount: Baht 120,000 (US\$ 4,000)

Continuing Projects:

1. Actions towards Resource-efficient and Low carbon Cities in Asia.

In order to assist urban decision makers, The French Environment and Energy Management Agency or ADEME (Agence de l'Environnement et de la Maitris de l'Energy) has developed methodologies and tools such as the "Territorial Climate Energy Plan" (PCET) which aims to

address climate change mitigation and adaptation using the "Bilan Carbone TM" tool. Such approaches are already widely used in France. The project will aim to: (a) Study "Territorial Climate and Energy Plan (PCET) and "Bilan Carbone TM" developed by ADEME and their applicability to Asian small- and medium-size cities; (b) Identify and select of small but growing cities in Asia that are keen to adopt the path of low carbon growth (LCG); (c) discuss with stakeholders and other organizations on implementing LCG; (d) Implementation of pilot scale activities identified by "Bilan carboneTM" tool; (e) Dissemination and information sharing. Duration: December 2009- February 2012 Project status: In progress

Investigator: Prof. S. Kumar, Prof. C. Visvanathan, Dr. Ranjith Perera, Dr. P. Abdul Salam, Dr. Charles O.P. Marpaung and Dr. Kyoko Kusakabe Sponsor: ADEME (French Agency for Environment and Energy) Total contracted amount: Baht 11,052,979

2. AIT Support to National University of Laos (NUOL), 2007-2010 Extension Research on Financial Management

AIT provided support to NUOL in

1. Improvement of strategies and structures for development of research.

2. development of curriculum and training for Master degree courses
3. financial management (including financial hands-on training)
4. Information Communication Technology (ICT) development
5. assist the department of higher education (DHE) ministry of education, Laos PDR in development of “national policy and strategy to support research and research management. Duration: April 2007 – 30 June 2012 Project status: In progress Investigator: Prof. S. Kumar Sponsor: Sida Total contracted amount: Baht 31,807,061

3. Bangkok Greenhouse Gas Emissions Study. (Tongji)

Climate change has become issue of global concern, and the action we take today will have dramatic implications for future generations. At present, as more than half of the world’s population is living in the towns and cities, study on response mechanisms and strategies for

climate change at city level is of practical significance, especially in regions with high population density. This study aims to identify key factors which influence carbon emissions. and reduction in Bangkok and analyzing the balance between carbon sources and sinks. Duration: 1 January – 1 July 2011
 Project status: In progress
 Investigator: Prof. S. Kumar and Dr. C. Marpaung Sponsor: Tongji University China Total contracted amount: Baht 495,000

4. Energy Field of Studies Publications.

The Renewable Energy Resources Information Center (RERIC) houses the publication arm of the Energy Field of Study. It publishes the International Energy Journal (IEJ), formerly known as the RERIC International Energy Journal. The IEJ, published since 1979, is dedicated to advancing knowledge in energy by vigorous examination and analysis of theories and good practices, and encouraging innovations needed to solve energy-related issues. IEJ is a quarterly journal with papers on technical, socio-economic and environmental aspects of energy planning, energy conservation, renewable sources of energy, electric power transmission, generation and management.

Duration: 1 January 2011 – 31December 2011 Project status: In progress Project Investigator: Prof. S. Kumar and Dr. P. Abdul Salam

Sponsor: Membership fees, AIT
 Total Contracted Amount: Baht 1,521,149

5. King HRD Scholarship Project.

To provide fellowships for eligible Thai candidate and all expenses are related to support tuition & fee and education activities only. Duration: 1 October 2009 – September 2013 Project status: In progress Investigator: Dr. Weerakorn Ongsakul Sponsor: Energy Planning and Policy Office (EPPPO), Thailand Total contracted amount: Baht 12,753,200

6. Provincial Electricity Authority (PEA)-AIT Cooperation Project.

To provide fellowships for eligible PEA staff and all expenses are related to support tuition & fee, and education activities only Duration: January 2009 – December 2012 Project status: In progress Investigator: Dr. Weerakorn Ongsakul Sponsor: Provincial Electricity Authority (PEA), Thailand Total contracted amount: Baht 27,374,000

7. Energy-Environmental Data Analysis for Low Carbon Society (EEDA).

The project is about collection data related to low carbon society for selected South East and South Asian countries from the available publications. The research project also analyzes future energy

consumptions and emissions of greenhouse gases under the reference and low carbon scenarios. Duration: 1 December 2009 – June 2011 Project status: In progress Investigator: Prof. Ram M. Shrestha and Prof. Kumar Sponsor: MHIR (Mizhou) Total contracted amount: Baht 740,000

8. Micro hydro – PV hybrid system.

The project aims to design, develop and install a micro hydro – photovoltaic system at the Energy Park of AIT and conduct tests to evaluate the performance of the system working in hybrid mode. Duration: 1 February 2010– 1 April 2012 Project status: In progress Investigator: Prof. S. Kumar,

Dr. P. AbdulSalam, Dr. Jai Govind Singh and

Dr. Charles O.P. Marpaung Sponsor: Ebara Katayema Memorial Fund, Japan Total contracted amount: Baht 1,440,000

9. Technology Needs Assessments in Asia for Climate Change Mitigation. (TNA)

The objective of the project is to assist participant developing country parties identify and analyze priority technology needs, which can form the basis for a portfolio of environmentally sound technology (EST) projects and programmes to facilitate the transfer of, and access

to, the ESTs and know-how in the implementation of Article 4.5 of the UNFCCC convention. The project involves research, capacity building and training for participants (government ministries) from 10-12 Asian countries in 2 phases. Duration: 1 July 2010 – 30 April 2012 Project status: In progress Investigator: Prof. S. Kumar, Dr. P. Abdul Salam and Dr. Charles O.P. Marpaung and Dr. R. Shrestha Sponsor: UNEP Riso Centre Total contracted amount: Baht 11,068,470

10. Low carbon cities: Learning from the experiences in France.

The project will manage a regional workshop at AIT by the end of 2011 and would involve all stakeholders, Asian and French (in particular ADEME, AFD, etc.) of the project Low Carbon Cities: Learning from the experiences in France. Duration: September 2010 – 31 December 2011

Project status: In progress Investigator: Prof. S. Kumar, Prof. C. Visvanathan, Dr. P. Abdul Salam, Dr. Charles Marpaung, Dr. L.A.S. Ranjith Perera and Dr. Kyoko Kusakabe Sponsor: SDCC/AIT – France Network Total contracted amount: Baht 480,000

Projects Initiated in 2011

1. Biofuel Sustainability Policy Study.

The objectives of the project are as follows: To analyze biofuel production in Thailand from an ecological/environmental, economic and social perspective. Employing an integrated approach that effectively identifies and suggest opportunities presented in synergies among ecological/environmental, economic and social dimensions specific to biofuels in Thailand. Minimizing trade-offs between biofuel and food production i.e. land use change related to the diversion of land from food to the biofuel production. Recommended biofuel production should result in significant net greenhouse gas emissions reductions when considered on a life cycle perspective. The role biofuel plays in existing or planned bioenergy policy for Thailand and to estimate as best as possible the potential benefits/cost from an ecological/environmental, economic and social perspective. Duration: 1 May 2011 – 30 November 2012

Project status: In progress Investigator: Prof. S. Kumar and Dr. P. Abdul Salam Sponsor: Global Network on Energy for Sustainable Development (GNESD), Denmark Total contracted amount: Baht 300,000

2. UNEP RRC.AP Project.

The objectives to support for Central Asian applicant through UNEP RRC AP project. UNEP RRC.AP has requested the conduction of a study

to analyze the possibility of expanding the use of renewable energy sources and introducing of cleaner energy technologies and their market development in Central Asia, by promoting improved policies and regulations, development of national clean technology plan, and establishment of energy performance standards.

Duration: August 2011 - August 2012 Project status:

In progress Investigator: Prof. S. Kumar and

Dr .C. Marpaung Sponsor:

UNEP RRC-AP Total contracted amount: Baht 600,000 (US\$20,000)

3. Urban and Peri-urban Energy Access III (GNESD – UPEA III)

The objectives of the project are as follows:

To build upon the research conducted in UPEA II and provide snapshot of the region studied and discuss on the access to legal and cleaner energy access by the urban poor ii) To identify the supply – and demand-side barriers to energy access iii) To collect and compile barrier specific best practices that have supported or enabled energy access for the urban poor iv) To provide specific recommendations to address the barriers identified above, and v) To establish a policy dialogue panel Duration: August 2011 – 28 June 2012 Project status: In progress

Investigator: Prof. S. Kumar and Dr. Abdul Salam Sponsor: Global Network on Energy for Sustainable Development (GNESD), Denmark Total contracted amount: Baht 1,200,000 (US\$ 40,000)

4. Indicator for Low Carbon Green Growth/Green (GDP).

The study on Climate Change and Green Asia examines how emerging economies of Asia are operating amid changing demands for low carbon development and what kind of pro-active policies would strengthen such green growth practices in development Asia. The main objectives of the study are (i) examine the key issues and challenges in reducing GHG emissions without adversely affecting economic growth (ii) assesses the scope and merits of current pledges, programs, strategies and institutions and provide recommendations for a new, low carbon growth paradigm (iii) develop an effective policy framework based on the principles of equity, market orientation and regional cooperation to speed up the transition towards a low carbon Asia. The study will develop an index for low carbon green growth based on Policy, Economy, Technology and Social indicators. The indicators and the measurement framework will be kept flexible enough to adapt to different

national contexts. Duration: September 2011 – June 2012

Project status: In progress Investigator: Prof. S. Kumar Sponsor: Asian Development Bank Institute (ADBI), Japan Total contracted amount: Baht 750,000.00 (US\$ 25,000)

5. CKDN Project proposal on sustainable tourism. (Sumernet)

The objective of this sponsored activity is to prepare the proposal in consultation with partners. Duration: 1 June – August 2011 Project status: Completed

Investigator: Prof. S. Kumar and Kyoko Kusakabe Sponsor: Climate Knowledge development Network (CKDN) Total contracted amount: Baht 120,000 (US\$ 4,000)

6. Sustainable urban tourism through low carbon initiatives: Experiences from Hue and Chiang Mai. (Sumernet).

This research aims to explore strategies for alleviating poverty and low carbon emissions in the urban tourism sector of Hue and Chiang Mai cities. The project will aim to: a) improve understanding and assist in the reduction of carbon emissions in urban tourism sector, and b) recommend GHG mitigation policies and plans that could generate green and decent jobs for women and men, especially targeting lower.

Duration: 26 September 2011 – 30 November 2012 Project status: In progress Investigator: Prof. S. Kumar and Kyoko Kusakabe Sponsor: Climate Knowledge development Network (CDKN) Total contracted amount: Baht 2,250,000 (US\$ 75,000)

7. Promoting Renewable Energy, Clean Fuels, and Energy Efficiency in the Greater Mekong Subregion.

This project aims to provide technical support to the Sub-regional Energy Forum (SEF) to promote SEF as the vehicle for knowledge dissemination in the GMS. This project is initiated to ensure the realization of the GMS Road Map for Expanded Cooperation in the energy sector, build capacities in the GMS countries in renewable energy, clean fuels, and energy efficiency policies, plans, and program formulation, and develop a strategic development framework through preparation of business models for the selected clean energy technologies by considering disparate energy market conditions, institutional arrangements & frameworks, and technology transfer schemes. Duration: August 2011 – June 2013 Project status: In progress Investigator: Prof. S. Kumar Sponsor: Lahmeyer/ADB Total contracted amount: Baht 2,640,000 (US\$ 88,000)

5.4.5 Publications

Refereed International Journal

Adeel Waqas and S. Kumar, "Utilization of Latent Heat Storage Unit for Comfort Ventilation of Building in Hot and Dry Climates" *International Journal of Green Energy*, Vol.8, No. 1 pp. 1-24, 2011.

Adeel Waqas and S. Kumar, "Thermal performance of latent heat storage for free cooling of building in a dry and hot climate: An experimental study" *Energy and Buildings*, Vol. 43, pp. 2621-2630, 2011.

R. Balana*, J. Chandrasekaran, S. Shanmugan, B. Janarthananb and S. Kumar, "Desalination and Water Treatment" *Review on passive solar distillation*, Vol.28, Page 217-238, April 2011.

C. Boonchuay and W. Ongsakul, Optimal Risky Bidding Strategy for a Generating Company by Self-Organizing Hierarchical PSO, *Energy Conversion and Management*, Vol. 52, No. 2, 2011, pp. 1047–1053. (2010 impact factor = 2.054)

C. Boonchuay and W. Ongsakul, Risk-Constrained Optimal Bidding Strategy for Generation Company Using Self-Organizing Hierarchical PSO, accepted for publication in *Applied Artificial Intelligence*, Dec 8, 2011.

Chanwit Boonchuay and Weerakorn Ongsakul "Optimal risky bidding

strategy for a generating company by self-organising hierarchical particle swarm optimisation" *Energy Conversion and Management*, Vol.52 pp. 1047-1053, 2011.

J. Chandrasekaran, D. Nithyaprakash, K.B. Ajjan, S. Maruthanuthu, D. Manoharan and S. Kumar, "Hybrid solar cell based on blending of organic and inorganic materials – An overview" *Renewable and Sustainable Energy Reviews*, Vol.15 No. 2 pp.1228-1238, 2011.

I Made Wartana, Jai Govind Singh, Weerakorn Ongsakul, Sasidharan Sreedharan, Optimal Placement of FACTS Controllers for Maximizing System Loadability by PSO, accepted for publication in *International Journal of Power and Energy Conversion*, Dec 8, 2011.

N. Phuangpornpitak, S. Kumar "User Acceptance of Diesel/PV Hybrid System in an Island Community" *Renewable Energy*, Vol.36, Issue 1, Page 125-131, January 2011.

Satoru Komatsu^{a*}, Shinji Kaneko^a, Ram M. Shrestha^b, Partha Pratim Ghosh, "Nonincome factors behind the purchase decisions of solar home systems in rural Bangladesh" *Energy for sustainable Development*, Vol. 15, No. 2, Page 1-9, 2011.

Shree Raj Shakya and Ram M. Shrestha, "Transport sector electrification in a hydropower resource rich developing country:

Energy security, environmental and climate change co-benefits” *Energy for Sustainable Development*, Vol. 15, pp. 147-159, 2011.

Shree Raj Shakya, S. Kumar and Ram M. Shrestha, Co-benefits of a carbon tax in Nepal, *Mitigation and Adaptation to Climate Change*, accepted for publication, June 2011.

Surapong Chiratananon and Vu Duc Hien, “Thermal performance and cost effectiveness of massive walls under thai climate” *Energy and Buildings*, Vol. 43, pp. 1655-1662, 2011

Vijitra Chalatlou, Murari Mohon Roy, Animesh Dutta and Sivanappan Kumar, *Jatropha* oil production and an experimental investigation of its use as an alternative fuel in a DI diesel engine, *Journal of Petroleum Technology and Alternative Fuels*, Vol. 2(5), pp. 76-85, May 2011.

W. Prommee and W. Ongsakul, Optima Multiple Distributed Generation Placement in Microgrid System by Improved Reinitialized Social Structures Particle Swarm Optimization, *European Transactions on Electrical Power*, Vol. 21, No. 1, pp. 489-504, January 2011.

W. Ongsakul, A. Saksinchai, and C. Boonchuay, Multi-Objective Bidding Strategy for Genco Using Non-Dominated Sorting Particle Swarm Optimization, *International Journal of Applied Decision Sciences (IJADS)*, Vol. 4, No. 3, 2011.

Vo Ngoc Dieu and W. Ongsakul, Augmented Lagrange Hopfield Network Based Lagrangian Relaxation for Unit Commitment, *International Journal of Electrical and Energy Systems*, Vol. 33, No. 3, Pages 522–530, March 2011.

V. N. Dieu, W. Ongsakul, and J. Polprasert, “Augmented Lagrange Hopfield Network for Economic Dispatch with Multiple Fuel Option, accepted for publication in *Computer and Mathematics with Applications Mathematical and Computer Modeling*, March 2011.

V. N. Dieu and W. Ongsakul, Economic Dispatch with Multiple Fuel Types by Enhanced Augmented Lagrange Hopfield Network, accepted for publication in *Applied Energy*, Sept 16, 2011.

J. Polprasert, W. Ongsakul, and V. N. Dieu, Self-Organizing Hierarchical Particle Swarm Optimization with Time-Varying Acceleration Coefficients for Economic Dispatch with Valve Point Effects and Multifuel Options, accepted for publication in *International Journal of Energy Optimization and Engineering*, 2011.

Yusak Tanoto, Weerakorn Ongsakul, Charles O.P. Marpaung, Levenberg-Marquardt Recurrent Networks for Long-Term Electricity Peak Load Forecasting, *TELKOMNIKA*, Vol.9, No.2, August 2011, pp. 257-266, e-ISSN: 2087-278X (p-ISSN: 1693-6930).

Naruemon P, N.K. Tripathi, S. Kumar and P. Soni, Inter-sensor Comparison between THEOS and Landsat-5 TM Data in Study of Two Agricultural Crops in Thailand, *Journal of Remote sensing*, accepted for publication, December 2011.

Meetings:

P. Abdul Salam, “Global Network on Energy for Sustainable Development (GNESD)” Working Group and Expert Group Meeting, Vienna, Austria. 23-24 June 2011.

P. Abdul Salam, “Vienna Energy Forum. Organized by United Nations Industrial Development Organization (UNIDO)” Vienna, Austria, 21-22 June 2011.

P. Abdul Salam, “Sustainable Bio-energy Symposium” Organized by Food and Agriculture Organization. BITEC Conference Centre, Bangkok, 2 June 2011.

P. Abdul Salam, “International Conference on Renewable Energy: Energy Security in 21st Century” Organized by Joint Graduate School for Energy and Environment (JGSEE). BITEC Conference Centre, Bangkok, 1 June 2011.

P. Abdul Salam, “World Energy Council (WEC) Asia regional conference and meeting” BITEC Conference Centre, Bangkok. 24 March 2011.

Sasidharan Sreedharan, Weerakorn Ongsakul, **J G Singh** and I Made Wartana, "Development of PSO based Control algorithms for maximum wind penetration", *IEEE PES General Meeting*, Detroit, Michigan, USA, 26–29 July, 2011.

Special lectures and keynote addresses:

P. Abdul Salam, "Save our planet carbon score card. Save our planet conference series 2011" Organized by *ASEAN Affairs*, Shangri-La Hotel, Bangkok Thailand 18 March 2011.

Conference/Workshop presentations

P. Abdul Salam, Modern Energy Use by the Urban Poor in Thailand: a Study of Slum Households in Bangkok and Khon Kaen. Workshop on Urban and Peri-urban Energy Access and Development in Asia 4th October 2011, Sotel Centara, Bangkok, Thailand.

D.X. Duc, Jai Govind Singh, *Weerakorn Ongsakul*, "Water Valuation in Vietnamese Electricity Generation Market", *International Conference and Utility Exhibition 2011 on Power and Energy Systems: Issues and Prospects for Asia (ICUE 2011)*, 28-30 September, 2011. (accepted for publication)

I Made Wartana, Jai Govind Singh, Weerakorn Ongsakul, Kittavit Buayai, and Sasidharan Sreedharan (2011), "Optimal Placement of UPFC for Maximizing System Loadability

and Minimize Active Power Losses by NSGA-II," *International Conference and Utility Exhibition 2011 on Power and Energy Systems: Issues and Prospects for Asia (ICUE 2011)*, 28-30 September 2011. (accepted for publication)

S. Kumar, "National innovation systems and co-benefit technologies for low carbon green growth", *Climate Change and Green Asia Inception Workshop*, Tokyo, Japan, 28 February – 1 March, 2011.

S. Kumar, "Managing innovations for low carbon green development", *Policy Dialogue on Working together for a Green Asia*, Hong Kong, China, 21 April, 2011.

S. Kumar, "Current energy situation and sustainable development in Asia", *Workshop of ODA-UNESCO project for promotion of energy science education for sustainable development in Asia (Vietnam)*, Hanoi, Vietnam, 30 – 31 May 2011.

S. Kumar, "Energy efficiency in an urban context", *2011 Asia-Pacific Leadership Programme on Environment for Sustainable Development*, Shanghai, PR China, 5 - 9 June 2011.

S. Kumar, "AIT support to NUOL: 2011 extension activities", *Sida-NUOL Annual review Meeting*, Vientiane, Lao PDR, 13 June 2011.

S. Kumar, "RETSscreen Use in University - level Energy Courses", *RETSscreen Annual Conference and*

Training Institute, Niagara Falls, Canada, 20 - 22 June, 2011.

S. Kumar, "La recherche a l' AIT", *Programme de la Conférence thématique AUF « sciences pour l' ingénieur »*, Phnom Penh, Cambodia, 7-8 September 2011.

S. Kumar, "Co-Benefit Technologies and National Innovation Systems", *Climate Change and Green Asia Technical Workshop*, New Delhi, India, 12– 13 September, 2011.

S. Kumar, "Indicators for Low Carbon Green Growth", *Climate Change and Green Asia Technical Workshop*, New Delhi, India, 12– 13 September, 2011.

S. Kumar, "Urban energy issues", *Power management and Energy security initiatives for socio economic development in India*, Coimbatore, India, 15 November 2011.

S. Kumar, "Role of Renewable Energy Micro-systems for fostering rural development and entrepreneurship", *Consultative Forum for research managers on "Promoting R and D Collaboration in the development of renewable energy micro-systems for rural applications"*, Guangzhou, China, 30 November – 1 December 2011.

S. Kumar, "Use of solar energy for sustainable development", *Workshop on Climate change and sustainable development*,

Nayphitaw, Myanmar, 13-14 December 2011.

Sasidharan Sreedharan, Weerakorn Ongsakul, Jai Govind Singh, I Made Wartana and Kittavit Buayai, "PSO Based Tuning of FACTS Controllers for Maximizing the Wind Energy Penetration in Power Systems," IEEE-PES, ISGT International Conference, Kollam, Kerala India, 2011.

Papers in conference proceedings

S. Kumar, Energy for sustainable development: Tropical island nation's context, *International Conference on Tropical Island Ecosystems: Issues related to livelihood, sustainable development and climate change*, Port Blair, India, 23 – 26 March, 2011.

S. Kumar, "RETSscreen Use in University- level Energy Courses", *RETSscreen Annual Conference and Training Institute*, Niagara Falls, Canada, 20-22 June, 2011.

Sasidharan Sreedharan, Weerakorn Ongsakul, J. G. Singh and I. Made Wartana (2011), "Development of PSO based Control algorithms for maximum wind penetration", *IEEE PES General Meeting*, Detroit, Michigan, USA, 26–29 July, 2011. (accepted for publication)

Wipawan Thammachataree and P. Abdul Salam, Biogas as an Option for a Low Carbon Campus: a case study at AIT, Presented at the International Conference and Utility

Exhibition 2011 on Power and Energy Systems: Issues and Prospects for Asia, Amari Hotel, Pattaya, Thailand, 28-30 September 2011.

Papers in workshops

P. Abdul Salam, Modern Energy Use by the Urban Poor in Thailand: a Study of Slum Households in Bangkok and Khon Kaen. Workshop on Urban and Peri-urban Energy Access and Development in Asia 4th October 2011, Sofitel Centara, Bangkok, Thailand.

S. Kumar, National innovation systems and co-benefit technologies for low carbon green growth, Climate Change and Green Asia Inception Workshop, Tokyo, Japan, 28 February – 1 March, 2011.

S. Kumar, Current energy situation and sustainable development in Asia, Workshop of ODA-Unesco project for promotion of energy science education for sustainable development in Asia (Vietnam), Hanoi, Vietnam, 30-31 May 2011. S. Kumar, Energy efficiency in an urban context, 2011 Asia Pacific leadership programme on environment for sustainable development, Shanghai, PR China, 5-9 June 2011.

S. Kumar, Role of Renewable Energy Micro- systems for fostering rural development and entrepreneurship, Consultative Forum for research managers on "Promoting R and D

Collaboration in the development of renewable energy micro-systems for rural applications", Guangzhou, China, 30 November – 1 December 2011.

S. Kumar, Use of solar energy for sustainable development, Workshop on Climate Change and Sustainable Development, Naypyitaw, Myanmar, December 12-13, 2011.

Invited lectures and keynote addresses

S. Kumar, key note address, L'recherche a l'AIT, Conférence thématique AUF « sciences pour l'ingénieur », Phnom Penh, Cambodia, 7 - 8 September 2011. S. Kumar, Consultative Forum for research managers on "Promoting R and D Collaboration in the development of renewable energy micro-systems for rural applications", 30 November – 1 December 2011, Guangzhou, China.

S. Kumar, Climate change and sustainable development Workshop, Nayphitaw, Myanmar, 13-14 December 2011.

S. Kumar, Climate change and sustainable development Workshop, Yangon, Myanmar, 15 December 2011.

S. Kumar, 3rd Workshop of ODA UNESCO Project for Promotion of Energy Science Education for Sustainable Development in Asia (Vietnam), Hanoi, Vietnam, 25 December 2011.

5.4.6 Doctoral Students' Dissertation

Experimental and Numerical Studies on the Performance of Two-Stage Downdraft Wood Gasifier

By Kitipong Jaojaruek

Supervisor Prof. Sivanappan Kumar

Utilization of Phase Change Material (PCM) Storage for Heating and Cooling of Buildings for Hot and Cold Climates

By Adeel Waqas Ahmad

Supervisor Prof. Sivanappan Kumar

Electricity Tracing in Systems with and without Circulating Flows: Theoretical Proofs and Application on Inter-TSO Compensation in Cross-Border Trades

By Chira Achayuthakan

Supervisor Dr. Weerakorn Ongsakul

Optimal Risky Bidding Strategy for a Generation Company using Self-Organizing Hierarchical Particle Swarm Optimization

By Chanwit Boonchuay

Supervisor Dr. Weerakorn Ongsakul

A Solar-Biomass Hybrid Air Conditioning System

By Boonrit Prasartkaew

Supervisor Prof. Sivanappan Kumar

A Study of a Dew Point Evaporative Cooling System Assisted by a Solar Liquid Desiccant System

By Boonchai Rianguvilakul

Supervisor Prof. Sivanappan Kumar

Masters Students' Theses and Research Studies Distribution

Expansion Planning: A Case of Travinh City, Vietnam

By Phan The Hieu

Supervisor Dr. Weerakorn Ongsakul

CO2 Emission and Mitigation Strategies in a City: A Case Study of Bangkok

By Pipat Poopeerasupong

Supervisor Dr. Charles Marpuang

Applications of Woody Biomass in a Small Scale Gasification System

By Daya Ram Nhuchhen

Supervisor Dr. P. Abdul Salam

Optimal Scheduling of Combined Heat and Power Units in a Household Islanding Microgrid System

By Paveen Suwannawat

Supervisor Dr. Weerakorn Ongsakul

Biogas as an Option for a Low Carbon Campus: A Case Study at AIT

By Wipawan Thammachataree

Supervisor Dr. P. Abdul Salam

Comparison of Harmonic Behavior of Compact Fluorescent Lamp in Thailand

By Vipasinee Kesornpikul

Supervisor Dr. Weerakorn Ongsakul

Optimal Capacitor Placement for Voltage Improvement and Loss Reduction in Power Distribution Networks in Lao PDR

By Phoukhong Sinyasone

Supervisor Dr. Weerakorn Ongsakul

Development of Village Level Sustainability Indicators

By Ashishkumar Pradeepkumar Paliwal
Supervisor Prof. Sivanappan Kumar

Estimation of Carbon Footprint for an Indian Diesel Engine Manufacturing Industry

By Nikhil Sakharam Korsepatil

Supervisors Prof. S.V. Joshi (VSIS), Dr. P. Abdul Salam

Optimal DG Placement in Island Microgrid System by PSO with Time-Varying Acceleration Coefficients

By Kritsnai Jantawongsri

Supervisor Dr. Weerakorn Ongsakul

Application of Bilan Carbone® Tool in a Canned Sardine Factory

By Thamrongpan Chaiyamas

Supervisor Prof. Sivanappan Kumar

Optimal Distribution Substation Placement, Size and Installation Period by Improved-Binary Particle Swarm Optimization

By Chakkapong Somsri

Supervisor Dr. Weerakorn Ongsakul

A Multi-Agent Based Power System Restoration Approach in Distributed Smart Grid

By Warodom Khamphanchai

Supervisor Dr. Weerakorn Ongsakul

Multi-Area Economic Dispatch by Particle Swarm Optimization with Time-Varying Acceleration Coefficients

By Watchara Jaroenpan

Supervisor Dr. Weerakorn Ongsakul

Electricity Retail Price in Competitive Market using the Risk Adjusted Capital Asset Pricing Model (CAPM): A Case of Thailand

By Pasapong Gamonwet
Supervisor Dr. Charles Marpuang

*Risk Analysis in the Financial
Evaluation of Electricity Transmission
System Extension Project: A Case
Study of Samui Island, Thailand*

By Pensupa Sattawatananon
Supervisor Dr. Charles Marpuang

*Optimal TCSC Placement for
Minimization of Transmission Losses*

By Su Yin Min
Supervisor Dr. Weerakorn Ongsakul

*Fault Identification and Locating on
PEA Distribution System*

By Bhakbhun Kaewkamthong
Supervisor Dr. Weerakorn Ongsakul

*Electromagnetic Transient
Simulation for the 500 KV Vinh Tan -
Song May Transmission Line*

By Tran Tien Hung
Supervisor Dr. Jai Govind Singh

*Feeder Automation Planning for
Hanoi Power Distribution System*

By Hoang Thanh Hai
Supervisor Dr. Weerakorn Ongsakul

*Water Valuation in the Vietnamese
Competitive Generation Market*

By Dinh Xuan Duc
Supervisor Dr. Jai Govind Singh

*Potential Palm Oil Residue for an
Energy Based System in South
Sumatera*

By Hafsah
Supervisor Dr. P. Abdul Salam

Study on Trigenation System

By Panomporn Korndee
Supervisor Dr. P. Abdul Salam

*An Analysis of the Causality
Relationship Between Economic
Growth and Energy Consumption:
Case Study in Thailand*

By Pun Phullsub
Supervisors Dr. Charles Marpuang, Prof.
Sivanappan Kumar

*A Study on Heat-pipe Evacuated
Tube Solar Water Heater and its
Application in a Hotel*

By Thanapol Sathaporn
Supervisor Prof. Sivanappan Kumar

*An Assessment of Micro Hydropower
for Rural Electrification: A Case Study
of Maesa Basin, Thailand*

By Tharakorn Chanlapa
Supervisor Prof. Sivanappan Kumar

*Comparative Study of Index
Decomposition Analysis Approaches
for CO₂ Emission Changes: A Case
Study in South-East Asian Countries*

By Shahina Perveen
Supervisor Dr. Charles O. P. Marpuang

*Renewable Energy Resource
Potential in Timor-Leste*

By Kassius Klei de J.M.M.D. Ximenes
Supervisor Prof. Sivanappan Kumar

*Monthly Electricity Demand Forecast
for Provincial Electricity Authority
Using Autoregressive Integrated
Moving Average (ARIMA) and
Artificial Neural Network (ANN): A
Case Study of Chiangmai*

By Chonlapat Leewarinpanich
Supervisor Dr. Charles O. P. Marpuang

*GHG Mitigation Potential of Clean
Coal Technologies and Carbon
Capture and Sequestration in
Thailand*

By Peerakit Theerasopon
Supervisor Dr. P. Abdul Salam

*A PSO Based Probabilistic Load Flow
Approach for Minimization of the
Load Shedding by Optimal Capacitor
Placement in the Power Distribution
System*

By Natthaphatr Watthanasiriphuwadech
Supervisor Dr. Jai Govind Singh

*Financial Risk Analysis of Biomass
Power Plant: A Case Study of
Sungnoen Rice Husk Power Plant in
Nakornratchasima*

By Klairung Kositthanasarn
Supervisor Dr. Charles O. P. Marpuang

*A Study on Measures Towards Green
Building: A Case Study of the AIT
Energy Building*

By Supan Thonprom Supervisors Dr. Jai
Govind Singh, Prof. Sivanappan Kumar



Chapter 5.5: SERD ENVIRONMENTAL ENGINEERING MANAGEMENT FIELD OF STUDY

5.5.1 Introduction

Environmental Engineering at AIT began in 1964 with the need for sanitary engineering to address the problems of providing adequate water supplies and sanitation facilities. This pioneering environmental engineering program has grown into a range of fields needed to tackle the environmental issues facing Asia today.

Environmental Engineering and Management Field of Study is part of the School of Environment, Resources and Development. The overall program looks for solutions to environmental problems, water supply and sanitation, wastewater treatment and disposal systems, air pollution, solid and hazardous wastes, waste minimization, and life cycle assessment, environmental impact assessment and management and environmental toxicology. The three major focal areas are Environmental Technology and Management, Environmental Toxicology, Technology and Management, and Water and Wastewater Engineering

5.5.2 Research Facilities and Laboratories

The Environmental Engineering (EE) Laboratory is housed with facilities to handle a wide range of knowledge and skills in problem solving for industrial needs and analytical works for physical, chemical, microbiological, and environmental parameters such as water and wastewater quality, air pollutants and noise level, and solid waste. For teaching, training and research purposes, the EE laboratory is categorized into three sub-laboratories namely, research, ambient, and environmental research station. The research laboratory is equipped with many sophisticated instruments such as GC-IRD-MSD, HPLC, UV-Vis spectrophotometers, atomic absorption analyzer with flame, graphite and cold vapor operations, and gas and liquid chromatographs. For lab and pilot scale testing purposes, the ambient laboratory has furnished with facility to conduct experiments for treating sludge, sewage, air toxics and industrial wastes. It is also housed with advanced water and wastewater treatment units such different membrane bioreactors, and high rate anaerobic treatment processes with methane gas recovery. The Environmental Research Station

consists of pilot scale aerobic and anaerobic biological wastewater treatment units, constructed wetlands, waste stabilization ponds, a lysimeters for solid waste treatment, a hazardous wastewater treatment plant and ambient air monitoring station.

Among its major equipment include Gas Chromatograph; High Performance Liquid Chromatograph; Atomic Absorption Spectrometer; Total Organic Carbon Analyzer; Ion Chromatograph, Induced Couple Plasma, UV Spectrophotometer; Supercritical Fluid Extractor; Microwave Digestion System ; Primus Thermal Cyclers ; Universal Mutation Detection System; Microscope; Microbalance; Microcentrifuge.

5.5.3 Faculty and Research Staff

Full-time Faculty

AJIT P ANNACHHATRE, BTech, PhD, Indian Inst of Tech, Kanpur, India.

Professor (*Anaerobic Wastewater Treatment; Biofilm Processes; Environmental Biotechnology; Environmental Impact Assessment; Mathematical Modeling*)

CHETTIYAPPAN VISVANATHAN, BTech, IIT, Madras, India; MEng, AIT,

Thailand; PhD, Inst Natl Polytech, Toulouse, France.

Professor (Cleaner Production; Industrial Environment Management; Membrane Technology for Water and Wastewater Treatment and, Solid Waste Management)

SAID IRANDOUST, MSc, PhD, Chalmers University of Technology, Sweden **Professor** (*Chemical Reaction Engineering*)

NGUYEN THI KIM OANH, Dip Eng, Odessa Hydrometeorology Inst, Ukraine; MEng, DEng, AIT, Thailand.

Professor (*Air Pollution Engineering and Management, Transboundary air pollution, Air Pollution and Climate Interaction/Co-benefit, Environmental Monitoring and Modelling, Exposure Assessment, Integrated Industrial Environment Management*)

OLEG V SHIPIN, PhD, Inst of Biochemistry and Physiology of Microorganisms, Moscow, Russia.

Associate Professor (*Ecological Engineering for climate change adaptation; Environmental Impact Assessment; Microbial biotechnology and nanotechnology; Natural systems (ponds and wetlands) as Wastewater treatment systems; Microbial aspects of Environmental Engineering; Health and Ecological Risk assessment*)

PREEDA PARKPIAN, BSc, Kasetsart Univ, Thailand; MSc, Mississippi State Univ; PhD, Texas A&M Univ, USA.

Associate Professor (*Ecotoxicology; POPs; Heavy Metals; Micronutrient Chemistry; Remediation of Polluted Soil and Water*)

THAMMARAT KOOTATEP, BEng, Chiangmai Univ; MEng, DEng, AIT, Thailand.

Assistant Professor (*Decentralized Waste and Wastewater Treatment Systems;*

Sustainable Sanitation; Eco-engineering Technology for Waste and Wastewater Treatment and Management; Environmental Health and Sanitation)

Visiting and Adjunct Faculty

CHONGRAK POLPRASERT, BEng, Chulalongkorn Univ, Thailand; MEng, AIT, Thailand; PhD, Univ of Washington, USA.

Adjunct Faculty (Hazardous Waste Engineering; Resources Recovery; Sanitation)

HATHAIRATANA GARIVAIT, BS (Science de la structure et de la matiere), Ms (Chimie Physique), University of Paris 7, France; DTechSc, AIT, Thailand.

Adjunct Faculty (Statistics and Environmental Management Systems)

JENS PETER THOMSEN, Cand. scient, University of Copenhagen and Aarhus, Denmark.

Adjunct Faculty (Ecotoxicology as a Tool in Environmental Management)

KARE HELGE KARSTENSEN, BS, MS, University of Oslo; MBA, Heriott Watt University, UK; MLaw, University of Oslo; Dr.Sc, Norwegian University of Science and Technology, Trondheim, Norway.

Visiting Faculty (Sustainable Management of Industrial and Hazardous Wastes; Management of Hazardous Chemicals, POPs and Obsolete Pesticides; Sustainable Production of Cement and Co-Processing of Alternative Fuel and Raw Materials and Hazardous Wastes; Control and Minimization of unintentionally produced POPs (dioxins, furans, PCBs and HCB) and application of Best Available Technologies & Best Environmental Practices (BAT/BEP)

KIMBERLY NEIL IRVINE, BSc, Toronto Univ, Canada; MSc, PhD, McMaster Univ, Canada.

Adjunct Professor (Hydrology and Water Resource Management, with specific emphasis on evaluating water quality in urban-impacted water bodies)

SHINICHI OKAMOTO, BEng, MEng, DEng, Waseda Univ, Japan.

Visiting Professor (Statistics and Environmental Management Systems)

Affiliated Faculty

KHUNYING MATHUROS RUCHIRAWAT, PhD, Massachusetts Institute of Technology, USA.

Affiliated Faculty (Nutrition Biochemistry and Metabolism)

SKORN MONGKOLSUK, PhD, University of Maryland, USA.

Affiliated Professor (Biological Science)

JUTAMAAD SATAYAVIVAD, PhD, Mahidol University, Thailand.

Affiliated Faculty (Pharmacology)

Research Staff

AJAYA SAPKOTA, BSc

Research Assistant (*Conducts lab experiments and assist students in their lab activities; assist project leader with research project, training activity*)

ALBERTO E. PEDRAJAS, MEng

Research Associate (*Manages research projects, prepares technical reports and presentations*)

ALFREDO ANCENO, PhD

Research Scientist (*Conducts lab experiments and assist students*

in their lab activities; assist project leader with research project, training activity, writes project proposals)

AMILA ABEYNAYAKA, MEng

Research Associate (*Manages research projects, prepares technical reports and presentations*)

ANAND DESHMUKH, MSc

Research Associate (Manages research projects, prepares technical reports and presentations)

ANCY R. JOHNSON, MSc

Research Associate (*Manages research projects, prepares technical reports and presentations*)

ANTOINE MOREL, MEng

Senior Research Associate (Assists in project coordination, prepares project reports, prepares project budgets and manages project finances, support project leader in supervision of AIT and NCCR master and doctoral students and trainees in the field of environmental sanitation)

AROSHA S. KUMARAGE, BA

Research Assistant (Financial management and assist the team in regular research project and training activities) Manages research projects, prepares technical reports and presentations)

ASIF IQBAL, MEng

Research Associate (Manages research projects, prepares technical reports and presentations)

ATITAYA PANUVATVANICH, DEng

Senior Research Associate, (Manages research projects; assists in project coordination, prepares project reports, prepares project budgets and manages project finances; assist team leader in training activities)

AUNG ZAW NAING LIN, MSc

Research Associate (Actively involve in Asian Regional Research Programme on Environmental Technology Program (ARRPET) research activities)

CHAIYAPORN IMSAPSANGWORN, BSc

Senior Technician (Assess laboratory routine testing and analysis, maintain the operation of the laboratories, instruments and equipment, chemical and lab preparation for EEM laboratories sessions, data collection and fieldwork assistance to students and research staff)

CHUTHATHIP SIRIPONG, MEng

Research Associate (Manages research projects, prepares technical reports and presentations)

DO THI THANH CANH, MSc

Research Associate (Manages research projects, prepares technical reports and presentations)

JACQUELINE KNEE, MSc.

Research Fellow (Manages research projects, prepares technical reports and presentations)

JAVKHLAN ARIUNBAATAR, MSc

Research Associate (Manages research projects, prepares technical reports and presentations)

JEERAPUN TANUNCHAI, BSc

Research Assistant (Laboratory operating and sample analysis, prepares technical reports and presentations, collaborating with research partners)

JIDAPA KHATIKARN, MEng

Research Associate (Manages research projects, prepares technical reports and presentations)

KAUSHALYA C. WIJEKON, MEng

Research Associate (Manages research projects, prepares technical reports and presentations)

KETSIRI LEELASAKULTUM, MSc

Research Associate (Manages research projects on diesel particulate matter and air pollutants analysis; prepares technical reports and presentations)

MADDALA PADMASRI, MEng

Research Associate (Manages research projects, prepares technical reports and presentations)

MAI THI THUY PHUONG, MSc

Research Associate (Manages research projects on diesel particulate matter and air pollutants analysis; prepares technical reports and presentations)

MANOJ YOMJINDA, MSc

Research Laboratory Supervisor (Supervises instrumentation and data acquisition, calibration and maintenance of analytical instruments, assistant to senior laboratory supervisor for such as teaching, lab management)

NANG HTAY YIN, MSc

Research Associate (Manages research projects, prepares technical reports and presentations)

NARISSARA KAEWPHAN

BSc

Research Assistant (Conducts lab experiments and assists students in their lab activities; assist project leader with research project, training activity)

NARONG SURINKUL, DEng

Senior Research Engineer, (Manages research projects; assists in project coordination, prepares project reports, prepares project budgets and manages project

finances; assist team leader in training activities)

NAVARATNAM C. USHANTHI, BEng

Research Assistant (Conducts lab experiments and assists students in their lab activities; assist project leader with research project, training activity)

NEERAYA RATTANASTACHAN, MEng

Research Associate (Manages research projects, prepares technical reports and presentations)

NGUYEN THANH HANG, MSc

Research Associate (Manages research projects, prepares technical reports and presentations)

ORATHAI KLUBBARNKOH, BSc

Senior Technician (Chemistry and environmental analysis for environmental samples as well as prepare for chemical and glassware for laboratory courses and research projects)

PANNAWEE MEKWICHAI, MSc

Research Associate (Manages research projects, prepares technical reports and presentations)

PANNITA SUTTISAWAD, BEng

Research Assistant (Laboratory operating and sample analysis, prepares technical reports and presentations, collaborating with research partners)

PANUPONG BOONYANUN, BTech (Mech.)

Senior Technician (Responsible for the repair and maintenance of related machines, assists students in laboratory experimental work and experimental set-up, carry out routine maintenance and repair of laboratory equipment and facilities)

PATTARAWAN
CHULARUENGOAKSORN, MSc

Research Associate (Manages research projects, prepares technical reports and presentations)

PIMLUCK KIJJANAPANICH, MSc

Research Associate (Manages research projects, prepares technical reports and presentations)

PRAPAT PONGKIATKUL, DEng

Senior Research Engineer, (Manages research projects on air pollution; assists in project coordination, prepares project reports, prepares project budgets and manages project finances; assist team leader in training activities)

PREM ANANTH ANIYARANGAN, MEng

Senior Research Associate (Manages research projects, prepares technical reports and presentations)

PREMSAK PUANGPLOY, MSc

Research Associate (Manages research projects, prepares technical reports and presentations)

PUTTIMON KAIWAN-ARPORN, MSc

Research Associate (Manages research projects, prepares technical reports and presentations)

RAQUEL P. PEDRAJAS, MEng

Senior Research Associate (Assists in project coordination, prepares project reports, budgets and manages project finances, assists in maintenance of project websites, organizes international workshops, conference, training programs and seminars, prepares project brochures, posters, etc., assists in formulation of research proposal, co-edits project newsletters, assists evaluation of reports from National Research Institutions involved in the project)

RATTAPON ONCHANG, Dr.-techn.

Visiting Researcher (Manages RTG research project, prepares technical reports and serves as committee member for master thesis) SALAYA PHUNSIRI, MSc

Senior Laboratory Supervisor (Administrative for Environmental Engineering Laboratory as well as supervise for experimental and research projects on water, wastewater, air pollution, and solid wastes analysis)

SAMBIT ROURAY, MSc

Research Associate (Manages research projects, prepares technical reports and presentations)

SANJEET AMATYA, MEng

IT Officer (Manages research projects, prepares technical reports and presentations)

SIN KHANNDARITH, MEng

Research Associate (Manages research projects, prepares technical reports and presentations)

SOMCHAI AREMSUM-ANG, BSc

Research Assistant (Wastewater and soil analysis, field survey and data collection, testing and other laboratory sessions)

SRUNG SMANMOO, PhD

Visiting Researcher (Manages RTG research project, prepares technical reports and serves as committee member for master thesis)

SUPARATTANA SURIYAKHAM, BEng

Research Assistant (Laboratory operating and sample analysis, prepares technical reports and presentations, collaborating with research partners)

SUTHIRAT KITTIPONGVISES, MSc
Research Associate (Manages research projects on hazardous chemical management; assist the project leader in training activities; prepares technical reports and presentations)

SYARIFAH HIKMAH JULINDA SARI, MSc

Research Associate (Manages research projects, prepares technical reports and presentations)

TANTIMA SUWANNAPAN, BSc

Research Assistant (Conducts lab experiments and assists students in their lab activities; assist project leader with research project, training activity)

THANUN POONSAWAT, MEng

Research Associate (Manages research projects, prepares technical reports and presentations)

THEERADEJ BOONMA-NGUM, BSc

Research Assistant (Conducts lab experiments and assists students in their lab activities; assist project leader with research project, training activity)

VENKATAPPA MANJUNATHA, MSc

Research Associate (Manages research projects, prepares technical reports and presentations)

WALAI PORN SIRIRATWATTHANA, MSc

Research Associate (Manages research projects, prepares technical reports and presentations)

WIJITTRA SANSUD, BSc

Senior Technician (Manages laboratory chemical and equipment inventory; issue chemical and

equipments for students; conduct water analysis; assist in organizing laboratory sessions)

5.5.4 Grants and Sponsored Research Completed in 2011

Asian Regional Research

Programme on Environmental Technology (ARRPET): Phase II

Duration: 1-Jan-04 30-Jun-11

Project Investigator(s): Ajit P.

Annachhatre

Sponsor: Swedish International Development Cooperation Agency, Sweden

Total Contracted Amount

(THB):8,827,225

Asian Regional Research

Programme on Environmental Technology (ARRPET): Phase II

Duration: 1-Jan-04 30-Jun-11

Project Investigator(s): C. Visvanathan

Sponsor: Swedish International

Development Cooperation Agency, Sweden

Total Contracted Amount

(THB):8,258,700

Asian Regional Research

Programme on Environmental Technology (ARRPET): Phase II

Duration: 1-Jan-04 30-Jun-11

Project Investigator(s): Ajit P.

Annachhatre

Sponsor: Swedish International

Development Cooperation Agency, Sweden

Total Contracted Amount

(THB):24,641,185

Asian Regional Research

Programme on Environmental Technology (ARRPET): Phase II

Duration: 1-Jan-04 30-Jun-11

Project Investigator(s): Ajit P.

Annachhatre

Sponsor: Swedish International

Development Cooperation Agency, Sweden

Total Contracted Amount

(THB):8,599,710

Asian Regional Research

Programme on Environmental Technology (ARRPET): Phase II

Duration: 1-Jan-04 30-Jun-11

Project Investigator(s): Ajit P.

Annachhatre

Sponsor: Swedish International

Development Cooperation Agency, Sweden

Total Contracted Amount

(THB):3,405,000

Asian Regional Research

Programme on Environmental Technology (ARRPET): Phase II

Duration: 1-Jan-04 30-Jun-11

Project Investigator(s): Ajit P.

Annachhatre

Sponsor: Swedish International

Development Cooperation Agency, Sweden

Total Contracted Amount (THB):

9,327,400

Asian Regional Research

Programme on Environmental Technology (ARRPET): Phase II

Duration: 1-Jan-04 30-Jun-11

Project Investigator(s): Ajit P.

Annachhatre

Sponsor: Swedish International

Development Cooperation Agency, Sweden

Total Contracted Amount

(THB):29,492,630

**Asian Regional Research
Programme on Environmental
Technology (ARRPET): Phase II**

Duration: 1-Jan-04 30-Jun-11
Project Investigator(s): Ajit P.
Annachatre Sponsor: Swedish
International Development Cooperation
Agency, Sweden
Total Contracted Amount
(THB):8,999,735

**Asian Regional Research
Programme on Environmental
Technology (ARRPET): Phase II**

Duration: 1-Jan-04 30-Jun-11
Project Investigator(s): Nguyen Thi Kim
Oanh, Chongrak Polprasert
Sponsor: Swedish International
Development Cooperation Agency,
Sweden
Total Contracted Amount
(THB):28,262,965

**Asian Regional Research
Programme on Environmental
Technology (ARRPET): Phase II**

Duration: 1-Jan-04 30-Jun-11
Project Investigator(s): Nguyen Thi Kim
Oanh, Chongrak Polprasert
Sponsor: Swedish International
Development Cooperation Agency,
Sweden
Total Contracted Amount
(THB):10,012,643

**Asian Regional Research
Programme on Environmental
Technology (ARRPET): Phase II**

Duration: 1-Jan-04 30-Jun-11
Project Investigator(s): C.
Visvanathan
Sponsor: Swedish International
Development Cooperation Agency,
Sweden

Total Contracted Amount
(THB):20,498,695

**Capacity Strengthening on
Hazardous Chemicals Management**

Duration: 1-Jan-07 30-Sep-11
Project Investigator(s): Nguyen Thi Kim
Oanh, Chongrak Polprasert
Sponsor: The Norwegian Ministry of
Foreign Affairs
Total Contracted Amount
(THB):23,732,687

**A Euro-Asia Partnership for the
Development of Human Resource
Capacity for Engineering in
Afghanistan**

Duration: 15-Sep-08 31-Jul-11
Project Investigator(s): Oleg Shipin
Sponsor: European Commission
Total Contracted Amount (THB):
4,231,730

**Integrated Sustainable Solid waste
Management in Asia**

Duration: 1-Jan-09 30-Jun-11
Project Investigator(s): C.
Visvanathan Sponsor: European
Commission Total Contracted
Amount (THB): 2,449,490

**Database of 3R Good Practices
related to Organic Waste**

Duration: 20-Jan-10 30-Apr-11
Project Investigator(s): C Visvanathan
Sponsor: Mitsubishi Research Institute
Total Contracted Amount (THB):
978,544

**Innovative Sanitation approach by
Coupling of Ecological reuse system
with Health risks determination**

Duration: 1-May-10 30-Apr-11 Project
Investigator(s): Thammarat Koottatep
Sponsor: NCCR North-South Center for
Development and Environment

Total Contracted Amount (THB):
1,400,000

**Policy Study on Technology Transfer
for 3R**

Duration: 1-Jul-10 30-Sep-11
Project Investigator(s): C Visvanathan
Sponsor: Institute for Global
Environmental Strategies, Japan
Total Contracted Amount (THB):
640,000

**Pilot scale study on surface water
treatment using hybrid ceramic
membrane filtration system**

Duration: 2-Apr-10 31-Jul-11
Project Investigator(s): C Visvanathan
Sponsor: University of Tokyo Japan
Total Contracted Amount (THB):
698,000

**Present status of Sewage
dissemination in Thailand and the
applicability of UASB DHS (Up flow
anaerobic sludge blanket down
flow hanging bed sponge)**

Technology to Thailand
Duration: 1-Jan-11 30-Nov-11
Project Investigator(s): C Visvanathan
Sponsor: University of Tohoku
Total Contracted Amount (THB):290,000

**5.5.5 On-going Grants and
Sponsored Research**

**Environmental Sanitation and
Urban Agriculture**

Duration: 25-Sep-02 30-Jun-13
Project Investigator(s): Thammarat
Koottatep Sponsor: Department of
Water and Environmental Sanitation in
Developing Countries (SANDEC),
Switzerland
Total Contracted Amount (THB):
23,387,417

Permeable Reactive Barrier for Remediation of Acid Mine Drainage

Duration: 1-Nov-09 31-May-12
Project Investigator(s): Ajit P.
Annachhatre
Sponsor: UNESCO –IHE
Total Contracted Amount (THB):972,270

Sustainable Water Management in Urban Fringe Areas through Industrial Wastewater Reuse

Duration: 1-Mar-10 31-Jan-12
Project Investigator(s): C Visvanathan
Sponsor: French Ministry of Foreign Affairs
Total Contracted Amount (THB): 1,343,441

Comparison Study on Air Pollution Characteristics between Seoul and Bangkok

Duration: 1-Mar-10 31-Dec-12
Project Investigator(s): Nguyen Thi Kim Oanh
Sponsor: Korea Institute of Science and Technology (KIST)
Total Contracted Amount (THB): 860,832

Technical Assistance for the setup of a Credit Facility to support Ecosystems friendly Accommodations in Coastal areas of Thailand

Duration: 25-Mar-10 31-Jan-14
Project Investigator(s): Thammarat Koottatep
Sponsor: French Development Agency AFD
Total Contracted Amount (THB): 1,950,000

Assessment of co benefits on Air Quality and climate resulted from various control strategies in

Southeast Asia

Duration: 1-Aug-10 01-Aug-12
Project Investigator(s): Nguyen Thi Kim Oanh
Sponsor: French Ministry of Foreign Affairs
Total Contracted Amount (THB):1,704,000

Research Mission Trips of AIT Faculty

Duration: 1-Sep-10 31-Aug-12
Project Investigator(s): Ajit P.
Annachhatre
Sponsor: SDCC AIT France Network
Total Contracted Amount (THB): 288,000

Sustainability issues due to Coal Ash from Coal fired Power plants

Duration: 1-Sep-10 31-Aug-12
Project Investigator(s): Ajit P.
Annachhatre
Sponsor: SDCC AIT France Network
Total Contracted Amount (THB): 1,800,000

Strategic Environmental Assessment for North and Central Afghanistan to ensure sustainable use of water resources

Duration: 1-Aug-10 31-Aug-12
Project Investigator(s) Oleg Shipin
Sponsor: British Council UK
Total Contracted Amount (THB): 2,328,000

Database of 3R Good Practices related to Medical Waste Management

Duration: 27-Jan-11 21-Mar-12
Project Investigator(s): C Visvanathan
Sponsor: Mitsubishi Research Institute,Japan
Total Contracted Amount (THB):600,000

Professional Masters in Environmental Management

Duration: 1-May-10 29-Feb-12
Project Investigator(s): Nguyen Thi Kim Oanh
Sponsor: Multi donors
Total Contracted Amount (THB):3,355,779

Affordable Sanitation as an adaptive strategy to emerging waterborne diseases due to Climate change

Duration: 1-Jul-11 30-Jun-12
Project Investigator(s): Thammarat Koottatep
Sponsor:Asia Pacific Network for Global Change Research (APN)
Total Contracted Amount (THB): 1,291,950

Assessment of Fecal sludge rheological properties

Duration: 5-Aug-11 15-Feb-12
Project Investigator(s): Thammarat Koottatep
Sponsor:Bill & Melinda Gates Foundation
Total Contracted Amount (THB): 1,456,960

Sustainability Workshops: Integrative Approaches in Sustainable Water and Food Management through Intensive Program on Sustainability (IPoS) 2011

Duration: 1-Jul-11 30-Jun-12
Project Investigator(s): Thammarat Koottatep
Sponsor: University of Tokyo, Japan
Total Contracted Amount (THB): 1,112,640

Policy study on Technology Transfer for 3R (ARCRP FY 2011) Duration: 5-

Jun-11 30-Jun-12

Project Investigator(s): C Visvanathan
Sponsor: Institute of Global
Environmental Strategies (IGES).
Total Contracted Amount (THB):
380,000

Outreach on Environmentally sound treatment of Hazardous chemicals in Asia

Duration: 1-Jul-11 30-Jun-14
Project Investigator(s): Nguyen Thi Kim Oanh
Sponsor: The Norwegian Ministry of Foreign Affairs
Total Contracted Amount (THB):9,291,686

Reuse of Treated Effluent from Bangkok Wastewater treatment plants

Duration:22-Aug-11 13-Sep-12
Project Investigator(s): Thammarat Koottatep
Sponsor: Kasetsart University
Total Contracted Amount (THB): 600,000

Professional Masters in Environmental Engineering Batch II

Duration: 1-Sep-11 31-Dec-12
Project Investigator(s): Nguyen Thi Kim Oanh
Sponsor: Multi donors
Total Contracted Amount (THB): 2,446,150

TheNinth International Symposium on South east Asian Water Environment

Duration: 1-Sep-11 31-Mar-12
Project Investigator(s): C Visvanatha
Sponsor: University of Tokyo,Japan
Total Contracted Amount (THB): 173,678

3R Knowledge Hub II

Duration: 1-Oct-11 30-Nov-12
Project Investigator(s): C Visvanathan
Sponsor:Asian Development Bank
Total Contracted Amount (THB):2,117,969

Pilot Scale study on maximum recovery of the filter backwash water by using pilot ceramic membrane filter (CMF)

Duration: 1-Jan-12 31-Jan-13
Project Investigator(s): C Visvanathan
Sponsor: University of Tokyo Japan
Total Contracted Amount (THB): 414,704

Review and improve extend and augment the functions and contents of the 3RKH website

Duration: 13-Jan-12 31-Mar-13
Project Investigator(s): C Visvanathan
Sponsor: Mitsubishi Research Institute,Japan
Total Contracted Amount (THB): 634,400

5.5.6 Publications

International Journal Articles with Impact factor

S. Baruah, C.Ortinero, O.Shipin and J. Dutta. 2012. Manganese doped zinc sulfide quantum dots for detection of *Escherichia coli*. *Journal of Fluorescence*, 22, 403-408 (*Impact Factor 1.966*)

Ariuntuya Tserendorj, A. Anceno, E. Houpt, C. Icenhour

O. Sethabutr, C. Mason and O. Shipin. 2011. Molecular techniques in eco-health research toolkit: a case

of facilitated estimation of aggregate burden of waterborne gastroenteritis in a periurban landscape. *Journal of EcoHealth*. Published Dec 7 on line first (*Impact Factor 2.03*)

Doug-Won Seo, Seung-Hwan Lee, O. Shipin and Dong-Jin Kim. 2011. Free nitrous acid selectively inhibits and eliminates nitrite oxidizers from the granules of nitrifying sequencing batch reactor, *Bioprocess and Biosystems Engineering*. Published on line first 28 Aug 2011 (*Impact factor 2.06*)

A. Sapkota, A. Anceno, S. Baruah, O. Shipin and J. Dutta. 2011. Zinc oxide nanorod mediated visible light photoinactivation of model microbes in water. *Nanotechnology*, 22, 21 (*Impact factor 3.4*),

C. Thuithaisong, P. Parkpian, O. Shipin, R. Shrestha, K. Naklang, R. DeLaune and A. Jugsujinda. 2011. Soil quality indicators for predicting sustainable organic rice production. *Communications in Soil Science and Plant Analysis*, 42, 5, 548-568 (*Impact factor 0.619*), *Taylor and Francis publishing*

Kijjanapanich P., Lens P.N.L. and Annachatre A. P. "Electron donors for treating acid mine drainage by using permeable reactive barrier", *Environmental Technology* (accepted)

Puttimon Kaiwan-arporn, Pham Dong Hai, Nguyen Thi Thu and

Annachatre A.P. "Cultivation of Cyanobacteria for Extraction of Lipids", *Biomass and Bioenergy Journal* (accepted)

Pimluck Kijjanapanich, Annachatre, A. P., and Piet N.L. Lens, "Biological sulfate reduction for treatment of gypsum contaminated soils, sediments and solid waste" *Critical Environmental Reviews* (submitted)

Linayage, Duminda and Annachatre, A. P., "Reuse options for bottom ash and fly ash from coal fired power plants" *Waste Management Journal* (submitted)

S. Jothiganesh, S. Vongdeuane and C. Visvanathan, "Geographic Information System based Healthcare Waste Management Planning for Treatment Site Location and Optimal Transportation Routing" Accepted for publication in *J. Waste Management and Research*, 2011

C. Visvanathan and Prakriti Kashyap, "Effective Policy Framework for the Promotion of 3R Technology Transfer" Accepted for publication in *Int. J. Environmental Technology and Management*, 2011. A. Abeynayaka and C. Visvanathan and, "Performance comparison of mesophilic and thermophilic aerobic side stream MBR treating high strength wastewaters" *J of Bioresource Technology*, 102, 5345-5352, 2011.

A. Abeynayaka and C. Visvanathan and, "Mesophilic and thermophilic aerobic batch biodegradation, utilization of carbon and nitrogen sources in high strength wastewater, *J of Bioresource Technology*, 102, 2358-2366, 2011.

C. Visvanathan and A. Abeynayaka, "Development and future potentials of anaerobic membrane bioreactors" *J. Membrane Water Treatment*, Accepted for publication.

R. Rattanaoudom and C. Visvanathan, "Removal of PFOA by Hybrid Membrane Filtration using PAC and Hydrotalcite" *J. Desalination and Water Treatment*, 32, 262-270, 2011.

S. Jamal Khan, C. Visvanathan and V. Jegatheesan, "Effect of powdered activated carbon (PAC) and cationic polymer on biofouling mitigation in hybrid MBRs, Accepted for publication in *J. Bioresource Technology*, 2011.

Ina Körner and C. Visvanathan, "Perspectives of Composting and Anaerobic Digestion Technologies for the treatment of organic fraction of Municipal Solid Waste in Europe and Asia", accepted for publication in *IJEWM*.

A. Hata, H. Katayama, M. Kitajima, C. Visvanathan, C. Nol, and H. Furumai "Validation of Internal Controls for Nucleic Acid Extraction and Amplification of Enteric Viruses in Water Samples" accepted for

publication in *Applied Environmental Microbiology*

C. Visvanathan, "Business and Employment Opportunities in Waste Management and Recycling in Asia" editorial note, *J. Waste Management*, 31, 1083-1084, 2011

K.C. Wijekoon, C. Visvanathan and A. Abeynayaka, "Effect of organic loading rate on VFA Production, organic matter removal and microbial activity of a two stage thermophilic anaerobic membrane bioreactor" *J of Bioresource Technology*, 102, 5353-5360, 2011.

J. Nithikul, O.P. Karthikeyan and C. Visvanathan, "Reject management from a mechanical biological treatment plant in Bangkok, Thailand" *J. Resources, Conservation and Recycling*, 55, 417-422, 2011.

S. Jamal Khan, Shazia Ilyas, Sadaf Javid, **C. Visvanathan** and V. Jegatheesan, "Performance of Suspended and Attached Growth MBR Systems in Treating High Strength Synthetic Wastewater, *Bioresource Technology*, 102, 5331-5336, 2011

Nga D.T, Morel, A., Hung, N.V., Phuc, P.D., Nishida, K., Kootattep, T. (2011). Assessing nutrient fluxes in a Vietnamese rural area despite limited and highly uncertain data. *Resour Conserv Recy*, doi:10.1016/j.resconrec.2011.04.008

L. K. Sahu, Y. Kondo, Y. Miyazaki, Prapat Pongkiatkul and N. T. Kim Oanh (2011). Seasonal and diurnal variations of black carbon and organic carbon aerosols in Bangkok. *JGR*, VOL. 116, D15302, doi:10.1029/2010JD015563, 2011.

Amornpon Changsuphan, Muhammad Ikram and Nguyen Thi Kim Oanh (2011). Removal of benzene by ZnO nanoparticles coated on porous adsorbents in presence of ozone and UV. *Chemical Engineering Journal*. doi:10.1016/j.cej.2011.11.064.

Muhammad Ikram, Amornpon Changsuphan, Nguyen Thi Kim Oanh and Azhar Abdul Halim (2011). Potential Use of a Combine Ozone and UV over Zeolite Coated with ZnO Nanoparticles for Gases Benzene Elimination. *Australian Journal of Basic and Applied Sciences*, 5(5): 191-200, 2011.

Nguyen Thi Kim Oanh and Ketsiri Leelasakultum (2011). Analysis of Meteorology and Emission in Haze Episode Prevalence over Mountain-Bounded Region for Early Warning. *Science of the Total Environment* 409 (2011) 2261–2271.

Asif Iqbal and Nguyen Thi Kim Oanh (2011). Assessment of Acid Deposition over Dhaka division Using CAMx-MM5 Modeling System. *Journal of Atmospheric Pollution Research*. DOI 10.5094/APR.2011.05.

Prapat Pentamwa, Nuntakan Kanaratanadilok, Nguyen Thi Kim Oanh (2011). Indoor Pesticide Application Practices and Levels in Homes of Bangkok Metropolitan Region. *Journal of Environmental Monitoring and Assessment*. DOI 10.1007/s10661-010-1834-4.

Shindell D, Kuylenstierna Johan C. I., Vignati E, van Dingenen R, Amann M, Klimont Z, Anenberg S C, Muller N, Janssens-Maenhout G, Raes F, Schwartz J, Faluvegi G, Pozzoli L, Kupiainen K, Höglund-Isaksson L, Emberson L, Streets D, Ramanathan V, Hicks K, Kim Oanh NT, Milly G, Williams M, Demkine V, and Fowler D (2011). Simultaneously Mitigating Near-Term Climate Change and Improving Human Health and Food Security. *Science*. doi:10.1126/science.1210026

Conference Publication

S. Nanda, P. Dash, O. Shipin, T. Dash. 2011. Use of GIS in Strategic Environmental Assessment of IWRM plans: Potential for Afghanistan. *International Conference on Modern Environmental Management and Technologies*, Kabul, Afghanistan. 16-19 April 2011 (Oral presentation)

H. Habib, A. Anceno, V.Nittivatananon, O. Shipin 2011. Achieving sustainable use of water resources in Afghanistan via strategic environmental assessment and allied approaches. *International Conference on Modern Environmental Management and*

Technologies, Kabul, Afghanistan. 16-19 April 2011

Books and Monographs

Book Chapters

Papers in Workshops

5.5.7 Doctoral Students' Dissertation

Enhanced Bioremediation of Trichloroethylene (TCE) Contaminated Soil Using Sequential Anaerobic-Aerobic Composting Strategies

By Supat Ponza

Supervisor Dr. Preeda Parkpian, Prof. Chongrak Polprasert

Microbial Diversity as a Biological Indicator of Soil Quality for Sustainable Organic Rice Farming By Chunchara Thuithaisong

Supervisor Dr. Preeda Parkpian, Dr. Oleg Shipin

Estrogenic Activities of Sesame Lignans and Their Metabolites: Interactive Effect with Cadmium in Human Breast Cancer Cell Lines

By Prisma Pianjing

Supervisor Dr. Jutamaad Satayavivad, Dr. Apinya Thiantanawat, Dr. Preeda Parkpian

Membrane Hybrid System for Removal of PFOS and PFOA in Industrial Wastewater: Application of Conventional Adsorbents and Nanoparticles

By: Romchat Rattanaoudom

Supervisor Dr. Jutamaad Satayavivad, Prof. Chettiyappan Visvanathan

Remediation of TNT-Contaminated Water and Soil with Nanoscale Zero Valent Iron Particles

By Waraporn Jiamjitpanich
Supervisor Prof. Chongrak Polprasert,
Dr. Preeda Parkpian

*Assessment of Effects from Crop
Residue Field Burning on Particulate
Matter Air Quality in Thailand*

By Thongchai Kanabkaew
Supervisor Prof. Nguyen Thi Kim Oanh

*Risk Assessment of Enteric
Pathogens in a Tropical Urban Canal
Network*

By Ariuntuya Tserendorj
Supervisor Dr. Oleg Shipin

*Assessing the Sustainability of
Agricultural Soils under Acid
Deposition in the Northeast Region
of Thailand*

By Rab Nawaz
Supervisor Preeda Parkpian

5.5.8 Masters Students' Theses

*Pilot Scale Studies on Membrane
Based Industrial Wastewater Reuse
Application in Ho Chi Minh City,
Vietnam*

By Tra Van Tung
Supervisor Prof. Chettiyappan
Visvanathan

*Assessing Carbon Flow in
Environmental Sanitation Systems in
Two Communes, Vietnam*

By Ho Thi Thanh Tam
Supervisor Dr. Thammarat Koottatep

*Resulted from Various Combinations
of Climate and Emission Scenarios*

By Manatchanok Tantiphiphatthana
Supervisor Prof. Nguyen Thi Kim Oanh

*Assessments of Plastic Waste
Recycling and Management: A Case
Study of Bangkok*

By Panruthai Chaiyasit
Supervisor Dr. Thammarat Koottatep

*Membrane Technology Based Hybrid
System to Remove Paraquat from
Agricultural Run-Off Water*

By Chatcharee Lerdsirivichai
Supervisor Prof. Chettiyappan
Visvanathan

*Monitoring of On-Road and
Roadside Air Quality in Bangkok*

*Metropolitan Region for Assessment
of Vehicle Emission and Associated
Health Risk*

By Jira Kongpran
Supervisor Prof. Nguyen Thi Kim Oanh,
Dr. Preeda Parkpian

*Application of the Bilan Carbone
Model to Mitigate Greenhouse
Gases Emissions in AIT Campus*

By Chutiya Lamkitcha
Supervisor Prof. Chettiyappan
Visvanathan

*Electron Donor for Heavy Metal
Removal from Acid Mine Drainage
(AMD) through Permeable Reactive
Barrier (PRB)*

By Kitiya Pakdeerattanamit
Supervisor Prof. Ajit Annachhatre

*Influence of Dissolved Organic
Matter in Ceramic Membrane
Filtration Performance in Drinking
Water Treatment*

By Nunthaporn Monthakanti
Supervisor Prof. Chettiyappan
Visvanathan

*Permeable Reactive Barrier for
Remediation of Groundwater Nitrate
in Drinking Water*

By Varinporn Asokbunyarat
Supervisor Prof. Ajit Annachhatre

*Assessment of Future Ozone Air
Quality in Bangkok Metropolitan
Region Analysis of Air Quality and
Climate Co-Benefit of Traffic Fleet
Emissions Control Technologies in
Kathmandu Valley*

By. Shreejan Ram Shrestha
Supervisor Prof. Nguyen Thi Kim Oanh

*Methanotrophic Biofilter using
Inorganic Media: Optimization of
Loading Rate and Inlet Gas Humidity*

By. Helayaye Damitha Lakmali
Abeynayaka Supervisor Prof. Ajit
Annachhatre

*Emission Inventory of Passenger
Transport Fleet in Hanoi to Assess Air
Quality and Climate Co-benefits
Associated with Various Technology
Scenarios*

By Tran Thu Tran
Supervisor Prof. Nguyen Thi Kim Oanh

*Application of Strategic
Environmental Assessment to the
Integrated Water Resources
Management Plan in Afghanistan:
Focusing on the Amu Darya River
Basin*

By. Sayed Ajmal Dashti
Supervisor Dr. Oleg Shipin

*Application of Strategic
Environmental Assessment to the
Integrated Water Resources
Management Plan for Kunduz River
Basin (North Afghanistan)*

By. Zabihullah Paiman
Supervisor Dr. Oleg Shipin

Carbon Flow Analysis from Household Activities: A Case Study of Peri-Urban Community in Thailand
By Phaylin Bounmanyvon
Supervisor Dr. Thammarat Koottatep

Assessment of Particulate Matter Air Pollution using Integrated Ground Level and Satellite Monitoring Methods
By Pichnaree Lalitaporn
Supervisor Prof. Nguyen Thi Kim Oanh

Particulate Air Pollution Associated with Vietnam Cement Industry: Current Status and Management Measures
By. Do Hoang Linh
Supervisor Prof. Nguyen Thi Kim Oanh

A Low Cost Technology for Municipal Wastewater Treatment for Halong City, Vietnam
By. Le Van Tuan
Supervisor Dr. Oleg Shipin, Dr Thammarat Koottatep

Using Stabilization Ponds Technology for Wastewater Treatment in An Bai Town in Vietnam
By. Doan Manh Hung
Supervisor Prof. Ajit Annachhatre

Environmental Management Practices in Rubber Processing of Vietnam: Key Study in a Rubber Processing Factory, Daklak Province
By. Nguyen Hoang Phuong
Supervisor Dr. Preeda Parkpian

Public Private Partnership Model for Drinking Water Supply System of Uong Bi Town, Quang Ninh Province, Vietnam

By. Trinh Xuan Duc
Supervisor Dr. Oleg Shipin

Emission Inventory for Offshore Oil and Gas Production in Vietnam
By. Do Thi Thu Phuong
Supervisor Prof. Ajit Annachhatre, Prof. Nguyen Thi Kim Oanh

Perspective of Eco-Industrial Cluster Formation: A Case Study of the Bamboo Industry in Quan Hoa District, Thanh Hoa Province, Vietnam
By Phan Thi Lien Huong
Supervisor Prof. Chettiyappan Visvanathan

Integration of Human Well-being - Biodiversity Nexus into Environmental Management Strategies for Poverty Alleviation in the Wetlands of Myanmar
By Mo Aung Nay Chi
Supervisor Dr. Oleg Shipin

Environmental Business Opportunities in the Healthcare Sector in Hanoi-Vietnam
By. Le Anh Tuan
Supervisor Prof. Chettiyappan Visvanathan

Integrated Solid Waste Management Plan for Herat City, Afghanistan
By. Mohammad Noor Shaida
Supervisor Prof. Chettiyappan Visvanathan

Risk Assessment of Cypermethrin Residue in Suburban Agriculture: A Case Study of Brassica Juncea (L.) and its Growing Soil
By Chinh Thi Nguyen
Supervisor Dr. Preeda Parkpian

Assessment of Long-Term Change of Land-Use in Relation to Climate and Development Conditions: A Case Study for the Coastal Districts of Quang Nam Province, Vietnam
By. Vo Trong Hoang
Supervisor Dr. Preeda Parkpian

Assessment of Long-Term Change of Land-Use in Relation to Climate and Development Conditions: A Case Study for the Coastal Districts of Quang Nam Province, Vietnam
By. Vo Trong Hoang
Supervisor Prof. Nguyen Thi Kim Oanh

Sustainable Development the Balkh River Basin of Northern Afghanistan through Integrated Water Resource Management
By. Aminullah Sadeed
Supervisor Dr. Oleg Shipin

Remediation of PCBs-Heavy Oil Contaminated Soil Using Phytoremediation
By Sudatip Putsri
Supervisor Dr. Preeda Parkpian

Effect of Antimony on UASB Process Performance in Treating Industrial Wastewater
By. Tatchai Pussayanavin
Supervisor Prof. Ajit Annachhatre.

Chapter 5.6: SERD FOOD ENGINEERING AND BIOPROCESS TECHNOLOGY FIELD OF STUDY

5.6.1 Introduction

This field of study focuses on value addition of agricultural commodities by the application of bioconversion in various sectors of industry and agriculture. These include food processing, aquaculture, cosmetics and health care. BPT focuses on the application of microorganism and enzymes to meet the demands of the developing countries of the region. FE focuses on the systems for handling, processing and storage of both durable and perishable food products in developing of small-scale food processing technologies. Emphasis is also placed on the determination of material properties; design and development of new processes and related equipment; and computer modeling and simulation of postharvest and food processing operations.

5.6.2 Faculty and Research Staff

Full-time Faculty

ATHAPOL NOOMHORM, BSc, Kasetsart Univ, Thailand; MEng, Lamar Univ, Texas; PhD, Louisiana State Univ, USA.

Professor and Coordinator (Agro-Industrial Development, Food Process Technology, Post

Harvest Technology, Supply Chain) SUDIP KUMAR RAKSHIT, BSc, Loyola College; BTech,

Jaavpur Univ, India; MTech, PhD, Indian Inst of Tech, India

Professor (*Biochemical Engineering and Biotechnology; Biopolymers and Lipid Biotechnology; Fermentation and Enzyme Technology; Food Biotechnology; Functional Foods*)

Vice President for Research

ANIL KUMAR ANAL, DVM., University of Agriculture, Faisalabad, Pakistan; MSc. and PhD., AIT, Thailand

Assistant Professor (Food Engineering & Bioprocess Technology Field of Study

(*Animal Biotechnology, Food and Pharmaceutical Biotechnology, Dairy and Meat Process Technology, Food Colloids and Biopolymer, Functional Foods, Micro-/Nanoencapsulation, Bionanotechnology*)

Associate Dean for Research & Outreach, School of Environment, Resources & Development

5.6.3 Grants and Sponsored Research Completed in 2011

Networking with French speaking French, Vietnamese and Cambodian universities in the area of bioconversion of lignocellulose residues to ethanol

Duration: 1-Jan-08 31-Aug-11

Project Investigator(s): Sudip Kumar Rakshit

Sponsor: Agence Universitaire de la Francophonie (AUF)

Total Contracted Amount (THB):963,192

International Conference on Innovations in Food Process Technology and Engineering 2008

Duration: 1-Aug-08 31-Dec-11

Project Investigator(s): Athapol Noomhorn

Sponsor: Participants

Total Contracted Amount (THB):650,000

Enabling Bio-innovation for poverty alleviation in Asia

Duration: 8-Mar-08 31-Dec-11

Project Investigator(s): Sudip Rakshit,

Bernadette Resurreccion, Edsel Sajor

Sponsor: International Development Research Centre, Canada

Total Contracted Amount (THB): 17,232,280

Green composites from Soy flour based plastic and Biofibers from agro-industrial byproducts

Duration: 1-Jul-09 30-Jun-11

Project Investigator(s): Athapol Noomhorn

Sponsor: RTG
Total Contracted Amount (THB):
978,000

Residues from Pulp and Paper Industries for Bio-ethanol Production

Duration: 13-Oct-09 12-Oct-11
Project Investigator(s): Sudip K Rakshit
Sponsor: RTG/DA Research Center Co Ltd
Total Contracted Amount (THB):
2,000,000

The Advance International Training Program "Putting Ideas to work strategies for Innovation led Sustainable growth" ITP 2010

Duration: 1-Mar-10 28-Feb-11
Project Investigator(s): Sudip K Rakshit
Sponsor: VINNOVA
Total Contracted Amount (THB):
743,325

UN Policy mitigation project

Duration: 1-Dec-10 30-May-11
Project Investigator(s): Sudip K Rakshit
Sponsor: UNEP ROAP
Total Contracted Amount (THB):599,800

AIT Research Strategy Development

Duration: 1-Jul-10 31-Aug-11
Project Investigator(s): Sudip Kumar Rakshit
Sponsor: SIDA
Total Contracted Amount (THB):1,540,428

CoE SDCC SNV Bhutan AFP Workshop

Duration: 9-Sep-11 30-Dec-11
Project Investigator(s): Sudip K Rakshit
Sponsor: SNV Bhutan
Total Contracted Amount (THB): 20,783

5.6.4 On-going Grants and Sponsored Research

Development of Anti Fungal Acrylic Fibre for Novel Applications

Duration:1-Jan-0930-Jun-12
Project Investigator(s): Sudip Kumar Rakshit
Sponsor: Various
Total Contracted Amount (THB):3,742,632

Asian Project Management support Programme

Duration: 1-Jan-10 30-Jun-13
Project Investigator(s): Sudip K Rakshit, S Venkatesh, Mokbul Ahmad, Kyoko Kusakabe, Philippe Doney
Sponsor: IFAD
Total Contracted Amount (THB):
45,150,000

Production of Bio-Ethanol and Biomaterials from Oil Palm Biomass: A study of feedstock sustainability, technological efficiency and social applicability

Duration: 1-Oct-10 30-Sep-12
Project Investigator(s): Sudip Rakshit, Anil Kumar Anal
Sponsor: SDCC AIT France Network
Total Contracted Amount (THB):
1,440,000

URC TNA Project

Duration: 9-Sep-10 31-May-12
Project Investigator(s): Sudip Kumar Rakshit
Sponsor: UNEP Riso Center Denmark
Total Contracted Amount (THB):
4,516,024

Facilitating the Bi Regional EU-ASEAN Science and technology Dialogue

Duration: 1-Nov-10 31-Dec-12
Project Investigator(s): Sudip K Rakshit
Sponsor: SEA-EU-NET

Total Contracted Amount (THB):3,586,212

SYKE - Policy Learning

Duration: 1-May-11 05-Jan-12
Project Investigator(s): Sudip K Rakshit, Sangam Shrestha
Sponsor: Ministry of Foreign Affairs of Finland
Total Contracted Amount (THB):1,504,404

AUA Benchmarking Project

Duration: 18-Dec-11 31-Jul-12
Project Investigator(s): Sudip K Rakshit
Sponsor: Hokkaido University
Total Contracted Amount (THB):468,300

5.6.5 Publications

Patent Anil Kumar Anal, Harjinder Singh, Kyong S. Han, Fang Yuan, Kennedy Breda; ENCAPSULATION SYSTEM FOR PROBIOTIC DURING PROCESSING; US PATENT APPLICATION NUMBER 13/088,165. (2011)

Book Chapter

Mohammad Abbas Mahmood, Sunandan Baruah, **Anil Kumar Anal** and Joydeep Dutta; Microbial pathogen inactivation using heterogenous photocatalysis; In: Eric Lichtfouse, Jan Schwarzbauer and Didier Robert (Eds

Environmental Chemistry for a Sustainable World: Vol 2, Springer Publications Ltd., The Netherlands DOI: 10.1007/978-94-007-2439-6_13 (2011).

International Journal Articles with Impact factor

Effect of physico-chemical properties of tropical starches and hydrocolloids on rice gels texture and noodles water retention ability Ihsan Mabood Qazi, Sudip Kumar Rakshit¹, Thierry Tran, Starch-Stärke, Volume 63, Issue 9, pages 558-569, September 2011

Screening selected strains of probiotic lactic acid bacteria for their ability to produce biogenic amines (histamine and tyramine) Wadu Mesthri Deepika Priyadarshani, Sudip K. Rakshit* International Journal of Food Science & Technology Volume 46, Issue 10, pages 2062-2069, October 2011

Physical and antimicrobial properties of banana flour/chitosan biodegradable and self sealing films used for preserving Fresh-cut vegetables Natcharee Pitak and Sudip Kumar Rakshit LWT - Food Science and Technology, Volume 44 (10), Elsevier Dec 1, 2011

Preedawan Chairichonlathan and Athapol Noomhorm Effects of Harvesting Seasons and Maturity Stages on Internal Characteristics of the Mangosteen having Different Surface Properties" International Journal of Food Science and Technology; Vol. 46 Issue 4 pg 717-723 April 2011

Cheevasopon Ekkapong and Athapol Noomhorm (2011) "Kinetics of hydration and dimensional changes of brown rice; Journal of Food

Processing and Preservation; Vol 46 Issue 12 pg 2498-2504 Dec 2011

Suksomboon, A., Limroongreungrat, K., Sangnark, A., Thititumjariya, K., Noomhorm, A; 2011; Effect of extrusion conditions on the physicochemical properties of a snack made from purple rice (Hom Nil) and soybean flour blend. The International Journal of Food Science and Technology: 46(1): 201-208

Rittichai Assawarachan and Athapol Noomhorm (2011) Influence of Temperature and TSS on performance of evaporation and Rheological Properties of Pineapple Concentration by Microwave Vacuum Evaporator; Journal of Food Process Engineering. 34: no. doi: 10.1111/j.1745-4530.2010.00600

Jiraporn Sripinyowanich and Athapol Noomhorm, A. (2011); New Model and Quality of Unfrozen and Frozen Cooked Rice Dried in a Microwave Vibro-Fluidized Bed Drier" Drying Technology Journal; Aug 2011, Vol.29(7), p.735-748

Ho Minh Thao and Athapol Noomhorm: (2011) Physicochemical properties of Sweet Potato and Mung Bean Starch and Their Blends for Noodle production; Journal of Food Processing and Technology Vol 2; Issue1; 2:105; 2011

Assawarachan, R., Sripinyowanich, J., Theppadungporn, K. and

Noomhorm, A. (2011). Drying paddy by microwave vibro-fluidized bed drying using single mode applicator. Journal of Food, Agriculture & Environment, 9 (2), 50-54.

Pongtong, K., Assawarachan, R. and Noomhorm, N. 2011. Mathematical models for vacuum drying characteristics of pomegranate aril. Journal of Food Science and Engineering 1(1), 11-19.

Satong-aun, W., Assawarachan, R. and Noomhorm, N. 2011. The influence of drying temperature and extraction methods on **alpha-mangostin** in mangosteen pericarp, Journal of Food Science and Engineering.

Namaporn Attaviroj, Sumaporn Kasemsumran and Noomhorm, A. (2011): "Rapid Rough Rice Variety Classification by Fourier

Cheevasopon Ekkapong and Athapol Noomhorm (2011) Effects of parboiling and fluidized bed drying on the physicochemical properties of germinated brown rice; paper submitted to the International Journal of Food Science and Technology; Dec 2011 Vol 35 Issue 6; pp 840-849

Jiraporn Sripinyowanich and Athapol Noomhorm (2011) "Effects of freezing pretreatment, microwave-assisted vibro-fluidized bed drying, and drying temperature on instant rice production and quality; Journal of Food Processing and Preservation.

Ho Minh Thao and A. Noomhorm (2011) Modeling and Effects of Various Drying Methods on Sweet Potato Starch Properties; *Walailak J Sci & Tech* 2011; 8(2) pp 139-158.

Mohammad Abbas Mahmood, Sunandan Baruah, **Anil Kumar Anal** and Joydeep Dutta; Heterogeneous Photocatalysis for Removal of Microbes from Water; *Environ Chem Letters*; DOI 10.1007/s10311-011-0347-X (2011).

Ali Akbar and **Anil Kumar Anal**; Food Safety and Food-borne Pathogens, Salmonella, Escherichia coli and Campylobacter; *FUUAST Journal of Biology*; 1, 5-18 (2011).

Alisha Tuladhar, Shruti Mishra and **Anil Kumar Anal**, Development and Characterization of Nanoporous Chitosan Membranes as Matrix and Rate Controlling Elements for Controlled Drug Delivery; *Asian Chitin Journal*; 7 (1), 7-14. (2011).

Yakindra P. Timilsina, Jyotsana Shrestha and **Anil Kumar Anal**; Acrylamide: Thermally Induced Toxicants and Its Control Measures; *Journal of Food Science and Technology*; Vol6, 19-30 (2011).

5.5.6 Doctoral Students' Dissertation

Study on Potential Use and Production of Thermotolerant Probiotics for Animal Feed

By Miss Bussarin Kosin
Supervisor Prof. Sudip K. Rakshit

Application of Banana Flour and Chitosan for the Production of Biodegradable Antimicrobial Self Sealing Edible Films

By Natcharee Pitak
Supervisor Prof. Sudip K. Rakshit

Isolation of Lactic Acid Bacteria from Turmeric (Curcuma longa Linn) and Its Application in Enriched Health Beverages

By Plangpin Pianpumepong
Supervisor Prof. Athapol Noomhorm

Modification of Rice Noodle Texture Using Blends of Starches and Hydrocolloids

By Ihsan Mabood Qazi
Supervisor Prof. Sudip K. Rakshit

Study of Biogenic Amines (Histamine and Tyramine) Production by Probiotic Lactic Acid Bacteria and Preliminary Investigation on its Rapid Detection

By W.M. Deepika Priyadarshani
Supervisor Prof. Sudip K. Rakshit

Application of Microwave-Vibro-Fluidized Bed Drying in Production of Instant Rice

By Jiraporn Sripinyowanich
Supervisor Prof. Athapol Noomhorm

5.5.7 Masters Students' Theses and Research Studies

Biodiesel Production from Palm Fatty Acid Distillate (PFAD) by Two-Step Catalysis

By Kamonwan Chanasit
Supervisor Prof. Sudip K. Rakshit

Polyunsaturated Fatty Acids (PUFA) from Fungi and their Fortification in

Salad Dressing

By Sayali Manohar Yenkar
Supervisor Dr. Anil Kumar Anal

Alginate-Starch Microcapsules Loaded with Omega-3 Producing Cells (Schizochytrium sp.) in Application of Enriched Snack Bars

By Chanokporn Uruan-ngam
Supervisor Dr. Anil Kumar Anal

High-Power Ultrasonication Assisted Extraction of Soybean Isoflavones and Effect of Toasting

By Thawunporn Pananun
Supervisor Prof. Athapol Noomhorm

Production and Application of Aspergillus flavus TISTR 3041 Protease as a Fabric Detergent

By. Suphakon Khositphanitchayakul
Supervisor Prof. Sudip K. Rakshit

Biodiesel Production using Microalgae Chlorella Vulgaris Oil and Homogeneous, Immobilized Lipase Enzyme and Heterogeneous Catalysts

By. Arindam Haldar
Supervisor Prof. Sudip K. Rakshit

Prevalence and Safety Concerns of Antibiotic Residues in Dairy Milk of Kathmandu Valley, Nepal

By. Bal Kumari Sharma (Khanal)
Supervisor Dr. Anil Kumar Anal

Antimicrobials from Lactobacillus Plantarum Isolated from Turmeric (Curcuma longa linn.) and their Applications as Biopreservative and in Edible Film

By Melada Supakijnoraset
Supervisor Dr. Anil Kumar Anal

Antimicrobial and Antioxidant Activities of Tea Polyphenols from Green Tea Waste Using Ultrasonic-Assisted Extraction

By Bantika Udomsakanee
Supervisor Prof. Sudip K. Rakshit

*Production of a Red-Violet Food Colorant from *Hylocereus undatus* Peel (Red Pitaya with White-Flesh) by Spray Drying and Its Application*

By Kanchana Chandrarojana
Supervisor Prof. Athapol Noomhorm

Effects of Drying Methods on Quality of Dried Coconut Residue

By Orawan Sopanattayanon
Supervisor Prof. Athapol Noomhorm

Formulation of Edible Adhesive for Seasoning Coated Extruded Snacks Using Mixture Response Surface Methodology

By Siranya Supattathum
Supervisor Prof. Athapol Noomhorm

Analysis of Post-Harvest and Supply Chain of Rice and Processing

Technology Development of Brown Rice Milk for Rural Farmers in Cambodia

By Ly Phanna
Supervisor Prof. Athapol Noomhorm

Effect of Different Chilling Conditions on Qualities of Chicken Meat

By. Rachan Inta
Supervisor Dr. Anil Kumar Anal

Effect of Saturated Steam Oven Cooking on Properties of Ready-to-Eat Chicken Breast Meat

By. Jullachak Chunluan
Supervisor Dr. Anil Kumar Anal

Optimization of Drum Drying Process Parameters for Pumpkin Powder Production and its Substitution in Rice Noodles

By. Vu Thi Thanh Dao
Supervisor Prof. Athapol Noomhorm

*Characterization of Antimicrobial Resistance Patterns and Target Antibiotic Resistant Gene in *Salmonella* Strains Isolated from*

Raw Milk in Sebeta, Ethiopia

By. Abraham Abebe Abate
Supervisor Prof. Sudip K. Rakshit

*Qualitative Screening of Antibiotic Residues and Identification of Antibiotic Resistant *Salmonella* from Raw and Ready to Eat Meat in Thailand*

By. Bilatu Agza Gebre
Supervisor Prof. Sudip K. Rakshit

Effect of Polyelectrolyte Based Microencapsulation on the Motility and Cryopreservation of Boran Semen

By. Jeilu Jemal Beshir
Supervisor Dr. Anil Kumar Anal

Effect of Mannanase and Emulsifiers on Coconut Flour as Wheat Flour Substitute on Bread Properties

By Yingsuda Sawatdisawanee
Supervisor Prof. Athapol Noomhorm

Chapter 5.7: SERD GENDER AND DEVELOPMENT STUDIES FIELD OF STUDIES

5.7.1 Introduction

A small project, Women in Development was initiated in the Human Settlements Development Division at AIT in the late 1980s. This grew into the Gender and Development Studies (GDS) as an academic unit in 1991, with financial support from CIDA, NORAD, the Dutch Development Cooperation and the Japanese Government.

Gender and Development Studies (GDS) is a center for graduate studies, research and outreach in the School of Environment, Resources and Development. Within the overall gender specific framework, GDS highlights both the need for specialized academic degree awarding studies in gender and development, and the integration of gender analysis and a gender relations perspective in AIT's other fields of study.

5.7.2 Faculty and Research Staff

Full-time Faculty

BERNADETTE RESURRECCION, BSc, Assumption College, Philippines; MA, PhD, Inst of Social Studies, the Hague, the Netherlands.

Associate Professor and Field Coordinator (*Gender, natural*

resource management and climate change, multi-local Livelihoods and migration, discourses and practices of gender mainstreaming)

KYOKO KUSAKABE, BA, Sophia University, Tokyo, Japan; MSc, PhD, AIT, Thailand.

Associate Professor (Women's employment in informal economy; Labor migration, Cross-border trade; Gender and development policy and planning; Gender issues in fisheries/aquaculture.

PHILIPPE DONEYS, B.A., University of Toronto, Canada; MA, University of London, UK; PhD, Institut d'Etudes Politiques de Paris, France.

Assistant Professor (New Technologies, Industrialization and Gender HIV/AIDS; Gender Politics, Civil Society and Human Rights; Gender, Migration and Trafficking in Asia)

Visiting Faculty

DONNA L. DOANE, M. A. Anthropology, M.A., M. Phil. Economics, Yale University, and Ph.D. Economics, Yale University

Adjunct Faculty (*Economic Development, Gender and Development, Informal economy,*

home based work, social protection, technology policies, indigenous knowledge and technology blending, analyses of prejudice and discrimination, conflict, ethnicity and gender)

JULAIKHA BENTE HOSSAIN, MSc in University of Dhaka, Bangladesh; MSc. and PhD in Asian Institute of Technology, Thailand

Research Specialist and Visiting Faculty (Gender and Development with emphasis on the policies and programmes for gender equality and women's empowerment; Gender, Employment and Organization; Gender and ICT for Development; Gender and Human Rights; Gender, Development and Public Policy; Gender Mainstreaming; Gender and Natural Resource Management)

Research Staff

JULAIKHA BENTE HOSSAIN, MSc in University of Dhaka, Bangladesh; MSc. and PhD in Asian Institute of Technology, Thailand

Research Specialist and Visiting Faculty (Gender and Development with emphasis on the policies and programmes for gender equality and

women's empowerment; Gender, Employment and Organization; Gender and ICT for Development; Gender and Human Rights; Gender, Development and Public Policy; Gender mainstreaming; Gender and Natural Resource Management)

LENA STHAPIT, MSc. in Asian Institute of Technology, Thailand

Project Manager (Enabling Bio-innovation for Poverty Alleviation in Asia)

KANOKPORN JAROENRITH, M.SW. in Education, Thammasat University, Thailand

Research Associate (Capacity Building for Gender, poverty and Mobility Analysis of Road Transportation Development in Greater Mekong sub-Region Project supported by ASEAN Foundation)

JAGRITI SHANKAR, MSc in Asian Institute of Technology, Thailand

Project Officer (Asian Project Management support Programme-Gender Sensitive Management)

DUANGSAMORN JATUPORNPIMOL, MSc in Asian Institute of Technology, Thailand

Research Associate (Responding to the Feminization of AIDS: Gender Power dynamics in marriage and Sero discordant Relationships implications for practice, Thailand)

5.7.3 Grants and Sponsored Research Completed in 2010

Japanese Government - Gender and Development

Duration: 1-Dec-06 31-Dec-11 Project
Investigator(s): Kyoko Kusakabe
Sponsor: Japanese Government
Total Contracted Amount (THB): 15,556,465

Gender, Cross Border Migrant Workers and Citizenship- A Case Study of the Burmese-Thai Border

Duration: 1-Nov-06 30-May-11
Project Investigator(s): Kyoko Kusakabe
Sponsor: IDRC
Total Contracted Amount (THB): 9,774,323

M-Power Research Fund

Duration: 1-Jan-07 31-Dec-11
Project Investigator(s): Bernadette Resurreccion, Edsel Sajor
Sponsor: Mekong Program on Water, Environment and Resilience (M-Power)
Total Contracted Amount (THB): 732,600

Project Development on Socio-Economic Impacts and Social Inclusion in Public Policy Processes in Selected Agricultural Food Biotechnology among five Southeast Asian Countries

Duration: 1-Mar-08 31-Mar-11
Project Investigator(s): Bernadette Resurreccion, Edsel Sajor
Sponsor: IDRC, Canada
Total Contracted Amount (THB): 4,168,340

NORAD-GDS 2006-2009

Duration: 1-Jan-06 30-Jun-11 Project
Investigator(s): Bernadette Resurreccion
Sponsor: NORAD

Total Contracted Amount (THB): 20,781,377

Enabling Bio-innovation for poverty alleviation in Asia

Duration: 8-Mar-08 31-Dec-11
Project Investigator(s): Sudip Rakshit, Bernadette Resurreccion, Edsel Sajor
Sponsor: International Development Research Centre, Canada
Total Contracted Amount (THB): 17,232,280

Gender Analysis of Cross Border Road Infrastructure: A case of Kunming Bangkok Highway

Duration: 1-Dec-09 31-Mar-11
Project Investigator(s): Kyoko Kusakabe
Sponsor: ADB
Total Contracted Amount (THB): 1,000,500

Responding to the Feminization of AIDS: Gender Power dynamics in marriage and Sero discordant Relationships implications for practice Thailand

Duration: 1-Aug-10 28-Feb-11
Project Investigator(s): Phillippe Doney
Sponsor: UNIFEM
Total Contracted Amount (THB): 1,128,050

CKDN Project Proposal on sustainable tourism

Duration: 1-Jun-11 01-Aug-11
Project Investigator(s): S Kumar, Kyoko Kusakabe
Sponsor: Sustainable Mekong Research Network
Total Contracted Amount (THB): 120,000

5.7.4 On-going Grants and Sponsored Research

Capacity Building for Gender, Poverty and Mobility Analysis of Road Transportation Development in the GMS Region

Duration: 1-Jan-08 30-Dec-12

Project Investigator(s): Kyoko Kusakabe

Sponsor: ASEAN Foundation

Total Contracted Amount (THB):

10,889,238

Training workshop for the students from Ochanomizu University, Japan

Duration: 1-Jun-05 31-Dec-12

Project Investigator(s): Kyoko Kusakabe

Sponsor: Participants

Total Contracted Amount (THB): 97,778

Mobile Livelihoods and Gendered citizenship: The counter geographies of Indigenous people: Laos

Duration: 1-Jan-10 31-Jan-13

Project Investigator(s): Kyoko Kusakabe

Sponsor: Norwegian University of

Science and Technology (NTNU)

Total Contracted Amount (THB):

2,764,032

Mobile Livelihoods and Gendered citizenship: The counter geographies of Indigenous people: China

Duration: 1-Jan-10 31-Jan-13

Project Investigator(s): Kyoko Kusakabe

Sponsor: Norwegian University of

Science and Technology (NTNU)

Total Contracted Amount (THB):

2,118,670

Asian Project Management support Programme-Gender Sensitive Management

Duration: 28-Apr-10 30-Jun-12

Project Investigator(s): Kyoko Kusakabe

,Phillipe Doney Sponsor: IFAD

Total Contracted Amount (THB):

6,400,000

Revisiting Gender in Development : Complex Inequalities in a changing Asia

Duration: 15-Mar-11 15-Mar-14

Project Investigator(s): Bernadette P

Resurreccion,Phillipe Doney

Sponsor: Research Council of Norway

Total Contracted Amount (THB):

7,004,000

Social Impact Assessment on Wild Honeybee Project in Cambodia

Duration: 13-May-11 31-Mar-13

Project Investigator(s): Kyoko Kusakabe

Sponsor: Arun LLC

Total Contracted Amount (THB): 960,480

Re-visiting Gender in Development:Gender mainstreaming infrastructure development in Laos

Duration: 15-Mar-11 15-Mar-14

Project Investigator(s): Kyoko

Kusakabe

Sponsor:The Research Council of

Norway

Total Contracted Amount (THB):

1,219,000

Escaping the middle income country trap: Targeted and pragmatic policies for technological upgrading and workers inclusive industrial strategies as drawn from firm-level analysis of the Philippines and Thailand

Duration: 1-Aug-11 30-Jul-14

Project Investigator(s): Kyoko Kusakabe

Sponsor: WOTRO Total

Contracted Amount (THB): 4,911,102

Gender and development training research publications and

Networking project

Duration: 1-Jul-11 30-Jun-14

Project Investigator(s): Bernadette P

Resurreccion

Sponsor: Norwegian Ministry of Foreign

Affairs

Total Contracted Amount (THB):

5,360,482

M-Power -CPWF Research Fellowships Program

Duration: 1-Aug-11 31-Dec-13

Project Investigator(s): Bernadette

P.Resurreccion

Sponsor: CPWF Challenge Program on

Water and Food

Total Contracted Amount (THB):

29,640,436

5.7.5 Publications

International Journal Articles with Impact factor

Bernadette P. Resurreccion. Beyond cloak words toolkits and gender myths: gender environment and developments and integrative learning at the Asian institute of Technology. Gender, Technology and Development, 1(14) 0-0, 2010.

Dhungana, Bishnu Maya and Kyoko Kusakabe (2010) "Role of Self-Help Groups in Disabled Women's Empowerment: Case Study of Kathmandu Valley Nepal", *Development in Practice*, 20:7, 855-865.

Groves G.E.C., Bernadette P. Resurreccion, Philippe Doney. Keeping the peace is not enough: Human security and gender-based violence during the transitional

period of Timor-Leste. *Sojourn*, 2(24) 0-0, 2010.

Julaikha B. Hossain. Networking with Norwegian institutions: Re-visiting, re-thinking gender in development. *Gender, Technology and Development*, 3(13) 0-0, 2010.

Kusakabe, Kyoko (2010) Viewpoints, *Natural Resources Forum*, 34, 328.

Kusakabe, Kyoko and Ruth Pearson (2010) "Transborder migration, social reproduction and economic development: A case study of Burmese women workers in Thailand", *International Migration*, 48:6, 13-43.

Kusakabe, Kyoko and Theonakhet Saphakdy (2010) "Constructed 'needs' for road construction: A case of Attapeu Province, Lao PDR", *GEMC Journal*, No.2, pp. 6-15, Tohoku University.

Kyoko Kusakabe, Pearson R.. International workshop on gender, migrant workers and citizenship in Greater Mekong Subregion: Economic and political perspectives for a world in crisis. *Gender, Technology and Development*, 2(13) 0-0, 2010.

Oo Z.M., Kyoko Kusakabe. Motherhood and social network: Response strategies of internally displaced Karen women in Taungoo district. *Women's Studies International Forum*, 5(33) 0-0, 2010.

Resurreccion, Bernadette and Sajor, Edsel E. "Not a real worker": Gendering migrants in Thailand's shrimp farms. *International Migration*, 48(6) 102-131, (2010)

Tran Ha Nguyen, Truong T.-D., Bernadette P. Resurreccion. Gender, class and nation in a transnational community: Practices of identity among undocumented migrant workers from Vietnam in Bangkok. *Gender, Technology and Development*, 3(12) 0-0, 2010.

5.7.6 Doctoral Student's Dissertation

Gender, the Women's Movement and Nation Building: The Historical Experience of Timor-Leste

By Gabrielle Eva Carol Groves
Supervisor: Dr. Bernadette P. Resurreccion

5.7.7 Masters Students' Theses and Research Studies

Irrigation Water Management in Conflict-Affected Area Of Nepal: A Gender Perspective

By Smrittee Kala Panta
Supervisor: Dr. Bernadette P. Resurreccion

A Gender Perspective of Displacement and Its Impacts on Health: The Case of the Irrawaddy Myitsone Dam

Construction Project in Kachin State, Myanmar

By May Sabe Phyu

Supervisor: Dr. Philippe Doney, Dr. Kyoko Kusakabe

Rights of Women to Retain Their Own Surname: A Study of 'Patriarchal Bargain' of Conservative Women's Groups in Japan

By Ishiyama Akiko
Supervisor: Dr. Kyoko Kusakabe

Gender Dimensions of HIV/AIDS Programmes and Services in Gombe State, Nigeria

By Kabati Baba Tokara
Supervisor: Philippe Doney

Gendered Vulnerabilities of the Stateless: A Case of Muslim Rohingyas in Bangkok, Thailand

By Warunyakorn Fakthong
Supervisor: Dr. Philippe Doney, Dr. Bernadette P. Resurreccion

Gender Dimensions of Occupational Health and Safety of Street Vendors in Kathmandu Valley, Nepal

By Abina Shrestha
Supervisor: Dr. Philippe Doney

Gender-Specific Strains on Household Relations in Drought-Affected Villages: The Case of Doti District, Nepal

By Nanu Thapa
Supervisor: Dr. Bernadette P. Resurreccion

Livelihood and Changing Gender Relations: A Case Study of Rohingya Refugee Camp in Bangladesh

By Shamima Akhter
Supervisor: Dr. Kyoko Kusakabe

The Practice of Chhaupadi Amongst Dalit Women in Dadelhura, Bhageswor VDC: A Study of

Contunity and Change

By Kripa Rana Supervisor: Dr.

Bernadette P. Resurreccion.

Chapter 5.8: SERD NATURAL RESOURCES MANAGEMENT FIELD OF STUDY

5.8.1 Introduction

This field of study emphasizes natural resources, including land, forest and wild animal, and environmental conservation concerns. It addresses the problems of deforestation, land and coastal ecosystem degradation, biodiversity depletion, diminishing water supply, and other environmental pressures and threats on local, national, regional and global ecosystems.

5.8.2 Faculty and Research Staff

Full-time Faculty

GANESH P SHIVAKOTI, BS, MS, Udaipur Univ, India; PhD, Michigan State Univ, USA.

Professor (Natural Resources Economics; Common Property Resources; NRM Policy Analysis; and Watershed Management)

RAJENDRA P SHRESTHA, BSc, Haryana Agri. Univ, India; MSc, DTechSc, AIT, Thailand.

Associate Professor (Sustainable Land Management; Natural Resources Degradation and Environmental indicators; Landuse-climate, Geoinformatics)

ROLAND COCHARD, Ph.D., ETH, Switzerland ecology, biodiversity, mangrove, risk management)

Visiting Faculty

SYLVAIN PERRET, MS and PhD, University of Montpellier III, France; DSc, Ecole Polytechnique de Lorraine, Nancy, France.

Visiting Associate Professor (Water management/institutions, governance, economics/sustainability in rural development/dynamic modeling)

DAMIEN JOURDAIN, BEng, MSc, Ecole Nationale Supérieure Agronomique de Montpellier, France; PhD, Montpellier I Univ, France

Visiting Assistant Professor

Adjunct Faculty

DIETRICH SCHMIDT-VOGT, BSc, Freiburg University,

Germany; MSc, University of Saskatoon, Canada; PhD, Heidelberg University, Germany.

Adjunct Faculty (Landscape Ecology; Integrated Land Use

Systems; Sustainable Forest Management; and Human Impact on Vegetation)

EDWARD L WEBB, BA, Occidental College, Los Angeles; PhD, Univ of Miami, USA.

Adjunct Associate Professor (Tropical Forest Ecology;

Assistant Professor (Savanna ecosystem dynamics, landscape Community-based natural resources management, and Forestry)

5.8.3 Grants and Sponsored Research Completed in 2011

Downscaling Global climate data for assessing the impact of Climate change on Dipterocarp species in Peninsular Thailand

Duration: 1-Jul-09 31-Mar-11

Project Investigator(s): Rajendra

P.Shrestha Sponsor: RTG

Total Contracted Amount (THB):999,600

5.8.4 On-going Grants and Sponsored Research

Making the Mekong Connected: Developing carbon and multidiversity assets for multifunctional landscapes in upper mekong

Duration: 1-Mar-09 31-Dec-12

Project Investigator(s): Rajendra

P.Shrestha

Sponsor: World Agroforestry center
Total Contracted Amount (THB):
2,187,588

AIT support to NUOL 2007 – 2010

Extension: Forestry Curriculum

Duration: 1-Jan-11 30-Jun-12
Project Investigator(s): Rajendra
P.Shrestha Sponsor: SIDA
Total Contracted Amount
(THB):1,498,630

Collaboration in Integrated Natural Resources Management in Indonesia "Decentralization, Local People, Gender and Resources"

Duration: 1-Aug-05 to 31-Dec-12
Project Investigator(s): Ganesh P.
Shivakoti
Sponsor: The Ford Foundation
Total Contracted Amount (THB):984,000

Collaboration on Capacity Building of hanoi Agricultural University and Hue University of Agriculture and Forestry in Initiating INRM and Poverty Alleviation

Duration: 1-Jul-08 to 31-Jul-12
Project Investigator(s): Ganesh P.
Shivakoti
Sponsor:The Ford Foundation, Hanoi,
Vietnam
Total Contracted Amount
(THB):6,536,600

The Collaborative Graduate program in Integrated Natural Resources Management between Hanoi University of Agriculture and Hue University of Agriculture and Forestry

Duration: 15-Jul-09 to 14-Jul-12
Project Investigator(s): Ganesh
Shivakoti
Sponsor: Ford Foundation Hanoi

Total Contracted Amount
(THB):12,184,992

5.8.5 Publications

International Journal Articles with Impact factor

Partoyo and R.P. Shrestha, 2011. Monitoring farmland loss and projecting the future land use of an urbanized watershed of Yogyakarta, Indonesia, Journal of Land Use Science, [Accepted 2 September 2011].

Udayakumara, E.P.N. and R.P. Shrestha, L. Samarakoon, and D. Schmidt-Vogt, 2011, Mitigating Soil Erosion through Farm-level Adoption of Soil and Water Conservation Measures in Samanalawewa Watershed, Sri Lanka, Acta Agriculturae Scandinavica, Section B – Soil & Plant Science, [Impact factor: 0.62] DOI:10.1080/09064710.2011.608708

Thongdara, R., L. Samarakoon, R.P. Shrestha, and S.L. Ranamukhaarachchi, 2011. Using GIS and Spatial Statistics to Target Poverty and Improve Poverty Alleviation Programs: A Case Study in Northeast Thailand, Applied Spatial Analysis and Policy, DOI: 10.1007/s12061-011-9066-8.

Santiphop, T., R.P. Shrestha, M. Hazarika, 2011. An analysis of factors affecting agricultural land use patterns and livelihood strategies of farm households in

Kanchanaburi Province, Thailand, Journal of Land Use Science, [Available online 24 June 2011, DOI: 10.1080/1747423X.2011.587208.

Udayakumara, E.P.N. and R.P. Shrestha, 2011. Assessing livelihood for improvement: Samanalawewa reservoir environs, Sri Lanka, International Journal of Sustainable

Development and World Ecology, 18(4): 366-376. [impact factor: 0.525]

Bandara, K R M U, L. Samarakoon, R.P. Shrestha, Y. Kamiya, 2011. Automated Generation of Digital Terrain Model using Point Clouds of Digital Surface Model in Forest Area , Remote Sensing, 3(5): 845-858.

Trisurat, Y., R.P. Shrestha, and R. Kjelgren, 2011. Plant Species Vulnerability to Climate Change in Peninsular Thailand, Applied Geography, 31: 1106-1114.

Thuithaisong, C., P. Parkpian, O.V. Shipin, R.P. Shrestha, K. Naklang, R. D. DeLaune and A. Jugsujinda, 2011. Soil quality indicators for predicting sustainable organic rice production. Communications in Soil Science and Plant Analysis, 42(5):548-568.

Qasim, S., R.P. Shrestha, G.P. Shivakoti and N.K. Tripathi, 2011. Socio-economic Determinants of Land Degradation in Pishin sub-basin, Pakistan. International Journal of Sustainable Development and World Ecology. 18(1)48-54.

Manandhar, S., Schmidt-Vogt, D., Perret, S.R., Kazama, F. (2011) Adapting cropping systems to climate change in Nepal: a cross-regional study of farmers perception and practices. *Regional Environmental Change*, 11(2011):335-348

Books and Chapters

Trisurat, Y., Shrestha R.P. and R. Alkamade (Editors.). 2011. *Land Use, Climate Change and Biodiversity Modeling: Perspective and Applications*, edited book volume, IGI Publishers. Pages 489 [ISBN 978-1-60960-619-0].

Shrestha, R.M., Kim Oanh, N.T., Shrestha, R. P., Rupakheti, M., Rajbhandari, S., Permadi, D.A., and Kanabkaew, T. (2011), *Atmospheric Brown Cloud (ABC) Emission Inventory Manual*, United Nations Environment Programme, Nairobi, Kenya. Pages 181

Shrestha, R.P. 2011. Land degradation and biodiversity loss in Southeast Asia. In: *Land Use, Climate Change and Biodiversity Modeling: Perspective and Applications*, Trisurat, Y., Shrestha R.P. and R. Alkamade (Editors.). IGI Publishers. P. 303-327.

Trisurat, Y., Shrestha R.P. and R. Alkamade, 2011. Linkage between biodiversity, land use informatics and climate change. In: *Land Use, Climate Change and Biodiversity Modeling: Perspective and*

Applications Trisurat, Y., Shrestha R.P. and R. Alkamade (Editors.). IGI Publishers, p.1-22.

5.8.6 Doctoral Students' Dissertation

Biophysical and Social Dimensions of Land Use Development and Reforestation in Kanchanaburi, Thailand

By Thirapong Santiphop
Supervisor Dr. Rajendra Prasad Shrestha

Land Degradation in Pishin Sub-Basin, Pakistan: An Analysis of Socio-Economic Determinants and Conservation Measures

By Said Qasim
Supervisor Dr. Rajendra Prasad Shrestha

Land Degradation and Rural Livelihood in the Samanalawewa Catchment, Sri Lanka

By E.P.N. Udayakumara
Supervisor Dr. Rajendra Prasad Shrestha

Payments for Environmental Services as Incentives for Sustainable Forest Management in Thua Thien Hue Province, Vietnam

By Tran Nam Thang
Supervisor Prof. Ganesh P. Shivakoti

An Analysis of Land Use Options and Strategies for Food Availability and Land Conservation in Yogyakarta, Indonesia

By Partoyo
Supervisor Dr. Rajendra Prasad Shrestha

Community-based Co-management Mechanism of Forest Resources: A Case Study of Baishuijiang National Natural Reserve, China

By Zhu Ting
Supervisor Prof. Ganesh P. Shivakoti

Sustainable Livelihood under Community-based Co-management of Forest Resources: A Case Study in Gansu Baishuijiang National Natural Reserve, China

By Chen Haiyun
Supervisor Prof. Ganesh P. Shivakoti

5.8.7 Masters Students' Theses and Research Studies

Mangrove Ecosystem Services: A Case Study of Tran De District, SOC Trang-Vietnam

By Tang Phuong Gian
Supervisor Dr. Roland Cochard

Effect of an Agricultural Land Reform Project on People's Livelihood: A Case Study of Bor Lek Long Sub-district, Phrae Province, Thailand

By Niramon Kaewkallaya
Supervisor Dr. Rajendra Prasad Shrestha

Attitudes and Perceptions of Fishers Towards the 25-year old Seasonal Closed Measure in Phang-Nga and Krabi Bays, Thailand

By Sampan Panjarat
Supervisor Prof. Ganesh P. Shivakoti

Livelihoods and Changes in Newly Declared Band-e-Amir National Park, Bamiyan Province, Afghanistan

By Abdul Aziz Mohibbi
Supervisor Dr. Roland Cochard

Impact of Climate Change on Food Security: A Case Study of Agriculture in Makawanpur District of Nepal

By Namita Nepal

Supervisor Dr. Rajendra Prasad

Shrestha

Perceptions of an Invasive Plant Species, Mimosa pigra, and the Management Strategies used to combat it in Chllong District, Cambodia

By Samridhi Rijal

Supervisor Dr. Roland Cochar

Boulders on the Reef: Biodiversity and Climate Change in the Cook Islands: Are we walking the talk?

By Anna Elizabeth Tiraa

Supervisor Prof. Ganesh P. Shivakoti

Impact Assessment of Community-Based Forest Management in the Philippines: A Case Study of CBFM Sites in Nueva Vizcaya

By Elizabeth Tomas Carig

Supervisor Prof. Ganesh P. Shivakoti

Diversity and Dynamics of a Secondary Lowland Rainforest in Thua Thien Hue Province, Central Vietnam

By Van Thi Yen

Supervisor Prof. Ganesh P.

Shivakoti, Dr. Roland Cochar

Potential and Prospect for Sustainable Cultivation of Jatropha curcas in Palpa District, Nepal

By Kiran Upreti

Supervisor Dr. Rajendra Prasad

Shrestha

Socioeconomic Profile and Food Security Status of Small-Scale Farmers Around the Nong Han Lake, Sakon Nakhon, Thailand

By Wipawa Chuenchit

Supervisor Dr. Sylvain Roger Perret

Potential and Prospect for Sustainable Cultivation of Jatropha curcas in Palpa District, Nepal

By Kiran Upreti

Supervisor Dr. Rajendra Prasad Shrestha

Socioeconomic Profile and Food Security Status of Small-Scale Farmers Around the Nong Han Lake, Sakon Nakhon, Thailand

By Wipawa Chuenchit

Supervisor Dr. Sylvain Roger Perret

Chapter 5.9: SERD PULP AND PAPER TECHNOLOGY FIELD OF STUDY

5.9.1 Introduction

This field of study strives for finding basic solutions for the immediate technical problems facing the local pulp and paper industry. Research activities in PPT are focused on optimising pulping, bleaching and papermaking processes with emphasis on the reduction of their negative impact on environment. The quality of the product is also emphasized to maintain competitive edge of local pulp and paper industry in the global market. Modification of existing processes to suit local raw material is another challenging area of research. The field of study is also launching a new program with focus on biorefining. Biorefining is a new trend of pulp and paper industry. The industry along with production of pulp pioneers production of transportation fuel, chemicals and medicine from the same raw material (i.e. lignocelluloses).

5.9.2 Research Facilities and Laboratories

The Pulp and Paper Laboratory was established to provide the need for research and high level education for this specific field. The laboratory is equipped with all basic facilities for teaching and research purposes

in the field of pulp and paper technology.

Several sophisticated equipment have been constantly furnished to extend the services for advance research and special studies likewise. The facilities are provided for activities in pulping paper testing, printing and coating, as well as for wood component analysis. The equipment is standardized according to ISO, TAPPI, and Scandinavian Standards. The programmable six-vessel autoclave digester makes cooking study in research level possible in the most convenient setting. Other major equipment in Pulp and Paper Laboratory include the single batch digester, bleaching reactor, sheet formers, fiber length analyzer, formation tester, deinking flotation cell, and spectrophotometer with ERIC option. In addition to provide assistance and research facilities needs for students, faculty, the laboratory also provides professional services for pulp and paper industry internationally. Among its major equipment include a 6-bomb autoclaved digester, CRS Engineering; Bleaching reactor; Buchi extraction system; GC; Zeta potential tester; Charge density

tester; PFI mill; Valley beater; Escher Wyss refiner; AMC Medium

Consistency disintegrator; VoithSulzer Deinking unit; Fiber length analyzer FS-200, Kajaani; L&W Fiber Tester; Handsheet former set with white water recirculation option; Fiber line ESpectrophotometer with ERIC option; Ambertec beta formation tester and Calender

5.9.3 Faculty and Research Staff

Full-time Faculty

SAID IRANDOUST, MSc, PhD, Chalmers University of Technology, Sweden

Professor [catalytical gas-fluid processes with a focus on reaction kinetics, mass transport, flow calculations, reactor modeling and reactor design]

MOUSA M NAZHAD, BSc, Univ of Concordia, Montreal, Canada; MSc, Univ of Concordia, Montreal; PhD, Univ of British Columbia, Vancouver, Canada.

Associate Professor [Recycled fiber, Paper and Paperboard quality, Nanoparticles in papermaking, Specialty papers, Pulp processing and Biorefining]

SHASHANK BHARTI, BSc, Vikram Univ, India; Post Graduate Diploma,

Indian Inst of Tech, India; PhD, Technical Univ of Lodz, Poland

Visiting Faculty

ESA MATTI JUHANI VILJAKAINEN, MSc. in Chem. Eng. (HUT), Tech. Lic. (HUT), Helsinki University of Technology, Finland.

Visiting Faculty [Fiber Processing: Mechanical pulping and Recycled fiber technology; Expert in industrial effluent treatment and Environment technology]

AHMAD MIRSHOKRAEI, BSc, Univ of Tehran, Iran; MSc, Univ of TEHRAN, IRAN; PhD, Univ of McGill, Montreal, Canada.

Professor [Pulping, bleaching, lignin structure]

Adjunct Faculty

HAKAN KOLMODIN, MSc. in Chemical Engineering, Ph.D. Engineering Chemistry, Chalmers University of Technology, Sweden.

Adjunct Faculty [Pulp and Paper Mill, cooking chemistry, bleaching chemistry, paper chemistry, printing technology/printability]

Visiting Lecturers

ELIAS ANTERO RETULAINEN, MSc., D.Tech. in Paper Technology, Helsinki University of Technology, Finland.

Visiting Lecturer [Fiber and Paper Science].

EWALD BEIVI, Graduate in Sheet-fed offset printing; in Publication rotogravure printing; Eledg.Dipl. in Printing Production Management & Technology, Betriebsfachmann Druck, St. Gallen, Switzerland.

Visiting Lecturer [Covering printing technology]

ESA KALEVI LEHTINEN, M.Sc. (Tech.) in Wood Chemistry and Pulping Technology, Lic.Sc. (Tech.) in Paper Technology and Chemistry of Forest Products, Helsinki University of Technology, Finland.

Visiting Faculty [*Pigment coating technology of paper, Paper technology in general*]

RAIMO O MALINEN, MSc, LicTech, DTech, Helsinki Univ. of Tech., Finland.

Associate Professor [*Wood and Fibre Chemistry in general; Pulping Technology; Environmental Technology; Project Management*]

Research Staff

Ms. Nareerat Nitisoravut, Senior Laboratory Supervisor Ms. Lalita Joshi, Laboratory Supervisor

Technician and Laboratory

Mr. Manoch Suansiri, Laboratory Technician II

Mr. Suchart Junteing, Laboratory Technician II

Mr. Kanong Malaithong, Laboratory Technician I

Administrative Staff

Ms. Suwannee Tilapornputt, Secretary II

5.9.4 Masters Students' Theses and Projects

Development of Low Basis Weight Base Paper for Medium Weight Coated Paper

By Md. Amirul Islam Patwary
Supervisor Dr. Mousa M. Nazhad

Possibilities for Partial Replacement Wood Fiber in Kraft Liner with Non-Wood

By Bunyarat Phiphatsirikajorn
Supervisor Dr. Mousa M. Nazhad

Developing a Water Resistant Board with Waterborne Polyurethane and Soy Protein Isolated

By Pornpan Thangkitcharoenporn
Supervisor Dr. Mousa M. Nazhad

Papermaking Potential of some Chinese Non-wood Fibers: A Comparison

By Chen Cheng Cong
Supervisor Dr. Jiri Basta

Optimization of Black Liquor Solid from Fiberline into Chemical Recovery Process to Reach Fuel Potentiality of Black Liquor as Renewable Energy in Pulp Mill

By Yuniar Riseta
Supervisor Dr. Mousa M. Nazhad

*Optimizing Filler Retention of Mixed
Tropical Hardwood Based on
Uncoated Fine Paper*

By Ferdian Alam Wahyudi

Supervisor Dr. Mousa M. Nazhad

*Effects of Final Bleaching Stage
Using Hydrogen Peroxide and
Peracetic Acid (Eq.) in the ECF
Bleaching of Acacia D0EOPD1 Kraft
Pulps*

By Dede Ermawan

Supervisor Dr. Jiri Bas

*Effect of Broke Dosage on Stock
Processing and Properties of End
Products*

By Ratna Kumala Sari

Supervisor Dr. Mousa M. Nazhad

Chapter 5.10: SERD REGIONAL AND RURAL PLANNING FIELD OF STUDY

5.10.1 Introduction

This field of study focuses on rural poverty, improvement of the quality of life, and social and economic development of rural areas. Practice oriented rural regional planning is carried out regularly at district and subdistrict levels following a participatory and integrated approach, and attention is paid to management of development Institutions, infrastructure and physical resources. Sectoral and spatial planning is equally emphasized along with the management of rural development programs and local development projects to strengthen rural communities for sustainable development.

5.10.2 Faculty and Research Staff

Full-time Faculty

GOPAL B THAPA, BSc, Tribhuvan Univ, Nepal; MSc, DTechSc, AIT, Thailand.

Professor (Natural Resources Management; Sustainable Agricultural Development and Planning; Watershed Management)

JAYANT K ROUTRAY, BSc (Hons), MSc, PhD, Utkal Univ; MRP, Indian Inst of Tech, India.

Professor (Regional and Rural Development Planning, Rural-Urban Relations, Regional Planning Methods and Techniques, Disaster Risk Reduction and Management, Climate Change Induced Adaptation, and GIS Applications)

SOPARTH PONGQUAN, BSc, Chiang Mai Univ; MSc, AIT, Thailand; DSc, Univ of Wageningen, The Netherlands.

Associate Professor (*Capacity Building; Community Development and Monitoring and Evaluation of Development Projects; Decentralized Local Government; People's and Community Participation; Rural Development*)

MOKBUL MORSHED AHMAD, BSc, MSc, Dhaka Univ, Bangladesh; MSc, AIT, Thailand; PhD, Univ of Durham, UK.

Associate Professor (*Economic geography; regional and rural development planning; community development; Non-Governmental Organizations (NGOs); civil society; globalization etc*)

Professional Staff

VITON NIL-UBOL, MSc, AIT, Thailand

Field Lab Supervisor, Regional and Rural Development Planning

5.10.3 Grants and Sponsored Research Completed in 2011

Training Workshop Thematic Research on Gender mainstreaming and Economic empowerment

Duration: 6-Feb-09 30-Jul-11
Project Investigator(s): Jayant K Routray
Sponsor: UNIFEM
Total Contracted Amount (THB):1,650,000

Development Planning & Governance for Poverty Reduction

Duration: 1-Oct-10 30-Mar-11
Project Investigator(s): Jayant K Routray
Sponsor: Government of India
Total Contracted Amount (THB): 2,240,250

Gender mainstreaming and equality with focus on MDG's

Duration: 26-Nov-10 25-Mar-11
Project Investigator(s): Jayant K Routray
Sponsor: UNDP Afghanistan
Total Contracted Amount (THB):1,102,000

Capacity Building for Poverty Reduction strategies"

Duration: 1-Jan-11 30-Jun-11
Project Investigator(s): Jayant K Routray
Sponsor: Government of India
Total Contracted Amount (THB):2,088,000

5.10.4 Publications

International Journal Articles with Impact factor

Morais, S.N. and Ahmad, M.M. (2011). "NGO-led Microfinance: Potentials and Challenges in Conflict Areas". *Journal of International Development*. Vol 23. No.5. pp. 629-640 (international).

Ahmad, M. and Ahmad, M. M. (2011) "Do public representatives in local governments know about "disability rights" in Pakistan? An awareness assessment case from Southern Punjab". *Innovation: The European Journal of Social Science Research*. Volume 24, Issue 4. pp. 409-426 (international).

Waheed, A. and Ahmad, M. M. (2011). "Assessing the Economic Impacts of Terrorism on Informal Day Labourers Sector in Lahore, Pakistan". *International Journal of Academic Research*. Vol. 3. No. 3, Part1. pp. 383-387 (international).

Alam, J. and Ahmad, M. M. (2011). "Impacts of Environmental Laws on Land Development and Developers in Dhaka City, Bangladesh". *International Journal of Environment and Sustainable Development*. Vol. 10, No. 2. pp. 169-188 (international).

Kasem, S. and Thapa, G.B. (2011), Crop diversification in Thailand: status, determinants, and effects on

income and use of inputs, *Land Use Policy*, Vol. 28, pp. 618-628, Elsevier

Memon, J.A, and Thapa, G.B. (2011), The Indus irrigation system, natural resources, and community occupational quality in the delta region of Pakistan, *Environmental Management*, Vol. 47, pp. 173-187, Springer Verlag

Rasul, G., Thapa, G.B. and Karki, M.B. (2011), "Comparative analysis of evolutions of participatory forest management institutions in South Asia", *Society and Natural Resources*, Vol. 24, pp. 1322-1334, Taylor & Francis

Thapa, G.B. and Rattanasuteerakul, K. (2011), "Adoption and extent of organic vegetable farming in Mahasarakham province, Thailand", **Applied Geography**, Vol. 31, pp. 201-209, Elsevier

Apisek Pansuwan and Jayant K Routray, Policies and Pattern of Industrial Development in Thailand, *GeoJournal*, 76 (1) 25-46, 2011.

Shitangsu Kumar Paul and Jayant K. Routray, Household response to cyclone and induced surge in coastal Bangladesh: coping strategies and explanatory variables, *Natural Hazards*, 57 (2) 477-499, 2011.

Ullah, Md. Anwar and Soparth Pongquan, Revenue Mobilization Performance of Union Parishad in Bangladesh: Is It Convergence of Central-Local Relations, *Asian Social*

Science, Vol. 7, No. 2, 2011, pp. 25-40.

Sowana, Akon, Rajendra, P. Shrestha, Preeda Parkpian and Soparth Pongquan, Influence of Coastal Land Use on Soil Heavy-Metal Contamination in Pattani Bay, Thailand. *Journal of Coastal Research*, Vol. 27, Issue 2 (March 2011), pp. 252-262.

Sokphea, Young, Soparth Pongquan and Sophal Ear, Local Good Governance of Rural Infrastructure Development Planning: Case Studies of Commune Councils in Cambodia, *International of Environment and Rural Development*, Vol. 2, Issue 1, 2011, pp. 59-64

Books and Monographs

A. Rautray and J. K. Routray, Impact of Watershed Intervention: Evaluation of interventions and its impacts on watershed development with and without people's participation, LAP Lambaert Academic Publishing, ISBN: 978-38454-1823-0, 2011.

National and Regional Journals

Puspha Malkanthi and Jayant K. Routray, Agritourism Development: The Case of Sri Lanka, *ASEAN Journal of Hospitality and Tourism*, 10 (1), 2011.

5.10.5 Doctoral Students' Dissertation

Land and Housing Development Projects and Ensuing Externalities in the Built Environment: A Study in Dhaka, Bangladesh
By Md. Jahangir Alam Supervisor Dr. Edsel E. Sajor

Land and Housing Development Projects and Ensuing Externalities in the Built Environment: A Study in Dhaka, Bangladesh
By Md. Jahangir Alam Supervisor Dr. Mokbul Morshed Ahmad

Mobilization of Local Resources for Local Development in Bangladesh
By Md. Anwar Ullah Supervisor Dr. Soparth Pongquan

Industrial Development in Thailand: A Macro and Micro Level Analysis
By Apisek Pansuwan Supervisor Prof. Jayant Kumar Routray

Measuring Access Rights of People with Physical Disabilities in Rural Pakistan
By Mahtab Ahmad Supervisor Dr. Mokbul Morshed Ahmad

Management, Utilization and Status of Mangroves in the Indus River Delta of Pakistan
By Junaid Alam Memon Supervisor Prof. Gopal Bahadur Thapa

Terrorism: Impacts on Civilians and Community Defense Strategy in Pakistan
By Abdul Waheed Supervisor Dr. Mokbul Morshed Ahmad

Sustainability of Ecotourism in Yao Noi Island, Thailand

By Rungrawee Jitpakdee Supervisor Gopal Bahadur Thapa

5.10.6 Masters Students' Theses and Research Studies

Local Development through Decentralized Administration in Maldives
By Mohamed Shakeeb Supervisor Prof. Jayant Kumar Routray

Socioeconomic Disparity between Locals and Thai Ethnic Minority in Vietnam
By Nguyen The Manh Supervisor Dr. Mokbul Morshed Ahmad

Economic Impacts of Micro-Credit on the Poor and Non-Poor Ethnic Minorities in Di Linh District, Vietnam
By K' Broi Supervisor Dr. Mokbul Morshed Ahmad

Performance of the Three Reductions, Three Gains Program in the Context of Sustainable Agricultural Development in Vietnam
By Tran Che Linh Supervisor Prof. Gopal Bahadur Thapa

Factors Influencing Rural Ruffian Gangster Activities in Rural Thailand: A Case Study in Social Development
By Pichapon Robru Supervisor Dr. Soparth Pongquan

Participation of NGOs and CSOs in Climate Change Policy Making and Practices in Bangladesh
By Fowzia Gulshana Rashid Lopa Supervisor Dr. Mokbul Morshed Ahmad

People's Participation in Natural Resources Management in a Community Protected Area in Cambodia
By Heng Hong Supervisor Dr. Soparth Pongquan

Vulnerability Assessment of People Living in Disaster Prone Ayeyawaddy Delta of Myanmar
By Zarni Soe Supervisor Prof. Jayant Kumar Routray

Assessment of Microfinance Groups in Myanmar
By Tun Tun Naing Supervisor Dr. Mokbul Morshed Ahmad

Performance Assessment of Village Health Volunteers for Health Development in Thailand
By Sukunya Plungsuchon Supervisor Dr. Soparth Pongquan

Migration of Chinese Youth for Higher Education in Thailand: Determinants and Opportunities
By Qi Xinjian Supervisor Prof. Jayant Kumar Routray

Effects of a Small Irrigation System on Crop Production and Farmers' Cereal Food Self-Sufficiency in Bac Ai District, Vietnam
By Nguyen Thi Thu Thuy Supervisor Prof. Gopal Bahadur Thapa

Performance of the Village Drinking Water System in Lao PDR
By Sumiva Viengkeo Supervisor Prof. Gopal Bahadur Thapa

Climate Change Vulnerability in Cambodia: A Perspective on

Adaptation Planning

By Goy Garcia Gustavo

Supervisor Prof. Jayant Kumar Routray

Access to Public Tuberculosis

Treatment Services in Rural Areas of Afghanistan

By Farid Ahmad Safi

Supervisor Prof. Gopal Bahadur Thapa

Economic Impacts of the

Natmataung National Park on the

Local Communities in Myanmar: A Survival Strategy of Two Villages

By Om Hung

Supervisor Prof. Jayant Kumar Routray

Benefit Assessment of Marketing Services of Agricultural Cooperatives in Cambodia: A Comparative Study

By Ngoun Eng

Supervisor Dr. Soparth Pongquan

Challenges and Opportunities for Sustainable Livelihood in Cambodia: A Case Study of Srepok Area

By Hang Vong

Supervisor Dr. Mokbul Morshed Ahmad

Inter-District Variation of Health Care Services in Balochistan, Pakistan

By Sanallah

Supervisor Prof. Gopal Bahadur Thapa

Chapter 5.11: SERD URBAN ENVIRONMENTAL MANAGEMENT FILED OF STUDY

5.11.1 Introduction

Urban Environmental Management (UEM) is an area of academic discourse and professional practice in which urban planning and urban management issues are studied and practiced from an environmental management perspective.

As an academic field, UEM provides opportunities of graduate level education and research at master (M.Sc.) and doctoral (PhD) level. It also provides certificate and diploma programs, as well as post-doctoral research opportunities. It draws on and integrates theories and perspectives in established disciplines of urban planning, urban and regional development, urban economics, sustainable development, and urban policy and management studies into a distinctive framework of problems, issues and questions concerning the urban environment. It enables students to identify problems; apply appropriate analytic methodologies; design, plan and implement programs and projects; and monitor impacts and challenges within the context of sustainable development in developing societies.

The Field of Study prepares students for professional careers in the public and private sectors as well as International development agencies

and civil society organizations engaged in urban development and environmental management.

5.11.2 Research Facilities and Laboratories

In this Field of Study, any researcher gets modern computer lab and other facilities for communication. There is also a workshop room for students which can accommodate about 24 students in four clusters at a time. The workshop room also has audio-visual facilities for presentation. A new Regional Urban Resource Center (R-URC) has been established for compiling and disseminating knowledge related to urban development and environmental management issues.

5.11.3 Faculty and Research Staff

Full-time Facult

EDSEL SAJOR, BSc, University of the Philippines; MA, PhD, ISS, The Hague, The Netherlands.

Associate Professor (Conflict Management; Governance; Land

Development in Peri-Urban; Policy Process and Scientific Discourse; Politics of Environmental Policy;

State-Society Relations in UEM; Urban Land Management)

L. A .S. RANJITH PERERA, BSc, MSc, University of

Moratuwa, Sri Lanka; MSc, PhD, AIT, Thailand.

Associate Professor (Urban Architecture and Environmental Design; Urban Planning and Housing; Urban Environmental Management, Results-based

Project Management and Evaluation)

VILAS NITIVATTANANON, BEng, Chulalongkorn Univ; MA, Thammasat University; MEng, AIT, Thailand PhD, University of Pittsburgh, USA.

Assistant Professor (*Management of Infrastructure and Services, Waste Recycling and Systems Management, Urban Environmental Management, Water Engineering and Management Economic and Environmental Assessment, Climate Change Risk Assessment and Adaptation*)

Visiting Faculty

SOO-HOON PARK, BEng, MEng, Seoul National Univ, Korea; MArch, UCLA, California, USA; PhD, Univ of Sydney, Australia

Visiting Associate Professor
(*Building Information Modeling*)

Adjunct Faculty

SAEED ZAKIAHMED, PhD, Asian Institute of Technology, Thailand
(*Urban Environmental and Planning and Design*)

Research Staff

Ms. Lena Sthapit, Research Associate

Ms. Le Thi Thu Huong, Research Specialist

Ms. Jhazine Damaso, Program Officer

Administrative Staff

Ms. Katesaraporn Nakdee, Secretary

5.11.4 Grants and Sponsored Research Completed in 2011

Post Consumer Carton (PCC) composition and recycling study

Duration: 25-Nov-10 31-Aug-11

Project Investigator(s): Vilas Nitivattananon

Sponsor: Tetra Pak Company Ltd.

Total Contracted Amount (THB):450,000

5.11.5 On-going Grants and Sponsored Research

Mekong Project 4 on Water Governance, Basin development challenges of CPWF

Duration:1-Mar-10 28-Feb-13

Project Investigator(s):Edsel

Sajor,Bernadette Resurreccion

Sponsor: CPWF

Total Contracted Amount

(THB):26,400,000

Strategic Environmental Assessment (SEA) for spatial planning and Capacity development for sustainable Tourism in the Golden Quadrangle development area of Greater Mekong Sub region

Duration:31-May-1030-Jun-12

Project Investigator(s): Vilas Nitivattananon

Sponsor:ADB

Total Contracted Amount (THB):379,033

International Climate Initiative 2010-Vulnerability and Adaptation to Climate Change in Coastal Cities of South East Asia

Duration:10-Jan-11 31-Dec-14 Project

Investigator(s): Vilas Nitivattan

Sponsor: Federal Ministry for the Environment Nature Conservation and Nuclear Safety BMU

Total Contracted Amount (THB):3,629,025

One year Profesional masters Program in Urban Management

Duration: 1-May-12 30-Apr-13

Project Investigator(s): Vilas

Nitivattananon Sponsor: Multi donors

Total Contracted Amount (THB): 3,348,000

5.11.6 Publications

International Journal Articles

Ali, G. and **Nitivattananon, V.** (2012). "Exercising Multidisciplinary Approach to Assess Interrelationship between Energy Use, Carbon Emission and Land Use Change in a

Metropolitan City of Pakistan", *Renewable & Sustainable Energy Reviews*, 16, pp. 775-786.

Ongsakul, R., Resurreccion, B., and **Sajor, E.** (2012).

Normalizing Maxculinities in Water Bureaucracy in Thailand. *International Journal of Public Administration*, (upcoming, accepted for publication 7 October 2011).

Prasertsubpakij, D. and **Nitivattananon, V.** "Evaluating accessibility to Bangkok Metro Systems using multi-dimensional criteria across user groups", *International Association of Traffic and Safety Sciences (IATSS) Research* (accepted for publication).

Suriyachan, C., **Nitivattananon, V.** and Amin, A.T.M.N. (2012). "Potential of decentralized wastewater management for urban development: Case of Bangkok", *Habitat International*, 36, pp. 85-92.

Kritsanaphan, A. and **Sajor, E.** (2011) "Intermediaries and Informal Interactions in Decentralized Environmental Management in Peri-Urban Bangkok", *International Development Planning Review*, 33(3), pp.247-271.

Lay, C. and Nitivattananon, V. (2011). "Is Importing Second-hand Products a Good Thing? The Cases of Computers and Tires in Cambodia", *Environmental Impact Assessment Review*, 31(3), pp. 187-194. Prasertsubpakij, D., **Nitivattananon,**

V. and lamtrakul, P. (2011) "Behavioral Responses to Metro Accessibility: A Gap between Physical and Non-Physical Approach", *Journal of Society for Transportation and Traffic Studies (JSTS)*, 2 (1), pp. 13-26.

Prasertsubpakij, D., Nitivattananon, V. and lamtrakul, P. (2011) "Multi-dimensional Factors Influencing Behavioral Responses to Metro Accessibility for Social Sustainability in Transport Systems and Strategies", *Journal of the Eastern Asia Society for Transportation Studies*, 9, pp.1128-1143.

Sa-nguanduan, N. and Nitivattananon, V. (2011). "Strategic Decision Making for Urban Water Reuse Application: A Case from Thailand", *Desalination* 268, pp. 141-149.

Tran, T. T. and Nitivattananon, V.(2011). "Adaptation to Flood Risks in Ho Chi Minh City, Vietnam", *International Journal of Climate Change Strategies and Management*, 3 (1), pp. 61-73.

Wirutskulshal, U., Sajor, E., and Coowanitwong, N. (2011) "Importance of context in adoption and progress in application of strategic environmental assessment: Experience of Thailand, *Environmental Impact Assessment Review*, 31, pp.352-359.

Refereed

Books/Chapters/Monographs

Hue, Thi Van Le and Sajor, E. (2011) "Livelihood and environment trade-off in *Doi Moi*: Industrail water use and wastewater management in a craft village in per-urban Hanoi" In K. lazarus, B. Resurreccion, No. Bardenoch and No. Dao (eds) *Water Rights and Social Justice in the Mekong Region*. London: EarthScan.

Resurreccion, B. and Sajor, E. (2011) "Gender, Technology and Migration in Export-Production of Shrimps: Identity Formation and Labour Practices in Surat Thani Province, Thailand" In D.T. Truong and D. Gasper (eds) *Transnational Migration and Human Security. The Migration-Development-Security Nexus*. Berlin: Springer. pp.183-196.

Conference Proceedings

Areerachakul, N., Nitivattananon, V. and Kandasamy, J. (2011). "The Use of Rain Water in Thailand: Case Study of Bangsaiy Municipality, Ayutthya ", 6th Dubrovnik Conference on Sustainable Development of Energy, Water and Environment Systems

Campus, Dubrovnik, Croatia, 25-29 September 2011.

5.11.7 Doctoral Students' Dissertation

Multi-dimensional Accessibility Assessment of Metro Systems for Sustainable Transportation in Bangkok Metropolitan Region

By Duangporn Prasertsubpakij
Supervisor: Dr. Vilas Nitivattananon

Potential of Decentralized Wastewater Management in Urban Development: Case of Bangkok, Thailand

By Chamawong Suriyachan
Supervisor: Dr. Vilas Nitivattananon

Institutional Constraints to Integration of Urban Sector in River Basin Management in the Context of Urbanization: A Case Study of Bang Pakong River Basin, Thailand

By Rutmanee Ongsakul
Supervisor: Dr. Edsel Sajor

Strategic Decision-Making System for Urban Water Reuse Application

By Nitirach Sa-nguanduan
Supervisor: Dr. Vilas Nitivattananon

5.11.8 Masters Students' Theses

A Case Study of a the Anti-Plastic Bags Campaign in Mandalay, Myanmar

By Naw Carol Moet Moet Aye
Supervisor:Dr. Edsel Sajor

Canal Water Variability and Its Impact on People's Living and Adaptation in the Context of Increasing Precipitation Change A Case of Klong Rangsit Canal, Thailand

By Kamonsorn Thanwiset
Supervisor:Dr. Edsel Sajor

Carrying Capacity of an Urban Conservation Area in terms of Transportation: A Case Study of Luang Prabang World Heritage City,

in Lao PDR

By Anousone Manisouk
Supervisor: Dr. Ranjith Perera

*Determinants of Resilience to a
Climate Change Related Extreme
Weather Event: Case Study of Urban
Communities in Metro Manila,
Philippines*

By Claudius Caezar B. Gabinete
Supervisor: Dr. Edsel Sajor

*Ecologically Sensitive Development
of New Tourism Destinations in the
Greater Mekong Sub-region*

By Dararat Khamchiangta
Supervisor: Dr. Ranjith Perera

*Land Use Planning through Strategic
Environmental Assessment
Applications: A Study of Climate
Change Induced Flooding in Ho Chi
Minh City, Vietnam*

By Tran Thanh Que
Supervisor: Dr. Vilas Nitivattananon

*Problems and Prospects of
Community Based Wastewater
Management: A Comparative Study
of Two Settlements in Vientiane, Lao
PDR*

By Thepphathai Phanka
Supervisor: Dr. Ranjith Perera

*Problems and Prospect of Enhancing
Urban Green Space as a Mitigation
and Adaptation Measure to Local
Warming; A Case Study of Bandung
City, Indonesia*

By Farida Khuril Maula
Supervisor: Dr. Ranjith Perera

*Study of a Paratransit Service Linking
Cibinon Town and Jakarta City
Center: An Exploration of the
Potential for Integration with the
Formal Transport System*

By Erika Pradana Putri
Supervisor: Dr. Ranjith Perera

Chapter 5.12: DISASTER PREPAREDNESS, MITIGATION AND MANAGEMENT AREA OF STUDY

5.12.1 Introduction

Rapid escalation and intensity in the incidence of severe disaster events have become a huge threat to the global community. Due to rapid rate of population growth, urbanization, poverty, climate change and geographical location, most of the Asian countries have become highly susceptible to natural disasters such as flood, cyclone, drought, earthquake, landslide, extreme temperature, heavy rain, epidemics, etc. It has been felt that there is limited capacity at global, regional and national levels in terms of knowledge base, skills training, long-term planning, emergency preparedness and policy development to respond to such severe disaster events. Consequently, this has given way to a new field of study at AIT to address these issues in innovative ways.

Disaster Preparedness, Mitigation and Management (DPMM) is an interdisciplinary academic program at AIT that started in August 2008. This program is initiated by both School of Environment and Technology (SET) and School of Environment Resources and Development (SERD). It aims to disseminate interdisciplinary

education and practices to manage and minimize the effects of disasters in people on the front lines of disaster response and preparedness. It provides professional education and short course training in Disaster Preparedness, Mitigation and Management.

DPMM works closely with its partners/collaborators namely, Asian Disaster Preparedness Center (ADPC), United Nations Office for the Coordination of Humanitarian Affairs (UNOCHA), Regional Office for Asia and the Pacific, Bangkok, The Regional Integrated Multi-Hazard Early Warning System for Africa and Asia (RIMES), Télécoms Sans Frontières (TSF) and United Nations Environment Programme Regional Resource Center for Asia and the Pacific (UNEP.RRCAP) to enhance a much wider understanding and knowledge sharing from the international to local level.

The courses at DPMM are designed and developed by AIT Faculties and experts from partner institutions having more than a decade of experience in this particular field. The program is being successfully run with students from Bangladesh,

Canada, France, India, Indonesia, Iran, Myanmar, Pakistan, Philippines, South Africa, Sudan, Thailand and Vietnam. DPMM has recruited 26 students till date. 7 students have already graduated from the program.

Details regarding DPMM program are available at <http://dpmm.ait.ac.th>

5.12.2 Faculty and Research Staff

Coordinating faculty members

School of Environment, Resources & Development (SERD)

Field of Study

Regional and Rural Development Planning (RRDP)

JAYANT K ROUTRAY, B.Sc. (Hons), M.Sc., PhD, Utkal University; MRP, Indian Institute of Technology, India.

Professor [*Regional and Rural Development Planning, Rural-Urban Relations, Regional Planning Methods and Techniques, Disaster Risk Reduction and Management, Climate Change Induced Adaptation, and GIS Applications*]

School of Engineering & Technology (SET)

Field of Study

Structural Engineering (STE)

PENNING WARNITCHAI, B.Eng. (Hon), Chulalongkorn University, Thailand; D.Eng., M.Eng., University of Tokyo, Japan.

Associate Professor [Earthquake Engineering]

Contributing faculty members

School of Engineering & Technology (SET)

Field of Study

Remote Sensing and Geographic Information Systems (RS&GIS)

KIYOSHI HONDA, B.Agr., D.Eng., University of Tokyo, Japan.

Associate Professor [Real-time Mapping and Simulation of Geological Processes]

NITIN KUMAR TRIPATHI, B.Tech., National Institute of Technology, Warangal, India; M.Tech., IIT; PhD, IIT, Kanpur, India.

Associate Professor [Remote Sensing and GIS for Disaster Mitigation]

Water Engineering and Management (WEM)

MUKAND S BABEL, B.Eng., Rajasthan Agricultural University, India; M.Eng., D.Eng., AIT, Thailand.

Associate Professor [Drought Forecasting and Management]

ROBERTO CLEMENTE, BSAE, University of the Philippines at Los Baños; M.Eng., AIT, Thailand; PhD, McGill University, Canada.

Associate Professor

[Floods and Droughts]

Geotechnical and Geoenvironmental Engineering (GTE)

NOPPADOL PHIEN-WEJ, B.Eng., Chulalongkorn University, Thailand; M.S., PhD, Illinois at Urbana-Champaign, USA.

Associate Professor *[Geological Hazards]*

School of Environment, Resources & Development (SERD)

Field of Study

Environmental Engineering and Management (EEM)

AJIT P ANNACHATRE, B.Tech., PhD, Indian Institute of Technology, Kanpur, India.

Professor *[Health and Ecological Risk Management]*

CHETTIYAPPAN VISVANATHAN, B.Tech., IIT, Madras, India; M.Eng., AIT, Thailand; PhD, InstNatIPolytech, Toulouse, France.

Professor *[Environmental Hazards Mitigation]*

OLEG V SHIPIN, PhD, Institute of Biochemistry and Physiology of Microorganisms, Moscow, Russia.

Associate Professor *[EIA & Disaster Management]*

Aquaculture and Aquatic Resources Management

AMRIT BART, B.A., Earlham College, USA; M.A., M.S., PhD, Auburn University, USA.

Associate Professor *[Coastal Resiliency and Disaster Preparedness]*

Gender and Development Studies (GDS)

KYOKO KUSAKABE, B.A., Sophia University, Tokyo, Japan; M.Sc., PhD, AIT, Thailand.

Associate Professor *[CBDRM & Gender Issues]*

Regional and Rural Development Planning (RRDP)

MOKBUL MORSHED AHMAD, B.Sc., M.Sc., Dhaka University, Bangladesh; M.Sc., AIT, Thailand; PhD, University of Durham, UK.

Associate Professor *[NGO Management, Community and Rural Development]*

Energy

SIVANAPPAN KUMAR, B.E., University of Madras, India; M.Eng., AIT, Thailand; PhD, InstNatIPolytechnique, Toulouse, France.

Professor [*Climate Change Mitigation*]

Urban Environmental Management (UEM)

L. A .S. RANJITH PERERA, B.Sc., M.Sc., University of Moratuwa, Sri Lanka; M.Sc., PhD, AIT, Thailand.

Associate Professor [*Disaster Management in Urban Environmental Planning*]

VILAS NITIVATTANANON, B.Eng., Chulalongkorn University; M.A., Thammasat University; M.Eng., AIT, Thailand; PhD, University of Pittsburgh, USA.

Assistant Professor [*Disaster Management in Urban Infrastructure Planning*]

Adjunct Faculty

JAYARAMAN K V POTTY B.Sc. University of Kerala, India; M.Sc., Cochin University of Science and Technology, India; PhD, Indian Institute of Technology, New Delhi, India.

Chief Scientist, Regional Integrated Multi Hazard Early Warning Systems (RIMES), [*Climate Prediction and Early Warning System*]

Affiliated Faculty

AKIYUKI KAWASAKI PhD, Yokohama National University, Japan; M.S., Yokohama National University, Japan; B.S., Yokohama National University, Japan.

Visiting Faculty [*Geospatial Technologies for Multidisciplinary Disaster & Water research*]

A R SUBBIAH

Regional Integrated Multi Hazard Early Warning Systems (RIMES), [*Climate Risk Management*]

ALOYSIUS REGO

Asian Disaster Preparedness Center (ADPC), [*Disaster Management System*]

BHICHIT RATTAKUL

Asian Disaster Preparedness Center (ADPC), [*Community Based Disaster Risk Management*]

CEES VAN WESTEN

Faculty of Geo-Information Science and Earth Observation (ITC), [*Landslide Hazards*]

DINAND ALKEMA

Faculty of Geo-Information Science and Earth Observation (ITC), [*Flood Hazards*]

LAL SAMARAKOON, B.Sc., University of Kelaniya, Sri Lanka; M.Sc., Saga University,

Japan, PhD, Ehime University, Japan.

Director, GIC [Geospatial Technology for Disaster Management]

MANZUL KUMAR HAZARIKA, PhD, University of Tokyo, Japan; M.Eng., Asian Institute of Technology, Bangkok, Thailand; M.Tech., Indian Institute of Technology, Kharagpur; B.Tech., J N KrishiVishwaVidyalyaya (J. N. Agriculture University), India.

Associate Director [Disaster Risk Assessment, Managing Disasters and CBDRM]

SUTAT WEESAKUL, D.Eng., M.Eng., Asian Institute of Technology; B.Eng., Chulalongkorn University, Thailand.

Affiliated Faculty [Tsunami and Coastal Engineering]

5.12.3 On-going Grants and Sponsored Research

Training on Public Health and Disaster Management

Duration: 6-Dec-10 31-Dec-12

Project Investigator(s): Jayant K Routray

Sponsor: Public Health Institute, National Ministry of Health, Sudan

Total Contracted Amount (THB): 2,419,691

Training course on Disaster Preparedness, Mitigation and Management

Duration: 16-May-11 31-Dec-12
Project Investigator(s): Jayant K Routray
Sponsor: Administrative Training Institute, Mysore, And Government of India
Total Contracted Amount (THB): 414,588

Training on Managing Rural Development

Duration: 1-Sep-11 31-Dec-12
Project Investigator(s): Jayant K Routray
Sponsor: Administrative training Institute Mysore Government of Karnataka India
Total Contracted Amount (THB): 1,194,472

5.12.4 Publications

Please refer to respective Field of Studies for publications

Conference Proceedings

Book Chapters

Book

5.12.5 Masters Students' Theses

Evaluation of Relief and Recovery Projects of FBOs in the Disaster Prone Areas of Myanmar

By Myat Lynn Thway
Supervisor Dr. Mokbul Morshed Ahmad

Climate Change Impacts on Dry Land Farmers of Myanmar and Coping Mechanisms

By Hung Ling
Supervisor Prof. Jayant Kumar Routray

Community Participation for Village Water Management in Cyclone Affected Areas in the Myanmar

Delta
By Ei Ei Khin
Supervisor Dr. Roberto S. Clemente

Landslide Susceptibility Analysis using Integrated Method of GIS and

Logistic Regression Model: A Case Study in Malang, East Java, Indonesia

By. Shahroz Hina
Supervisor Dr. Kyung-Ho Park

Landslide Susceptibility Analysis using Integrated Method of GIS and Logistic Regression Model: A Case Study in Malang, East Java, Indonesia

By. Shahroz Hina
Supervisor Dr. Akiyuki Kawasaki

Initial Development of Disaster Management Law in Myanmar - Internship Report

By Nwet Yin Aye
Supervisor Dr. Mokbul Morshed Ahmad

Building a Resilient Community Toward Earthquake Hazard: A Case Study in Yogyakarta, Indonesia
By Yudith Mariaran Tresnowati
Supervisor Dr. Mokbul Morshed Ahmad.

Chapter 5.13: GENDER, TRANSPORTATION AND DEVELOPMENT AREA OF STUDY

5.13.1 Introduction

Asia as a region has historically experienced high intra-mobility of goods and people, but in the recent years, the quantum of such mobility has increased dramatically. Various factors have contributed to this increase, including economic disparity within the region; differences in economic/employment/business opportunities; transportation and communication infrastructure development, education opportunities, and a wider network of migrants in major cities and industrial areas in the region.

The largest factor is the heavy investment in the construction and renovation of road networks. Road networks, which are important for regional integration within Asia, are critical for the less developed member countries, especially those in the Greater Mekong Subregion (GMS) countries. Recognizing this, bilateral and regional financial institutions supported heavily to improve the road network. The fact that people move both within and out of the region has implications not only for the well-being of migrants themselves, but also for the sending and receiving communities.

However, several questions remain. Have these roads actually contributed to poverty alleviation in the poorer regions of Asia? Or have they only increased the disparity between the rich and poor, resulting in future social tensions in the region?

The graduate course Gender, Transportation and Development (GTD) is a multi-disciplinary program that is problem-solving in nature. It focuses on specific problems of the effect of infrastructure planning and management on equitable and sustainable development for women and men. As a multi-disciplinary program, it focuses on:

1. Gender and development
2. Regional development planning
3. Infrastructure planning and management, with special focus on transportation engineering and management

It covers both the physical planning based on transportation engineering, and social, community and gender analysis and planning based on social science. It envisages developing planning and management theories and practices

Contextualized to Southeast Asia, especially the GMS region.

The program consists of required courses, elective courses and research (Thesis or Research Study). Required and elective courses are offered from the areas of gender and development, transportation engineering, regional development and planning, urban environmental management, and construction engineering and infrastructure management. The Area of Study has had the first batch of students in August 2008.

5.13.2 Faculty and Research Staff

Coordinating faculty members

KYOKO KUSAKABE, **Associate Professor**, Gender & Development Studies Field of Study, School of Environment, Resources & Development

SHINYA HANAOKA, **Visiting Associate Professor**, Transportation Engineering Field of Study, School of Engineering & Technology, and Associate Professor, Tokyo Institute of Technology, Japan.

Contributing faculty members

School of Engineering & Technology

Transportation Engineering Field of Study

HYUNMYUNG KIM, Assistant Professor
KUNNAWEE KANITPONG, Assistant Professor

HIRONORI KATO, Visiting Associate Professor, Associate Professor, Department of Civil Engineering, The University of Tokyo

PICHAJ TANEERANANON, Visiting Associate Professor

SHINJI TANAKA, Visiting Assistant Professor, Assistant Professor,

Institute of Industrial Science, the University of Tokyo, Japan

School of Environment, Resources & Development

Gender & Development Studies Field of Study

PHILIPPE DONEYS, Assistant Professor

Regional & Rural Development Planning Field of Study

JAYANT KUMAR ROUSTRAY, Professor

MOKBUL MORSHED AHMAD, Associate Professor

Urban Environmental Management Field of Study

VILAS NITTIVATTANANON, Assistant Professor

Research staff

LADA PHADUNGIATI, Project Researcher

TANARADEE KHUMYA, Project Researcher

Chapter 6: SCHOOL OF MANAGEMENT

6.1 Introduction

The School of Management (SOM) prides itself for having world class academic and professional programs. SOM is offering a PHD Program, Doctor of Business Administration (DBA) Program, Full time MBA Program, Executive Masters (EMBA) and Professional Masters in Technology Management (PMTM) programs. SOM was ranked third in 2004 by Asia Inc. among the MBA programs of South East Asia and 2008 SOM was ranked as the internationally known TOP school in Thailand.

SOM was established in October 1987 to meet the growing need for managerial expertise in the Asia – Pacific region. The School strongly believes in the need for intensive development of socially responsible corporate leaders for Asia. Currently SOM provides specialization in CSR, Entrepreneurship, Strategy, Management of Technology, Public Management, Marketing, Finance and other areas. The courses at SOM are taught by highly experienced faculty from over 15 nations.

SOM currently has students from over 30 countries and various academic backgrounds enrolled in its programs. In every case study, group work and assignment the students work in groups with students from 3

or more different nations. The bonds formed by the students during their stay in SOM have proved as important as the knowledge and skills they gain. At SOM we stress on ethics and moral values as much as the need to produce managers who can drive their organizations to profitability and prosperity.

6.2 Mission

Mission

“to develop socially responsible global leaders who will enhance organizational performance for the growth and sustainable development of economies and societies in Asia”

Vision

“to become the leading creator and disseminator of Asian management knowledge, practices and values”

Positioning

“A global management school which offers knowledge that promotes deep understanding of Asian management practices

6.3 School Governance

Dean of School

BARBARA IGEL, BA, MA, Technical Univ, Berlin; PhD, Freie Univ, Berlin, Germany.

Associate Professor(*High-tech Entrepreneurship*);

Industrial Economics; Knowledge Management;

Management of Innovation)

6.4 Management

Development and Research

The School of Management is involved in training and extension activities through the Management Development Programs (MDP). MDP was established as an integral part of the School of Management (SOM). It is the research, consultancy, and executive development arm of the School. It is SOM's non-degree academic activities and programs, which complement SOM's degree programs and other related activities of SOM. It facilitates the linkage between SOM, AIT and the business community and public sector in Asia.

The objectives of MDP:

To establish closer links between the business community/public sector and SOM through executive education programs and consulting

in the areas of Management of Technology, International Business, Service Marketing and Technology, and International Public Management.

To facilitate the development of research projects which are both of high practical value to the business community/public sector and academically rigorous.

MDP activities include:

- 1) Corporate relationship management
- 2) Executive development programs
- 3) Organizing executive forums, workshops, seminars, and conferences
- 4) Other activities contributing to SOM's objectives

6.5 Research Facilities and Laboratories

The School of Management has 5 state-of-the-art multimedia classrooms including a large amphitheater for academic use. Each classroom is equipped with a multimedia podium that consists of LCD projectors, audio cassette recorder, VHS player/ recorder, slide projectors, built-in desktop PC,

laptop and wireless internet connection.

The School of Management provides the students with an extensive range of online journals and database. The students can access the journal and database to read articles from reputed international journals. The School of Management has its own computer laboratory for instructional purposes and there is a network of over 60 computers for student's use.

Computer Lab consultants are available during office hours to assist with computer related problems. The consultants will provide help by answering general questions relating to the lab e.g., how to obtain a computer account, questions related to the PC Proficiency about software applications, email, printing etc.

6.6 Faculty and Research Staff

Full-time Faculty

RIAN BEISE-ZEE, Dipl. Ing. (Industrial Engineering), Technical University of Berlin, Dr.oec (Economics & Business),Germany

Associate Professor (*International Marketing, Innovation Marketing, Service Marketing*)

BARBARA IGEL, BA, MA, Technical Univ, Berlin; PhD, Freie Univ, Berlin, Germany.

Associate Professor(*High-tech Entrepreneurship; Industrial Economics; Knowledge Management; Management of Innovation*)

DO BA KHANG, MSc, EotvosLorandUniv, Hungary; MSc, DTechSc, AIT, Thailand.

Associate Professor(*Management Science; Operations Management; Project Management; Service Management; Small and medium enterprises (SME) support and management*)

DONYAPRUETH KRAIRIT, BS, ThammasatUniv, Thailand; MS, Univ of Colorado at Boulder; PhD, Massachusetts Inst of Tech, Cambridge, USA.

Associate Professor(*Technology, Policy and Management*)

SUNUNTA SIENGTHAI, BA, ChulalongkornUniv,Thailand; MA, PhD, Univ of Illinois, USA.

Associate Professor(*Labor & Industrial Relations, HRM, Wages & Productivity*)

ARUN KUMAR GOPALASWAMY, BCom, MCom, BangaloreUniv, India; PhD, Institute of Science,India.

Visiting Associate Professor(*Finance; Financial Accounting*)

SUNDAR VENKATESH, BSc, BL, Univ of Calcutta; PhD, Indian Inst of Management, India.

Visiting Professor (Finance; Accounting)

YUOSRE BADIR, M.S The Swiss Federal Institute of Technology Lausanne (EPFL), M.ScUniversity of Putra Malaysia, Ph.D (MOT) EPFL

Assistant Professor (Technology, International Strategic Alliance, Organization Theory and Design) NICHOLAS J DIMMITT, BA, MA, San Francisco State Univ; PhD, Univ of Southern California, USA.

Assistant Professor (Business Communication, Business Ethics, Research Methods)

JUTHATHIP JONGWANICH, BA, MA, ThammasatUniv, Thailand; PhD, The Australian National University, Australia

Assistant Professor (International Economics, Multinational Enterprises, Managerial Economics and Business environment)

VATCHARAPOL SUKHOTU, BEng, KasetsartUniv, Thailand; MEng, Univ of Houston, Texas, USA; PhD, Texas A&M Univ, College Station, Texas, USA

Assistant Professor (Operation Management and Supply Chain Management)

WINAI WONGSURAWAT, B.A.S (Econ & Math., Comp. Sc.) Stanford University USA PH.D (Managerial Econ and Strategy), Kellogg School of

Management, Northwestern University, USA

Assistant Professor (Strategic Management)

SUPASITH CHONGLERTTHAM, B. Engineering, ChulalongkornUniv, Thailand; MBA Finance, Tulane Univ, USA; PhD, Univ of Hawaii, Manoa, USA

Senior Instructor (Corporate Finance) Derivatives, Corporate Governance, Financial Accounting)

Visiting and Adjunct Faculty

NAZRUL ISLAM, BScEng, BUET, Bangladesh; MEng, DEng, AIT, Thailand.

Visiting Professor (Management of Technology; Technology and Development; Technology Policy; Technology Transfer)

FREDRIC W SWIERCZEK, BA, Temple Univ, USA; MA, PhD, Univ of Pittsburgh, Pennsylvania, USA.

Visiting Associate Professor (Behavioral Science; Organizational Development)

PETER MOSER Ph.D., M. Econ., University of St. Gallen, Switzerland

Visiting Faculty (European Integration and International Trade Policy)

URS BUMBACHER, M.A, Ph.D (Economics & Business Admin.), Univ. of Basel, Switzerland.

Adjunct Professor (International Business)

ILKKA KAURANEN, MS Engg, Lic Tech, DTech, Helsinki University of Technology, Finland.

Adjunct Professor (Development and Management in Industry)

INDRA M PANDEY, MComm, PhD, Univ of Delhi, India.

Adjunct Professor (Corporate

Finance, Emerging Capital Markets)

JOHN C S TANG, BS, MS, PhD, Univ of Florida, USA.

Adjunct Professor (Engineering Economy; International Economics; International Operating Environment of Business; Managerial Economics)

ARNE DEUSSEN, PhD, University of Geneva, Switzerland, Master (Lic.oec.HSG), University of ST.Gallen, Switzerland

Adjunct Faculty (Management of Change)

GERARD TOCQUER, Ph.D., University of Nice-SophiaAntipolis, France, M.A (Marketing), University of Sherbrooke, Canada, C.P.D., CornellUniversity, IthacaUSA

Adjunct Faculty (Service Innovation, Service Culture and Branding)

JARUNEE WONGLIMPIYARAT, Post Doctorate (Finance and Innovation) Boston University and Harvard

University USA, Ph.D (Tech Management) University of Manchester U.K, M.Sc. (Tech and Innovation Management) University of Sussex, U.K

Adjunct Faculty (Tech and Innovation, Technology Commercialization)

PHASIN SUEBSUBANUNT, Ph.D. (Business Admin.), Henley Management College, Brunel (West London) University, UK

MBA, School of Management, AIT, Thailand

Adjunct Faculty (Finance, Investment)

RAGNAR THOR GRUNDTVIG SØEGAARD, Ph.D London School of Foreign Trade, England, Master of Business Administration, University of Gothenburg, Sweden

Adjunct Faculty (Finance)

SOMROTE KOMOLAVANIJ, Ph.D, M.S., University of Texas, USA

Adjunct Faculty (Business Statistics, Economy, QC, Operations Research)

TRITOS LAOSIRIHONGTHONG, Ph.D., (Management of Technology) School of Management, AIT, Thailand

Adjunct Faculty (Manufacturing Strategy and Supply Chain Management)

WILLI ZIMMERMANN, Ph.D. (Political Science) University of Munich,

Germany, Post-Doc. Diploma, Swiss Federal Institute of Technology Switzerland

Adjunct Faculty (Public Sector Management, Environmental Management)

LALIT M JOHRI, BSc(Hons), MSc, MBA, PhD, Univ of Delhi, India.

Adjunct Faculty (International Business; International Joint Ventures; Marketing; Negotiations; Strategic Management)

MARK NEAL, B.A (Hons.) Sociology, university of Reading, U.K, Ph.D (Mgmt), The Business School, Bournemouth University, U.K

Adjunct Faculty (Cross-Cultural Management, Gender and Organization Leadership)

TRUONG QUANG, MPA, National Institute of Administration, Vietnam; Ph.D (Social Sciences), Drs. (Political Science), Free Universiteit, The Netherlands.

Adjunct Faculty (Organizational Behavior, HRM)

LOGAN MULLER, Ph.D (Sustainability), Kennedy Western University, USA.

Adjunct Faculty (International Business)

RUDOLF GRUENIG, Ph.D(BA), University of Bern, Switzerland.

Adjunct Faculty (Strategic Management)

EVANGELOS ANGELOS AFENDRAS, B.A., M.A, Ph.D(Humanities-Linguistics) The Johns Hopkins Univ., USA.

Adjunct Faculty (Cross-Cultural Management, Organization Behavior, Management of Change)

ALLAN WILLIAM, B.Ed., Univ. of Tasmania; MSc., Ph.D(Organization Development) MITASH Univ., USA.

Adjunct Faculty (Organization Behavior, Leadership & Business Performance)

ROBERT S. KIETEL, BA, Univ. of Colorado; Ph.D, De La Salle University, The Philippines.

Adjunct Faculty (HRM, Leadership)

ASHISH SADH, M.B.A., A.P.S. Univ., Rewa. Ph.D (Marketing) Devi Ahilya Univ., Indore.

Adjunct Faculty (Sales and Marketing)

ROLAND AMOUSSOU-GUENOU, LL.B in Business Law, National Univ. of Benin. LL.M in International Business Law, Univ. of Toulouse. Ph.D. in International Law, Univ of Paris, France.

Adjunct Faculty (Policy and Legal Issues)

SANKA SRINIVAS SUBRAMANYAM KUMAR, B.Teach. REC, Calicut.M.B.A. Sri venkateswara Univ. Tirupati.Ph.D. (International Finance) Indian School of Mines, Dhanbad.

Adjunct Faculty (Finance)

SHIVANAND BASAYYA HIRREMAATH, B.Sc., M.Sc., Karnatak Univ. Ph.D. Indian Institute of Technology, Powai, Bombay.

Adjunct Faculty (Information Technology)

JANAKIRAMAN MOORTHY, B.Sc., Univ of Annamalai, M.Sc., Univ of Tamil Nadu Agricultural, Ph.D (Fellow Prog. In Management) Indian Institute of Management, India

Adjunct Faculty (Advanced Marketing Management, International Business)

ASHUTOSH P. BHUPATKAR, B.Com., Univ of Pune, MMS, Univ of Mumbai, Ph.D (Management) Univ of Pune, India

Adjunct Faculty (Management, Indigenous Management, Systems theory, Project Management, Education)

DHRUV DEV SHARMA, B.Sc., MBA, Ph.D (MIS) Univ of Himachal Pradesh, India

Adjunct Faculty (Entrepreneurship Development, Management)

6.7 Grants and Sponsored Research Completed in 2011

Executive MBA-BKK Program, May 2008

Duration: 1-May-08 31-Mar-11
Project Investigator(s): Nicholas J. Dimmitt, Barbara Igel
Sponsor: Professional managers/administrators of private/public sector
Total Contracted Amount (THB): 9,000,000

Executive MBA program in HRM 2009 intake

Duration: 1-Jan-09 31-Jan-11
Project Investigator(s): Sununta Siengthai
Sponsor: SIDA
Total Contracted Amount (THB): 14,912,000

Methodologies and tools for food consumer market research

Duration: 1-Jul-09 28-Feb-11
Project Investigator(s): Rian Beise Zee
Sponsor: Food and Agriculture Organization of United Nations
Total Contracted Amount (THB): 1,382,276

Executive MBA BGK Program August 09

Duration: 1-Aug-09 31-Jul-11
Project Investigator(s): Nicholas J Dimmitt / Barbara Igel
Sponsor: Multi donors
Total Contracted Amount (THB): 11,416,000

International Executive MBA for Vietnam for HCMC #6.1HCMC#6.2DN#3VT#2

Duration: 1-Aug-09 31-Dec-11
Project Investigator(s): Do Ba Khang

Sponsor: Multi donors
Total Contracted Amount (THB): 46,627,384

International Executive MBA for Vietnam for Hanoi #10.1 & 10.2

Duration: 1-Aug-09 31-Dec-11
Project Investigator(s): Do Ba Khang
Sponsor: Multi donors
Total Contracted Amount (THB): 14,875,005

ProSPER.Net Business Schools Joint Project on Integration of Social Business and UN Global compact principals in Business Education

Duration: 1-Jan-10 30-Nov-11
Project Investigator(s): Richard Welford
Sponsor: Ministry of the Environment of Japan through UNU-IAS
Total Contracted Amount (THB): 2,810,880

6.8 On-going Grants and Sponsored Research

DBA Program in Bangkok 2006

Duration: 31-Oct-06 31-Dec-13
Project Investigator(s): Indra Pandey, Nicholas Dimmitt, Freidric Swirczek, Rian Beise-zee, Nazrul Islam, Do Ba Khang, Sundar Venkatesh, Sununta Siengthai, Lalit Johri
Sponsor: Participants
Total Contracted Amount (THB): 15,552,000

DBA Program in Sri Lanka 2006

Duration: 31-Oct-06 31-Dec-13
Project Investigator(s): Nicholas Dimmitt, Do Ba Khang, Sundar Venkatesh, Sununta Siengthai, Nazrul Islam, Lalit Johri
Sponsor: Participants
Total Contracted Amount (THB): 11,988,000

DBA Program in Bangkok 2007

Duration: 1-Feb-07 31-Jan-14

Project Investigator(s): Indra Pandey, Nicholas Dimmit, Freidric Swirczek, Rian Beise-zee, Nazrul Islam, Do Ba Khang, Sundar Venkatesh, Sununta Siengthai, Lalit Johri

Sponsor: Participants

Total Contracted Amount (THB): 19,440,000

DBA Program in HCMC 2007

Duration: 1-Feb-07 31-Jan-14

Project Investigator(s): Indra Pandey, Nicholas Dimmit, Freidric Swirczek, Rian Beise-zee, Do Ba Khang, Sundar Venkatesh, Sununta Siengthai, Nazrul Islam, Lalit Johri, Illka Kauranen

Sponsor: Participants

Total Contracted Amount (THB): 14,000,000

DBA Program in Taiwan 2007

Duration: 1-Nov-07 31-Dec-14

Project Investigator(s): Indra Pandey, Nicholas Dimmit, Freidric Swirczek, Do Ba Khang, Sundar Venkatesh, Sununta Siengthai, Nazrul Islam, Illka Kauranen

Sponsor: Participants

Total Contracted Amount (THB): 14,025,000

DBA Program in Bangkok 2008

Duration: 1-Jan-08 31-Dec-14

Project Investigator(s): Nicholas Dimmit, Do Ba Khang, Sundar Venkatesh, Sununta Siengthai, Nazrul Islam, Lalit Johri

Sponsor: Participants

Total Contracted Amount (THB): 16,848,000

DBA Program in HCMC 2009

Duration: 20-Jan-09 31-Dec-12

Project Investigator(s): Barbara Igel
Sponsor: Professional managers

Total Contracted Amount (THB): 7,425,000

International Executive MBA for Vietnam for Hanoi #11.1 & 10.2

Duration: 1-Aug-10 31-Dec-12

Project Investigator(s): Do Ba Khang

Sponsor: Multi donors

Total Contracted Amount (THB): 16,500,000

International Executive MBA for Vietnam for HCMC 7.1

Duration: 1-Aug-10 31-Dec-12

Project Investigator(s): Do Ba Khang

Sponsor: Multi donors

Total Contracted Amount (THB): 15,675,125

International Executive MBA for Vietnam for VT#3

Duration: 1-Jan-11 30-Apr-13

Project Investigator(s): Do Ba Khang

Sponsor: Multi donors

Total Contracted Amount (THB): 9,333,546

Executive MBA-BKK Program, August 2010

Duration: 1-Aug-10 31-Jul-12

Project Investigator(s): Barbara Igel,

Sponsor: Multi donors

Total Contracted Amount (THB): 8,100,000

Third Public Management Executive Development Program

Duration: 1-Aug-11 31-May-12

Project Investigator(s): Sununta Siengthai

Sponsor: The Damrong Rajanupab Research and Development Institute
DRRDI

Total Contracted Amount (THB): 1,311,000

6.8 Publications

International Journal Articles

Marshall, A. (2011) The Middle Ground for Nuclear Waste Management: the Social and Ethical Aspects of Shallow Storage of Radioactive Waste. *International Journal of Technoethics*, Vol 2, Issue 2, pp1-13

Marshall, A (2011) Should Thailand go Nuclear?, *Journal of Asian Public Policy*, Vol. 4 No. 2, pp1-6.

Vanichchinda A. and B. Igel (2011), "The Impact of total quality management on supply chain management and firm's supply performance", *International Journal of Production Research*, Vol. 49, No. 11, pp. 3405-3424

Igel, B. and P. Kanjanasanpeth (2011): A reliable measurement scale to assess benefits of extended Enterprise Resource Planning (ERP), *Business Process Management Journal*, Emerald (under review)

Abdul Qayyum, Do Ba Khang, Donyaprueth Krairit, *An analysis of the antecedents of loyalty and the moderating role of customer demographics in an emerging mobile phone industry*, (accepted for publication in *International Journal of Emerging Markets*).

Parichart Rachapradit, John Tang, Do Ba Khang, *CEO turnover and firm performance from Thailand*,

(Accepted for publication in Corporate Governance).

Phumisak Smutkupt, Donyaprueth Krairit, Do Ba Khang, ***The impact of permission-based mobile advertising on consumer brand knowledge, International Journal of Mobile Marketing***, Vol 6, No. 1, 2011

Theera Erawan, Donyaprueth Krairit, Do Ba Khang, ***Tourist's external information search behavior model: the case of Thailand***, Journal of Modelling in Management, Vol. 6 Iss: 3, pp. 297-316, 211

Sirawit Sirarak, Nazrul Islam, Do Ba Khang, ***Does ICT adoption enhances hotel performance? Journal of Hospitality and Tourism Technology***, Vol. 2 Iss: 1, pp. 34-49, 2011

Ferguson, D.L.(2011);CSR in Asian Logistics: Operationalization within DHL (Thailand); International Journal of Management Development; Emerald;2011 , Vol.30 Iss:10, pg.985-999

Jongwanich J., M. Bautista and J.W Lee, (2011), 'When Are Capital Controls Effective? Evidence from Malaysia and Thailand, International Economic Journal, vol. 25(4): 619-651.

Jongwanich, J and D. Park (2011), 'Inflation in developing Asia: pass-through from global

food and oil price shocks", Asian-Pacific Economic Literature, 25 (1): 79-92.

Jongwanich, J., M. Bautista and J.W Lee, 'When Are Capital Controls Effective? Evidence from Malaysia and Thailand, International Economic Journal (in October 2011)

Sirirak, S., **Islam, N.** and Khang D.B. (2011); Does ICT Adoption Enhance Hotel Performance?; *Journal of Hospitality and Tourism Technology*, Vol 2 No. 1, 2011, pp. 34-49. (Emerald Publications)

Islam, N. and Sirirak, S.; A Comparative study of the influence of ICT adoption in three star and four & five-star hotel performance; *Journal of Hospitality and Tourism Technology*; Emerald Publications

Veerasonthorn, R., Beise-Zee, R., Sivayathorn, A. (2011) Service Quality as a Driver for Medical Tourism, *International Journal of Leisure and Tourism Marketing*, Vol. 2, No 2, 140-158

Sheik, Sana-ur-Rehman, Beise-Zee, R. (2011), Corporate Social Responsibility or Cause Related Marketing? The Role of Cause Specificity of CSR, Journal of Consumer Marketing, Vol. 28 (1), 27-39.

Zander, L.; A. Mockaitis; and A. W. Harzing (2011) "Standardization vs. contextualization: A study of leadership and language across

17 countries", *Journal of World Business*, 46 (2011) 296–304

D.S. Sukirno, D.S. and Sununta Siengthai, (2011) "Does participative decision making affect lecturer performance in higher education?", *International Journal of Educational Management*, Vol. 25 Iss: 5, pp.494 – 508

Pinprayong, Boriboon (2011) "Strategy of Business Sustainability in the Banking Industry of Thailand: A Case of Siam Commercial Bank," *World Journal of Social Sciences*, Vol. 1, No.3, July, pp.82-99.

Mukhtar, Uzma; Md. Zohurul Islam; and Sununta Siengthai (2011, forthcoming) "Conflicts in Higher education and Perceived Quality of Education: Empirical evidence from Pakistan," *Research and Higher Education Journal*, Vol. 13, October.

Tsai, Chung-Chou; Sununta Siengthai; Donyapreuth Krairit and Lalit M. Johri (2011) "Using Multi-methodology to Drive Value Chain Reconfiguration: Knowledge-Integrated Traceability of Tool Variables and System Dynamics," *Journal of Information and Knowledge Management*, December, pp. 327-341.

Sukhotu, V. (2011). Retail single-trip in-store replenishment. *Journal of Supply Chain Management: Research & Practice*, 5, 4-11.

Winai Wongsurawat, "Core Constructs of Corporate Social

Responsibility: A Path Analysis" (with Chih Hung Chen), *Asia Pacific Journal of Business Administration*, 3(1), February 2011

Winai Wongsurawat, "Management Fees and Total Expenses of Mutual Funds in Thailand", *Journal of the Asia Pacific Economy*, 16 (1), February 2011.

Winai Wongsurawat, "What's A Comment Worth? How to Better Understand Student Evaluations of Teaching", *Quality Assurance in Education*, 19 (1), February 2011.

Winai Wongsurawat, "Education Reform and the Academic Performance of Public and Private School Students in Thailand", *Education Research for Policy and Practice*, 10 (1) February 2011.

Winai Wongsurawat, "ihere.tv -- Thailand's Online Media Entrepreneurs", *Emerald Emerging Markets Case Studies Collection*, April 2011.

Winai Wongsurawat, "Newly empowered: experiences of young leaders in Vietnam", (with Tran Thuy Trang), *Emerald Emerging Markets Case Studies Collection*, April 2011

Jongwanich, J (2011), "Foreign Direct Investment in Emerging Asia: Implications of the International Production Network", in Firm-level internationalisation, regionalism and globalisation, Elaine Hutson, Rudolf R. Sinkovics and Jenny Berrill (Eds.), London: Palgrave Macmillan.

Sae Pung, Wannee; D.S. Sukirno; Sununta Siengthai (2011) "The Study of Organizational Citizenship Behavior (OCB) and Job Satisfaction in the Retail Industry in Indonesia." *World Review of Business Research*, Vol. 1. No. 3. July 2011, pp. 162-178

Badir, Y. and Gina O'Connor. Identifying the strength of ties with a strategic partner: The tradeoff between interorganizational learning benefits and transaction cost consideration. *Journal of Management* (under review).

Luliya, Teeratansirikool, Sununta Siengthai, A manuscript titled Competitive strategies and firm performance: The mediating role of performance measurement, *International Journal of Productivity and Performance Management*

Syed Abdulla MAmun and Badir, Y. 2011. The impact of internal corporate governance on value addition efficiency of resources in top listed Companies in an emerging economy, *Asia Pacific Journal of Business Administration* (Under review)

Chonlatis Darawong, Barbara Igel, and Badir, Y. 2011. Cross-cultural communication and interpersonal conflict in new product development team: moderating effects of culture of origin, *International Journal of Conflict Management* (Under review)

Badir, Y., Buchel, B, and Tucci, C. 2011. The Effect of Empowering an Alliance-based NPD Project Team and Leader on Intensity Level and Media-Richness of Communication with the Project's Partners: A Contingency Model. *International Journal of Project Management* (Second Round revision).

Conference Proceeding

Badir, Y. & Igel, B. 2011. The Required Intensity and Media – richness of Communication among Strategic Partners in New Product Development Projects, IEEE International Technology Management Conference (ITMC) proceeding, Page 394 – 403, June 27-30, 2011, San Jose, USA.

Sae Pung, Wannee; Sukirno, D.S.; Siengthai, Sununta (2011) "The Study of Organizational Citizenship Behavior (OCB) and Job Satisfaction in Indonesian Retail Industry." A paper presented at the Asia-Pacific Business Research Conference, Hotel Istana, Kuala Lumpur, Malaysia. Awarded the Best Paper in the Management Studies Track.

Sae Pung, Wannee and Siengthai, Sununta (2011) " The Study of Organizational Citizenship Behavior (OCB) and Job Satisfaction in Retail Industry in Thailand." A paper presented at the 12th International Conference on Global Business and Economic Development (SGBED), held at Singapore Management

University, Singapore, July 21-23, 2011.

Tsai, Chung-Chou; Sununta Siengthai, Donyaprueth Krairit and Lalit Johri (2011) "A Computer-Aided Process Model to Navigate Value chain Reconfiguration Using a Three-Layered Methodology". A paper to be presented at the 12th International Conference on Global Business and Economic Development (SGBED), held at Singapore Management University, Singapore, July 21-23, 2011.

Monthon Sorakraikittikul and Sununta Siengthai (2011) "The Mediating Effect of Knowledge Sharing Behaviors on Employee Job Satisfaction in the Context of Learning Organization" A Paper presented at the 12th International Conference on Global Business and Economic Development (SGBED), To be held at Singapore Management University, Singapore, July 21-23, 2011.

Bordoi, P. and Islam, N. (2011); A Framework Linking Knowledge Management Practices and Healthcare Delivery Performance; 8th International Conference on Intellectual Capital, Knowledge Management and Organizational Learning; organized by Academic Conferences

International (ACI), UK; 27-28 October 2011, Bangkok

Darawong, Ch., B Igel and Y.F. Badir (2011): The impact of communication on interpersonal conflict in new product development (NPD) team in MNCs, "Managing Technology in Challenging Times." 2011 IEEE International Technology Management Conference, San Jose, California, June 27-30, 2011

6.9 Doctoral Students' Dissertation

Factors Influencing Willingness to Save

By Preecha Swaspeera
Supervisor: Prof. Indra M. Pandey/Dr. Sununta Siengthai

An Emperical Study of the Link Between Corporate Social Responsibility and International Standards - A View Point from Taiwan

By Chih-hung Chen
Supervisor: Dr. Winai Wongsurawat

Outsmarting Architecture with Publishing Value Chain By Chung-Chou Tsai
Supervisor: Dr. Sununta Siengthai

he Influence of Information and Communication Technology Adoption on Hotel Performance: A Case of Phuket, Thailand

By Sirawit Sirirak
Supervisor: Prof. Nazrul Islam Dr. Do Ba Khang

Development of Tourists' External Information Search Behavior Model: The Case of Thailand

By Theera Erawan
Supervisor: Dr. Donyaprueth Krairit

Determinants and Impact of Organizational Conflict on Organizational Effectiveness: An Empirical Evidence of Pakistan Public Universities

By Uzma Mukhtar
Supervisors: Dr. Sununta Siengthai

Factors Influencing Job Performance in Higher Education Institutions in Indonesia

By Sukirno
Supervisors: Dr. Sununta Siengthai

Performance Measurement Integratedness and Its Antecedents

By Luu Trong Tuan
Supervisor: Dr. Sununta Siengthai

An Emperical Study of the Link Between Corporate Social Responsibility and International Standards - A View Point from Taiwan

By Chih-hung Chen
Supervisor: Dr. Winai Wongsurawat

Outsmarting Architecture with Publishing Value Chain

By Chung-Chou Tsai
Supervisor: Dr. Sununta Siengthai

The Effects of Mobile Marketing on Consumer Perception of Brand Equity

By Phumisak Smutkupt
Supervisor: Dr. Donyaprueth Krairit

Antecedents of Customer Loyalty and the Role of Moderating and Mediating Variables: A Case of the Mobile Phone Industry of Pakistan

By Abdul Qayyum Supervisor: Dr. Do Ba Khang

6.10 Masters Students' Theses, Research Studies and Projects

How Customer Perceived Value Attributes Influence the Pricing on Electrical Distribution Products: A Case of Schneider Electric (Thailand)
By Linli Zhu Supervisor Dr. Winai Wongsurawat

Strategies for Thai Orchid Producers: The Value Chain Analysis Approach
By Kirana Praimanee
Supervisor Dr. Winai Wongsurawat

The Effect of Economic Indices on Stock Returns of Petroleum Companies in the Stock Exchange of Thailand
By Sireewon Viriyayudhakorn
Supervisor Dr. Winai Wongsurawat

Optimal Mobile Number Portability Strategies for AIS, the Incumbent Thailand's Mobile Market Leader
By Russada Tantimekabut
Supervisor Dr Donyaprueth Krairit

The Link between Financial Literacy and Financial Behavior: A Study of Factory Workers in Nakhon Ratchasima
By Sararak Ruangtananurak
Supervisor Dr. Winai Wongsurawat

Portfolio Diversification Strategies for European Investors in East Asian and Southeast Asian Markets Using Excel Spreadsheet and SPSS Program
By Chattip Tippiriyapong
Supervisor Dr. Arun Kumar
Gopaldaswamy

Nepal's Emerging Trade with China
By Parmita Shakya
Supervisor Dr. Winai Wongsurawat

Equity and Firm Valuation of NetCity LLC
By Ilhomjon U. Isomitdinov
Supervisor: Dr. Arun Kumar
Gopaldaswamy

STP Model and Marketing Mix for GRINDCARE: A Case Study of an Innovative Medical Device by MEDOTECH A/S in Denmark and Sweden
By Krit Wuttisattayaban
Supervisor Dr Donyaprueth Krairit

Decision Making and Buying Behavior: A Case Study of Professional Master's Degree Program
By Nutthaya Lueangkamnoet
Supervisor Dr. Sununta Siengthai

Coal Hauling Cycle Time and Operational Performance in Mining Industry: A Case Study of PT.Trubaindo Coal Mining, Indonesia
By Patarawan Chaowasakoo
Supervisor Dr. Winai Wongsurawat

Customer Segmentation for Bancassurance Products in Bangkok Insurance Inc.
By Ramakrishnan Venkatraman
Supervisor Dr. Arun Kumar
Gopaldaswamy

Husqvarna Distribution Strategy in Africa
By Bikendra Shamsher Thapa
Supervisor Dr. Winai Wongsurawat

Competitiveness of Thailand in Latin American Markets

By Buntarika Ketsiri
Supervisor Dr. Juthathip Jongwanich

Market Entry of Bingo Products of ITC in India: A Retail Store-Check Evaluation
By Aritra Majumdar
Supervisor Dr. Rian Beise-Zee

Corporate Social Responsibility in the Hotel Industry with a Focus on Environmental Issues: A Case Study of Boracay, Philippines
By Olga Olegovna Shipina
Supervisor Dr. Nicholas J. Dimmitt

Do Mergers & Acquisitions Create Value?
By Hannes Braumann
Supervisor Dr. Sununta Siengthai

An Experience in the Music Industry
By Julien Zanni
Supervisor Dr. Donyaprueth Krairit

Monitoring and Evaluation Practice in ODA Projects in Vietnam
By Nguyen Thi Thu Huyen
Supervisor Dr. Do Ba Khang

How VICEM HT Can Strengthen Its Core Market and Take Full Advantage of Globalization
By Doan Minh Duy
Supervisor Dr. Winai Wongsurawat

Improving the Performance of Information Technology Operation in Ha Tien 1 Company
By Doan Tran Minh Phuong
Supervisor Dr. Yuosre Badir

Improving Efficiency of the Bread SBU at Kinh Do Corporation, Vietnam

By Vo Duy Linh
Supervisor Dr. Huynh Trung Luong

Reorganization of Sonadezi Corporation

By Dinh Ngoc Thuan
Supervisor Dr. Sununta Siengthai

Developing An E- Business Strategy for Phu An Thanh Investment & Consultancy Co., Ltd.

By Tran Nhu Hung
Supervisor Dr. Winai Wongsurawat

Developing New Strategies for the Construction Business of Anthinh Saigon Corporation (ATG)

By Nguyen Dinh Khoi
Supervisor Dr. Winai Wongsurawat

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Improving the Inventory Management Operation in Ha Tien 1 Cement Joint Stock Company

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Developing Technology Strategy: A Case Study in Vietnam for an Air Treatment

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Solutions to Enhance Internal Control of Customer Personal Service at the Bank for Investment and Development of Vietnam, Saigon

Branch, Ho Chi Minh, Vietnam

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Chapter 7: AIT EXTENSION

7.1 Introduction

AIT Extension is responsible for non-degree programs at AIT. As the continuing professional development and short-course training arm of the institute, we identify and respond to opportunities in the region for continuing professional education, short-course training and consultancy services, and in this way contribute to the realization of AIT's mission to develop highly qualified and committed professionals who play a leading role in the sustainable development of the region and its integration into the global economy.

We work with professionals in national governments, overseas development agencies, multilateral agencies, development institutions, private sector, development banks, consultants and NGOs.

AIT Extension's operating programs are:

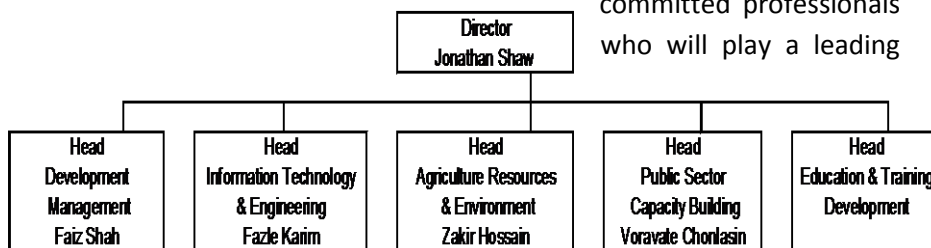
- Agriculture, Resources and Environment
- Education and Training Development
- Public Sector Capacity Building
- Development Management

- Information Technology and Engineering

7.2 Mission

To identify and respond to regional opportunities for continuing education, training and consultancy, and thus help to realize AIT's mission to develop highly qualified and committed professionals who will play a leading role in the sustainable development of the region and its integration into the global economy.

7.3 Unit Governance



Courses and Services

AIT Extension offers courses in the following specializations:

- Agriculture and Food Processing
- Environment and Natural Resources Management

Education and Training Development

- Poverty Reduction and Livelihoods Development

- Business Performance, Management and Strategy

- Development Effectiveness

- Public Sector Services and Management

- Private Sector Development

To identify and respond to regional opportunities for continuing education, training and consultancy, and thus help to realize AIT's mission to develop highly qualified and committed professionals who will play a leading

role in the sustainable development of the region and its integration into the global economy.

Information and Communication Technologies

- Information and Communication Management

- Infrastructure Development and Public Utility Management

Most international training courses usually last from one to three weeks.

Customized Courses

AIT Extension specializes in designing, developing and implementing short courses to the specifications of particular client organizations. Every organization with which we work is unique, and change interventions required by our clients are most usually specific to that organization. Wherever required, therefore, we work closely with our clients to develop unique training solutions that meet their specific needs. This process will usually start with the clients' own terms of reference, to which AIT Extension responds. Meetings are scheduled with the client to discuss all aspects of the required training, and to ensure that the client's needs are met.

Exposure Visit Programs

Many professionals are interested in field visits to observe best practices in their field. Exposure visits are designed to provide senior government officials and decision makers with opportunities to visit and observe current technology and practices in their fields, to exchange information, to exchange experiences with local counterparts, project personnel and beneficiaries on development and management of similar projects, and to exchange views with participants from other countries. At the end of each program, a seminar is conducted at AIT to enable participants to reflect

on what has been learned and what can be adapted to their own development contexts.

Thailand provides numerous examples of best practice in a wide diversity of fields. AIT Extension is also experienced in organizing exposure visit programs to many countries in the region, with recent experience in Vietnam, Laos, Malaysia, Korea, Philippines, Indonesia, Singapore and the UK.

Consulting Services

AIT Extension professional staff offer a wide range of technical assistance and consulting services. These include:

- **Human Resource Development:** Development of human resource development (HRD) programs and projects; assessment of training needs in organizations; evaluation of training courses, projects or plans; review and evaluation of the management and operation of training centers; management and implementation of training development projects.
- **Educational Development:** Curriculum design and development; evaluation of educational programs and projects; management and implementation of educational development projects; report writing and documentation.
- **Information Technology:** Strategic information technology

planning; information system analysis and design; IT project management.

7.4 Learning Approach

Our teaching and learning approach is to apply best practices in training, based on established principles of adult learning.

Training strategies that we use are consistent with the principles of adult learning: peer learning, reflective thinking, problem based learning, participatory learning and experiential learning. We aim to maximize learning by mixing these approaches appropriate to each learning context.

Methods used include short presentations, group discussions, case studies, workshops, individual exercises, simulation, role-plays, project work, peer learning and exposure visits. Training sessions are designed to allow participants the scope to interact with resource persons and actively engage in the learning process.

Participants benefit from close personal attention by AIT Extension staff. Our typical training course provides five to six hours of workshop sessions every weekday, with extensive social and cultural trips organized at the weekends in courses of two weeks or longer.

ICTs relevant and appropriate to every group of participants are incorporated into the course design.

Feedback from participants in one course is a critical input to subsequent courses. All our training courses are undertaken with the aim of continuous quality improvement.

All AIT Extension activities take advantage of AIT's stimulating academic and social environment, and the Institute's multicultural English-speaking academic community.

7.5 Training Resources

AIT Extension has a wide pool of academic and professional Resource Persons drawn from AIT's schools, and from leading international and local organization in the region.

Its professional staffs are specialists in human resources development, curriculum planning, instructional system design, information technology application development and other specific technological areas.

It has state-of-the-art educational and information technologies incorporated into all training facilities on campus.

Presenting a serene and relaxing environment for study AIT's campus show cases hotel and student dormitory accommodation, a medical clinic, an international cafeteria, several restaurants and

sports facilities including tennis and squash courts, a golf course and a swimming pool.

7.6 Grants and Sponsored Trainings Completed in 2011

In Country Training: Seminar on Leadership and Work Ethics

Duration: 3-Mar-09 28-Feb-11
Project Investigator(s): Bahul Raj Shrestha
Sponsor: Government of Maldives
Total Contracted Amount (THB): 272,000

SAP-AIT University Alliance Program

Duration: 1-Jan-10 31-Mar-11
Project Investigator(s): Fazle Karim
Sponsor: Multi donors
Total Contracted Amount (THB):542,500

Building Partnerships with Business for development

Duration: 14-Jun-10 31-Mar-11
Project Investigator(s): Leena Wokeck
Sponsor: Multi donors
Total Contracted Amount (THB): 100,800

Hospital Management

Duration: 30-Aug-10 30-Dec-11
Project Investigator(s): Voravate Chonlasin
Sponsor: Government of Karnataka, India
Total Contracted Amount (THB):579,058

CSR Essentials

Duration: 23-Aug-10 31-Mar-11
Project Investigator(s): Leena Wokeck
Sponsor: Multi donors
Total Contracted Amount (THB):79,632

Special Program on Public Organization Development 1

Duration: 1-Sep-10 30-Mar-11 Project

Investigator(s): Tidarat Vechvongvan
Sponsor: UNDP,WHO,Ministry of Rural Dev Afghanistan
Total Contracted Amount (THB):868,000

UNDP Leadership Development Program

Duration: 10-Sep-10 15-Mar-11
Project Investigator(s): Worawan Sumroetrum
Sponsor: UNDP Nepal
Total Contracted Amount (THB): 3,045,750

Training for Trainers and Advance Competencies for trainers (Training)

Duration: 27-Sep-10 24-May-11
Project Investigator(s): Kanlaya Muangsan
Sponsor: Government of India
Total Contracted Amount (THB): 1,480,920

Essential Management Skills using IT

Duration: 27-Sep-10 06-Jan-11
Project Investigator(s): Thaniya Jirasathitpornpong
Sponsor: Titas Gas T&D Co Ltd
Total Contracted Amount (THB):1,773,702

Fellowship Program on Education Management and e governance

Duration: 6-Sep-10 03-Feb-11
Project Investigator(s): Augus S Prajogo
Sponsor: UNESCO
Total Contracted Amount (THB): 354,502

Public Private Partnership for elevated Road Project

Duration: 26-Sep-10 06-Jan-11
Project Investigator(s): Worawan Sumroetrum

Sponsor: Department of Road Nepal
Total Contracted Amount (THB):
1,172,964

Corporate Social Responsibility initiative at ONYX Hospitality Group

Duration: 1-Aug-10 30-Sep-11
Project Investigator(s): Leena Wokeck
Sponsor: Onyx Hospitality Group
Total Contracted Amount (THB):984,375

Climate Change adaptation in South and Southeast Asia: Harness the innovative capacity of the Private sector

Duration: 1-Jul-10 15-Jun-11
Project Investigator(s): Leena Wokeck
Sponsor: SIDA
Total Contracted Amount (THB):
2,325,000

Industry Roundtable on accelerating HCFC Phase Out: Technological Options, Climate benefits and business opportunities

Duration: 1-Aug-10 31-Mar-11
Project Investigator(s): Leena Wokeck
Sponsor: AIT UNEP RRC AP
Total Contracted Amount (THB):
299,600

Management and Implementation of Development Projects

Duration: 10-Oct-10 03-Feb-11
Project Investigator(s): Faiz Shah
Sponsor: Multi donors
Total Contracted Amount (THB):534,540

Integrated Solid Waste and Waste Water management

Duration: 11-Oct-10 28-Feb-11
Project Investigator(s): Phyu sin
Sponsor: Canadian red cross
Total Contracted Amount (THB):1,014,977

International Exposure Program on MSME Financing

Duration: 27-Oct-10 01-Feb-11
Project Investigator(s): Faiz Shah
Sponsor: College of Agricultural Banking/RBI
Total Contracted Amount (THB):
965,889

Banking and Finance

Duration: 25-Oct-10 03-Feb-11
Project Investigator(s): Willy Sanjaya
Sponsor: Bangladesh Bank
Total Contracted Amount (THB):
1,576,400

Special Development Management Training Program

Duration: 1-Nov-10 03-Mar-11
Project Investigator(s): Faiz Shah
Sponsor: Government Pakistan, India, Bangladesh
Total Contracted Amount (THB):
1,495,907

Road Safety Management

Duration: 1-Nov-10 30-Jun-11
Project Investigator(s): Willy Sanjaya
Sponsor: Ministry of Transportation, Indonesia
Total Contracted Amount (THB):
531,000

MATT-2: 2nd Regional Exposure Visit Program (Batch 28)

Duration: 14-Nov-10 24-Feb-11
Project Investigator(s): Worawan Sumroetrum
Sponsor: DFID
Total Contracted Amount (THB):4,845,801

Financial Management Accounting Planning and Projection

Duration: 1-Nov-10 14-Feb-11
Project Investigator(s): Faiz Sha

Sponsor: MOE Sri Lanka
Total Contracted Amount (THB):957,000

Agri-Business Management

Duration: 8-Nov-10 17-Feb-11
Project Investigator(s): Sujidtra Pumsombut
Sponsor: Multi donors
Total Contracted Amount (THB):
427,750

Inland Waterways Transportation

Duration: 8-Nov-10 10-Feb-11
Project Investigator(s): Willy Sanjaya
Sponsor: Ministry of Transportation, Indonesia
Total Contracted Amount (THB):531,000

Exposure Visit programme for journalists from Nepal

Duration: 1-Dec-10 30-Mar-11
Project Investigator(s): Kanlaya Muangsan
Sponsor: Nepal Rastra Bank
Total Contracted Amount (THB): 216,600

Climate Change ICTs and innovation

Duration: 29-Jul-10 30-Apr-11
Project Investigator(s): Leena Wokeck
Sponsor: The University of Manchester
Total Contracted Amount (THB): 170,424

Data Organisation and Analysis using Statistical Application

Duration: 22-Nov-10 24-Feb-11
Project Investigator(s): Thaniya Jirasathitpornpong
Sponsor: SIDA SAREC
Total Contracted Amount (THB):
268,800

Ensuring Training Effectiveness

Duration: 6-Dec-10 30-Jun-11
Project Investigator(s): Kanlaya Muangsan
Sponsor: The Higher Education Commission Pakistan
Total Contracted Amount (THB):
2,455,500

Pakistan Canada Debt Swap Project

Duration: 10-Aug-10 29-Mar-11

Project Investigator(s): Warindhorn Srina

Sponsor: Pakistan Canada Debt Swap Project

Total Contracted Amount (THB): 4,799,500

Macro Planning of Water Resources and Monitoring of Water Sector Projects

Duration: 22-Nov-10 03-Mar-11

Project Investigator(s): Zakir Hossain
Sponsor: The Water Resources Planning Organization (WARPO), Bangladesh

Total Contracted Amount (THB): 768,500

ICT for Management Skills Development

Duration: 22-Nov-10 03-Mar-11

Project Investigator(s): August S Prajogo
Sponsor: Petro Bangla Co. Ltd.

Total Contracted Amount (THB):1,020,175

Clinical and Solid Waste Management

Duration: 29-Nov-10 30-Jun-11

Project Investigator(s): August S Prajogo
Sponsor: Ministry of Local Government and Rural development

Total Contracted Amount (THB):484,000

Souvenir design and development

Duration: 25-Nov-10 04-Mar-11

Project Investigator(s): Thaniya Jirasathitpornpong

Sponsor: Katalyst Bangladesh

Total Contracted Amount (THB): 867,073

Professional development program on training of master trainers

Duration: 5-Dec-10 15-Mar-11

Project Investigator(s): Myint Myint Sein
Sponsor:Institute for Microfinance Bangladesh

Total Contracted Amount (THB): 644,663

Management Skills for Central Banks

Duration: 6-Dec-10 10-Mar-11

Project Investigator(s): Upul Kaluhetti Bramahnage

Sponsor: Nepal Rastra Bank

Total Contracted Amount (THB): 714,000

ICT: e Governance in Asia

Duration: 29-Nov-10 03-Mar-11

Project Investigator(s):August S Prajogo
Sponsor: Ecole Polytechnique Federale de Lausanne

Total Contracted Amount (THB): 521,994

Petroleum Exploration Technologies

Duration: 13-Dec-10 22-Mar-11

Project Investigator(s): Willy Sanjaya

Sponsor:Petrobangla, Bangladesh

Total Contracted Amount (THB): 592,000

Clinical and Solid Waste Management

Duration: 29-Nov-1030-Jun-11

Project Investigator(s): Willy Sanjaya
Sponsor: Petrobangla, Bangladesh

Total Contracted Amount (THB): 592,000

Database Development and Administration

Duration: 6-Dec-10 24-Mar-11

Project Investigator(s): August S Prajogo
Sponsor: Balkh University, Afghanistan

Total Contracted Amount (THB): 1,319,200

Project Monitoring and Evaluation focused on Poverty Reduction and MDG's

Duration: 20-Dec-10 25-Mar-11

Project Investigator(s): Worawan Sumroetrum

Sponsor: UNDP Bangladesh

Total Contracted Amount (THB):408,173

Waste Management and renewable Energy technologies with an emphasis on Monitoring and maintenance

Duration: 19-Dec-10 24-Mar-11

Project Investigator(s): Phyu sin
Sponsor:Det Norske Veritas, Norway

Total Contracted Amount (THB):1,296,192

Organizational Strategic Planning and Management

Duration: 21-Dec-10 24-Mar-11

Project Investigator(s): Fazle Karim

Sponsor: for Popular education, Bangladesh

Total Contracted Amount (THB): 377,300

Mainstreaming Gender in to plans, Programs and legislations with a focus on the political and electoral process

Duration: 24-Jan-11 05-May-11

Project Investigator(s): Phyu sin

Sponsor: Liason Office of Denmark

Total Contracted Amount (THB): 828,500

InM Project Coordination

Duration: 15-Jan-11 31-Dec-11

Project Investigator(s): Rowena C Alcoba

Sponsor: INM Bangladesh

Total Contracted Amount (THB): 727,406

AIT INM teaching Case Bank

Duration: 28-Feb-1119-Jun-11 Project
Investigator(s): Rowena C Alcoba
Sponsor: INM Banglades
Total Contracted Amount (THB):
1,853,190

Livestock Production for Sustainable livelihoods

Duration: 17-Jan-11 28-Apr-11
Project Investigator(s): Zakir Hossain
Sponsor: PRMP Pakistan
Total Contracted Amount
(THB):1,060,230

MATT2 2nd regional Exposure visit program Batch 29

Duration: 24-Jan-11 05-May-11
Project Investigator(s): Worawan
Sumroetrum
Sponsor:DFID
Total Contracted Amount
(THB):4,845,801

Project Monitoring and Evaluation focused on Poverty reduction and MDG's

Duration: 16-Mar-1 21-Jun-11
Project Investigator(s): Worawan
Sumroetrum
Sponsor: UNDP BD
Total Contracted Amount (THB):
604,800

Project Management for Wastewater Treatment Facilities

Duration: 7-Mar-11 23-Jun-11
Project Investigator(s): Sufian Etea
Sponsor: Ho Chi Minh City Corporation
Total Contracted Amount (THB):
1,995,136

Design and Construction of Pipeline system for Gas transmission and distribution

Duration: 14-Feb-11 24-May-11

Project Investigator(s): Willy Sanjaya
Sponsor: Titas Gas Co. Ltd Bangladesh
Total Contracted Amount
(THB):1,064,879

Sustaining Competitive Edge at the crossroad of emerging technologies:Management Perspective

Duration: 7-Feb-11 02-Jun-11
Project Investigator(s): Phyu sin
Sponsor:Ministry of Establishment
Bangladesh
Total Contracted Amount
(THB):5,022,064

Professional Development Course on Production of E Learning Materials

Duration: 14-Feb-11 24-May-11
Project Investigator(s): Warindhorn
Srina
Sponsor:Educational Publications
Department Sri Lanka
Total Contracted Amount (THB):
412,470

Leadership Development course for Employee Provident Fund

Duration: 7-Feb-11 19-May-11
Project Investigator(s): Rowena C Alcoba
Sponsor: Employee Provident Fund
Nepal
Total Contracted Amount (THB):
1,323,000

Customer Service Management Course for employee Provident Fund

Duration: 21-Mar-11 23-Jun-11
Project Investigator(s): Faisal Alih
Sponsor: Employee Provident Fund
Nepal
Total Contracted Amount (THB):
758,450

Preparing the Next Generation Leaders for the Challenges of the 21st Century Bangladesh

Duration: 21-Mar-11 15-Sep-11
Project Investigator(s): Albert M
Salamanca
Sponsor: Ministry of Establishment
Bangladesh
Total Contracted Amount (THB):
12,024,250

Seminar and Study Visit on e Governance

Duration: 6-Apr-11 10-Jul-11
Project Investigator(s): Augus S Prajogo
Sponsor: Government of Nagaland,India
Total Contracted Amount (THB):424,800

Banking and Finance

Duration: 9-May-11 18-Aug-11 Project
Investigator(s): Thaniya
Jirasathitpornpong
Sponsor: Bangladesh Bank
Total Contracted Amount
(THB):1,576,400

Education Policy Planning and Implementation (Study Visit Program)

Duration: 23-May-11 30-Sep-11
Project Investigator(s): Kanlaya
Muangsan Sponsor: National Education
Commision (NEC) Sri Lanka
Total Contracted Amount (THB):
195,400

Professional Development Course in HIV/AIDS Education for Ministry & Provincial Officers Trainers

Duration: 30-May-11 07-Sep-11
Project Investigator(s): Warindhorn
Srina
Sponsor: Ministry of Education,Sri Lanka
Total Contracted Amount (THB):
1,484,145

PDP and PMP on Marketing Innovation

Duration: 25-Apr-11 12-Aug-11
Project Investigator(s): Mathew Kuruvilla
Sponsor: Bhutan Telecom
Total Contracted Amount (THB):1,015,272

Project Management Monitoring and Evaluation for Development Initiatives

Duration: 2-May-11 11-Aug-11
Project Investigator(s): Parichard Nuntavong
Sponsor: Multi donors
Total Contracted Amount (THB): 459,200

Rural Road Development and Planning

Duration: 25-Apr-11 02-Aug-11
Project Investigator(s): Willy Sanjaya
Sponsor: LGED Bangladesh
Total Contracted Amount (THB): 682,950

Oracle Database 11g: Administartion and Development

Duration: 6-Jun-11 26-Sep-11
Project Investigator(s): Augus S Prajogo
Sponsor:Titas Gas Bangladesh
Total Contracted Amount (THB): 1,436,400

MATT-2: 2nd Regional Exposure Visit Program (Batch 33)

Duration: 7-Aug-11 17-Nov-11
Project Investigator(s): Worawan Sumroetrum
Sponsor:DFID
Total Contracted Amount (THB): 4,987,485

Capacity Development Program for Maldivians and Indian Governments

Duration: 15-Sep-11 25-Dec-11
Project Investigator(s): Sufian Etea
Sponsor:MOH Maldives & DOPT India
Total Contracted Amount (THB): 1,089,000

Credit control and Due collection for Bhutan Telecom

Duration: 30-May-11 01-Sep-11
Project Investigator(s): Faisal Alih
Sponsor: Bhutan Telecom
Total Contracted Amount (THB): 247,800

International Program on Agri-Business and Agro-processing Financing in Southeast Asia

Duration: 1-Jun-11 06-Sep-11
Project Investigator(s): Rowena C Alcoba
Sponsor: CAB/RBI
Total Contracted Amount (THB): 959,724

Essential Management Skills using IT

Duration: 15-May-11 26-Aug-11
Project Investigator(s): Fazle Karim
Sponsor:Petro Bangla Co. Ltd. Bangladesh
Total Contracted Amount (THB):769,500

Ensuring Training Effectiveness Batch 2

Duration: 13-Jun-11 30-Oct-11
Project Investigator(s): Kanlaya Muangsan
Sponsor: The Higher Education Commision Pakistan
Total Contracted Amount (THB): 2,617,250

Irrigation System Management II

Duration: 15-May-11 26-Aug-11
Project Investigator(s): Worawan Sumroetrum
Sponsor:Department of Irrigation Nepal

Total Contracted Amount (THB):1,566,000

Local Government and Community Participation in Rural Infrastructure Development Projects (Thailand-Vietnam)

Duration: 6-Jun-1115-Sep-11
Project Investigator(s): Thaniya Jirasathitpornpong
Sponsor:Local Government Engineering Department under the Ministry of Local Government, Rural Development and Co-operatives, Bangladesh
Total Contracted Amount (THB): 878,000

Effective Internal Audits

Duration: 6-Jul-11 10-Oct-11
Project Investigator(s): Rowena C Alcoba
Sponsor: Nepal Electricity Authority, Nepal
Total Contracted Amount (THB): 415,560

Essential Management Skills using IT

Duration: 27-Jun-1106-Oct-11
Project Investigator(s): Willy Sanjaya
Sponsor: Bhakrabhad Gas Systems Ltd.
Total Contracted Amount (THB):414,500

Overview of ERP and Accounting Information Systems

Duration: 27-Jun-11 06-Sep-11
Project Investigator(s): Faiz Shah
Sponsor: BT
Total Contracted Amount (THB):236,000

APAARI Information and communication Management for agricultural innovation in South East Asia

Duration: 27-Sep-11 28-Dec-11
Project Investigator(s): Niramol Ponvilai
Sponsor:APAARI
Total Contracted Amount (THB):523,500

**Application of Fluid Machinery
Planning and design of pumping
station and air conditioning**

Duration: 24-Aug-11 28-Nov-11
Project Investigator(s): Worawan
Sumroetrum
Sponsor: EBARA
Total Contracted Amount (THB):
278,400

**Planning and Monitoring of Water
Resource projects**

Duration: 17-Jun-11 24-Sep-11
Project Investigator(s): Willy Sanjaya
Sponsor: Water Resource Planning
Organization
Total Contracted Amount (THB):
896,000

Negotiation for aid management

Duration: 22-Jun-11 24-Jun-11
Project Investigator(s): Faisal Alih
Sponsor: ADB
Total Contracted Amount (THB):
173,400

Training Delivery skills

Duration: 7-Jun-11 07-Sep-11
Project Investigator(s): Thaniya
Jirasathitpornpong
Sponsor: Karnaphuli Fertilizer Company
Limited (KAFCO), Bangladesh.
Total Contracted Amount (THB):202,997

Measuring and Managing ROI

Duration: 4-Jun-11 04-Sep-11
Project Investigator(s): Thaniya
Jirasathitpornpong
Sponsor: Karnaphuli Fertilizer Company
Limited (KAFCO), Bangladesh.
Total Contracted Amount (THB):220,397

**Sustaining Competitive Edge at the
crossroad of emerging
technologies:Management
Perspective Batch II**

Duration: 9-Jul-11 05-Nov-11 Project
Investigator(s): Md Zakir Hossain
Sponsor:Ministry of Public
Administration,Bangladesh
Total Contracted Amount (THB):
4,949,987

**Ensuring Training Effectiveness
Batch 3**

Duration: 5-Sep-11 30-Dec-11
Project Investigator(s): Kanlaya
Muangsan
Sponsor:The Higher Education
Commision Pakistan
Total Contracted Amount (THB):
2,617,250

**Management Finance and Auditing
in Central Bank for NRB**

Duration: 5-Sep-11 08-Dec-11
Project Investigator(s): Upul Kaluhetti
Bramahnage
Sponsor: Government of Nepal
Total Contracted Amount (THB):
592,500

**Management and implementation
of development projects**

Duration: 8-Aug-11 24-Nov-11
Project Investigator(s): Faisal Alih
Sponsor: Multi donors
Total Contracted Amount (THB):
756,000

**GIZ AIT Course development
workshop on sustainable port
management**

Duration: 1-Sep-11 03-Nov-11
Project Investigator(s): Voravate
Chonlasin
Sponsor: GIZ
Total Contracted Amount (THB):256,500

**Advanced Program on in Business
management**

Duration: 1-Aug-11 30-Dec-11

Project Investigator(s): Mathew
Kuruvillea Sponsor: Edu Live
Total Contracted Amount
(THB):4,500,00

Urban Environmental Management

Duration: 1-Aug-11 17-Nov-11
Project Investigator(s): Phyu sin
Sponsor:Multi donors
Total Contracted Amount (THB):
507,500

**Human Resource Management in
the telecommunications sector**

Duration: 5-Sep-11 15-Dec-11
Project Investigator(s): Upul Kaluhetti
Bramahnage
Sponsor: Government of Nepal
Total Contracted Amount (THB):
1,020,000

**Project Planning and Quality
Assurance**

Duration: 17-Aug-11 23-Nov-11
Project Investigator(s): Rowena C Alcoba
Sponsor: Nepal Telecommunications
Company
Total Contracted Amount (THB):
932,200

**Development and production of
Learning Packages & advanced
competencies for trainers**

Duration: 29-Aug-11 30-Dec-11
Project Investigator(s): Kanlaya
Muangsan
Sponsor: Department of census and
statistics,Sri Lanka
Total Contracted Amount
(THB):1,628,800

Civil Engineering Practices

Duration: 6-Sep-11 13-Dec-11
Project Investigator(s): Thaniya
Jirasathitpornpong

Sponsor: Multi donors
Total Contracted Amount (THB):478,500

Multilateral Environmental agreements

Duration: 4-Sep-11 15-Dec-11
Project Investigator(s): Phyu sin
Sponsor: University of Eastern Finland & UNEP Bangkok
Total Contracted Amount (THB):1,505,477

Capacity Enhancement program on civil education

Duration: 10-Oct-11 30-Dec-11
Project Investigator(s): Kanlaya Muangsan
Sponsor:MOE Sri Lank
Total Contracted Amount (THB):487,200

7.7 On-going Grant and Sponsored Trainings

InM Micro credit Software Application

Duration: 1-Jan-11 30-Jun-12
Project Investigator(s): August S Prajogo
Sponsor:INM Bangladesh
Total Contracted Amount (THB):892,388

ICT Training 02/2011 AIT Support NUOL SIDA SAREC

Project Duration: 9-May-11 30-Jun-12
Project Investigator(s): August S Prajogo
Sponsor:SIDA
Total Contracted Amount (THB):387,751

ICT Training 03/2011 AIT Support NUOL SIDA SAREC

Project Duration: 6-Jun-11 30-Jun-12
Project Investigator(s): August S Prajogo
Sponsor:SIDA
Total Contracted Amount (THB): 446,250

ICT Training 01/2011 AIT Support NUOL SIDA SAREC

Project Duration: 28-Feb-11 30-Jun-12
Project Investigator(s): August S Prajogo
Sponsor:SIDA
Total Contracted Amount (THB):387,751

Professional Masters Program in Banking and Finance

Duration: 1-Jan-11 31-Mar-12
Project Investigator(s): Jonathan Shaw
Sponsor: Bangladesh Bank
Total Contracted Amount (THB):10,962,000

Summer Internship program HKU

Duration: 28-May-11 31-Mar-12
Project Investigator(s): Myint Myint Sein
Sponsor:HKU
Total Contracted Amount (THB):1,133,209

Preparing the Next Generation Leaders for the Challenges of the 21st Century Bangladesh Batch II

Duration: 21-Aug-11 16-Feb-12
Project Investigator(s): Md Zakir Hossain
Sponsor:Ministry of Public Administration Bangladesh
Total Contracted Amount (THB): 11,131,260

Effective office management skills for support staff

Duration: 29-Aug-11 31-May-12
Project Investigator(s): Faisal Alih
Sponsor: NCED Nepal
Total Contracted Amount (THB): 590,000

International Management Studies Exposure Program

Duration: 27-Sep-11 15-Mar-12
Project Investigator(s): Rowena C Alcoba
Sponsor: University of Kelaniya,Sri Lanka

Total Contracted Amount (THB): 849,502

19th Fredskorpset Preparatory Courses in Asia

Duration: 29-Sep-11 29-Feb-12
Project Investigator(s): Warindhorn Srina
Sponsor: Fredskorpset Norway
Total Contracted Amount (THB):2,592,410

Project Management Monitoring and Evaluation

Duration: 26-Sep-11 15-Mar-12
Project Investigator(s): Faisal Alih
Sponsor: Multi donors
Total Contracted Amount (THB): 980,875

Data Collection Analysis and Dissemination of Health Information

Duration: 3-Oct-11 31-Jan-12
Project Investigator(s): Agus Prajogo
Sponsor:WHO
Total Contracted Amount (THB):410,001

Nanotechnology for Food and Agriculture

Duration: 26-Sep-11 05-Jan-12
Project Investigator(s): Thaniya Jirasathitpornpong
Sponsor: IAARD/Indoneasia
Total Contracted Amount (THB):980,700

Public Financial Management

Duration: 12-Oct-11 19-Jan-12
Project Investigator(s): Worawan Sumroetrum
Sponsor: Ministry of Local Development Nepal
Total Contracted Amount (THB):702,012

MBA Exposure visit program

Duration: 12-Oct-11 17-Jan-12
Project Investigator(s): Worawan

Sumroetrum

Sponsor: White House GSM Nepal

Total Contracted Amount (THB):521,500

Planning and Monitoring of Water Resource projects II

Duration: 12-Dec-11 21-Mar-12

Project Investigator(s): Phyu sin

Sponsor:Water Resource Planning Organization

Total Contracted Amount (THB): 794,790

Education Management information system in Thailand and Malaysia

Duration: 19-Dec-11 30-Mar-12

Project Investigator(s): Thaniya

Jirasathitpornpong

Sponsor: MOE Sri Lanka

Total Contracted Amount (THB): 1,444,400

Toxic Waste Management

Duration: 16-Jan-12 26-Apr-12

Project Investigator(s): Md Zakir Hossain

Sponsor:NIRAS Denmark

Total Contracted Amount (THB): 450,000

MATT2:2nd Regional Exposure visit Program Batch 36

Duration: 23-Jan-12 04-May-12

Project Investigator(s): Worawan

Sumroetrum

Sponsor:DFID

Total Contracted Amount (THB): 5,167,655

MATT-2: 10th regional Exposure Visit program (Batch 35)

Duration: 27-Nov-11 08-Mar-12

Project Investigator(s): Voravate

Chonlasin

Sponsor: DFID

Total Contracted Amount (THB):5,060,610

White Shrimp Farming and Biofloc system

Duration: 10-Oct-11 19-Jan-12

Project Investigator(s): Phyu sin

Sponsor:Multi donors

Total Contracted Amount (THB):613,200

Strategic IT management

Duration: 12-Dec-11 22-Mar-12

Project Investigator(s): Parichard

Nuntavong

Sponsor: Ministry of education,Sri Lanka

Total Contracted Amount (THB):975,000

International Exposure Program on MSME Financing

Duration: 7-Dec-11 13-Mar-12

Project Investigator(s): Rowena C Alcoba

Sponsor:CAB/RBI

Total Contracted Amount (THB):1,324,491

Dengue epidemic prevention Control and management program

Duration: 14-Nov-11 24-Mar-12

Project Investigator(s): Mathew

Kuruvilla

Sponsor:PRMP

Total Contracted Amount (THB):9,280,000

Agricultural Systems Agro Tourism and Tourist industry in Vietnam

Duration: 12-Dec-11 16-Mar-12

Project Investigator(s): Upul Kaluhetti

Bramahnage

Sponsor: Uva Provinsial Govt of Sri

Lanka

Total Contracted Amount (THB):459,000

Study Tour Program SDM Institute of Management Development India

Duration:29-Nov-11 13-Mar-12

Project Investigator(s): Myint Myint Sein

Sponsor: SDM Institute of Management Development India

Total Contracted Amount (THB):856,800

Management of Flood control and Disaster Management

Duration: 25-Dec-11 06-Apr-12

Project Investigator(s): Augus S Prajogo

Sponsor:Bangladesh Water Development Board

Total Contracted Amount (THB): 1,268,778

Construction and maintence of Rural road

Duration: 8-Jan-12 30-Jun-12

Project Investigator(s): Fazle Karim

Sponsor:LGED Bangladesh

Total Contracted Amount (THB):705,000

White Shrimp Farming

Duration: 20-Feb-12 24-May-12

Project Investigator(s): Phyu sin

Sponsor:Iran Fisheries Organization

Total Contracted Amount (THB):450,000 Project

Financial management

Duration: 12-Oct-11 19- Jan-12

Project Investigator(s): Worawan

Sumroetrum

Sponsor: Ministry of Local Development Nepal

Total Contracted Amount (THB):702,102

Chapter8: INTERNET EDUCATION AND RESEARCH LABORATORY (IntERLab)

8.1 Introduction

Continual expansion of the Internet is creating greater demand for well-trained human resources to support the infrastructures and applications of the Internet. New computer science and engineering solutions are needed to simply handle the exponential growth in the traffic and bandwidth usage which is putting severe strain on the Internet today. There is urgent need for a new breed of engineers and technologists to respond to the growing demand from this rapid expansion with endless range of new applications.

As the Internet continues to penetrate every corner of society and of the economy, there are other non-technical issues to be addressed along with the advancement of technological progress. There is a definite need for better understanding of the Internet's social, business, economic as well as legal implications in order to promote the standards of behaviour and practices for the community that are appropriate to continued growth and beneficial use of the Internet.

The intERLab was established in December 2003 as a fixed regional center for Internet infrastructure capacity building, where AIT based on its human and institutional

networks, could play a very significant role for the region. Many Internet organizations such as Network Startup Resource Center (NSRC) funded by NSF, the Asia-Pacific Network Information Centre (APNIC) and the Asia-Pacific Advanced Network (APAN) as well as many Internet business organizations provided strong support for the intERLab establishment.

The concept of establishing a fixed location for the internet human resources development has been discussed and endorsed by leading Asia-Pacific Internet organizations at their AP* Retreat meeting at AIT in year 2000. Several leading research institutions in Asia-Pacific, Europe and the US have indicated their interests in forming up a network of support for the intERLab research, training and education. The main idea is to work together with partners on training and workshops in order to produce network engineers for the stable deployment of the Internet. It was also encouraged that the intERLab develops its own expertise by doing its own research and eventually become one of the leading Internet research centers in the region.

The core component of the laboratory will be on research

activities. This will be achieved by maintaining excellent research facilities and staff, hosting visiting researchers and taking advantage of linkages with research laboratories worldwide. The lab was built upon pre-existing Internetworking Research Laboratory of the School of Advanced Technologies and the Distributed Education Center.

8.2 Mission

To become one of the leading Internet regional centers of excellence; establishing intERLab/AIT name, as one of the leading Internet infrastructure HRD centers in the Asia-Pacific region; launching our research products at the regional and international level; and developing a regular degree program under SET.

8.3 Unit Governance

Prof. Kanchana Kanchanasut

IntERLab Director

8.4 Resources

Education

Distance Education and E-Education Platform VClass

VClass open source consortium

VClass trainings for AIT faculty and staff

VClass hosting service and technical support

ASEAN Virtual Institute of Science and Technology (AVIST) hosting

Custom courseware development;

E-learning consultancy;

Instructional design consultancy;

Custom course design

CanalAVIST streaming VDO over Trans-Eurasia Information Network (TEIN)

Research

Streaming Technology on the Internet

DVRelay for streaming high quality Video (DV format) over heterogeneous network

Overlay network for streaming content delivery

Computer Network Research

Wireless Internet as information infrastructure for rural Asia

Digital Ubiquitous Mobile Broadband OLSR emergency network project

Multimedia communication over heterogeneous network

Training and Internet Information Center

Trainings for Network Infrastructure Engineers (7~8 courses per year)

Human Resource Development for Trans-Eurasia Information Network

Secretariats for AP* Retreat and Asia Pacific Networking Group (APNG) organizations

8.5 Faculty and Research Staff

Faculty

KANCHANA KANCHANASUT, M.Sc and Ph. D. Computer Science, University of Melbourne, Australia. Graduate Diploma in Computer Science, University of Queensland, Australia. B. Sc. Mathematics, University of Queensland, Australia.

Professor of Computer Science, School of Engineering and Technology and Director of intERLab. [Internet for education; Heterogeneous Networks; Emergency Networks; Mobile Ad Hoc Networks; Streaming Media and Distributed Computing]

Affiliates

POOMPAT SAENGUDOMLERT, Ph.D. in Electrical Engineering and Computer Science, MIT, USA M.S. in Electrical Engineering and Computer Science, MIT, USA B.S.E. in Electrical Engineering, Princeton University, USA

Associate Professor School of Engineering and Technology [Areas of Communication Theory; Optical networks; Resource Allocation Problems and Array Processing]

TEERAPAT SANGUANKOTCHAKORN, D.Eng in Information Processing, Tokyo Institute of Technology, Japan. M.Eng in Information Processing, Tokyo Institute of Technology, Japan. Certificate in Japanese Language, Osaka University of Foreign Study, Japan. B.Eng. in Electrical Engineering, Chulalongkorn University, Thailand.

Associate Professor School of Engineering and Technology [Digital Signal Processing; Routing Algorithm in the network such as IP and MPLS network; High Speed network and IP-based multimedia applications]

MONGKOL EKpanyapong, Ph.D., Georgia Institute of Technology. M.Eng., Asian Institute of Technology, Thailand. B.Eng., Chulalongkorn University, Thailand.

Assistant Professor School of Engineering and Technology [VLSI design, physical design automation, micro architecture, compiler, and Embedded Systems]

Adjunct Researchers

ONNO W. PURBO, Ph.D., University of Waterloo, Canada. M.Eng., McMaster University, Canada.

Retired Lecturer from Institute of Technology Bandung

(ITB) & Retired Indonesian Civil Servant. He is an Eisenhower Fellow & Ashoka Senior Fellow. In the last 20 years, dedicate his time to educate Indonesians on Information technology, open source , Internet Telephony & Low Cost "Wireless" Internet Access. He has published 40+ books & thousands of articles in IT. He is active in 170+ mailing lists and moderate 10+ mailing lists. His vision is "To See Knowledge Based Society in Indonesia"

PANITA PONGPAIBOON, Ph.D. in Electrical and Computer Engineering, Carnegie Mellon University Master of Science in Electrical Engineering, Stanford University Bachelor of Science (with University Distinction) in Electrical Engineering, Stanford University

Researcher National Electronics and Computer Technology Center (NECTEC) [Optical network management; IP-overoptical networking; Survivable and fault-tolerant networks; Network measurement; Traffic classification; IPv6; Mobile IP and Intelligent transport system]

AIMASCHANA NIRUNTASUKRAT, Ph.D. in Electrical Engineering, University of Maryland (College Park), Master of Engineering in Electrical Engineering, Chulalongkorn University, Bachelor of Engineering (with honors) in Electrical Engineering, Chulalongkorn University

Researcher National Electronics and Computer Technology Center (NECTEC) [Network congestion control; Network performance modeling; Application of AI; Biomedical signal processing]

THIRAPON WONGSAARDSAKUL, D.Tech.Sc. in Computer Science, Asian Institute of Technology Master of Science in Telecommunications and Computers, George Washington University Bachelor of Engineering in Computer Engineering, Kasetsart University

Associate Dean, School of Science and Technology, Bangkok University [Voice over IP; Mobile Ad Hoc Network; Peer to Peer; Distributed Hash Table; Intelligent transport system]

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Research Staff

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Research Specialist [Mobile Ad Hoc Network; Vehicular ad hoc networking; Network Coding; Localization and Positioning Systems; Internet Mobility (Mobile IP)]

PREECHAI MEKBUNGWAN, Master of Engineering in Information and Communications Technologies (ICT), Asian Institute of Technology, Thailand. Bachelor of Engineering in Computer Engineering, Kasetsart University, Bangkok, Thailand.

Research Associate [Mobile Ad Hoc Network, Delay Tolerant Networking]

PUJAN SRIVASTAVA, Master of Technology (Information Technology), Indian Institute of

Information Technology, Bachelor of Engineering (Electronics & Communication) Agra University

Research Associate [M-learning, Multimedia Communication]

[M-learning, Multimedia Communication]

8.6 Grants and Sponsored Research Completed in 2011

Development of Emergency Networks Training and Tools Kit

Duration: 1-Feb-09 31-Jan-11

Project Investigator(s): Kanchana Kanchanasut

Sponsor: ISIF Asia

Total Contracted Amount (THB):990,000

Epidemic Protocol for Car Talk

Duration: 1-Aug-09 30-Oct-11

Project Investigator(s): Kanchana Kanchanasut,Teerapat

Sanguankotchakom

Sponsor: National Electronics and

Computer Technology Center, Thailand

Total Contracted Amount (THB):

1,970,000

Asian Internet Engineering Conference 2010

Duration: 15-Dec-09 15-Mar-11

Project Investigator(s): Kanchana

Kanchanasut Sponsor: Multi donors

Total Contracted Amount (THB):900,000

InterLab Trainings 2010

Duration: 1-Apr-10 01-Jan-11

Project Investigator(s): Kanchana Kanchanasut

Sponsor: Multi donors

Total Contracted Amount (THB):

1,500,000

AP Star Retreat Secretariat 2011

Duration: 1-Jan-11 31-Dec-11

Project Investigator(s): Kanchana Kanchanasut

Sponsor: APIA-APRICOT

Total Contracted Amount (THB):200,000

8.7 On-going Grants and Sponsored Research

CanalAVIST (Initial Phase)

Duration: 1-Dec-07 31-Dec-12

Project Investigator(s): Kanchana Kanchanas

Sponsor: DANTE

Total Contracted Amount (THB):729,440

UniChannel: Distance Education Infrastructure on UniNet-Phase II

Duration: 1-Aug-10 31-Dec-12

Project Investigator(s): Kanchana Kanchanasut

Sponsor: UniNet (MOE/RTG)

Total Contracted Amount

(THB):2,000,000

TEIN3 Human Resource program for 2011

Duration: 1-Dec-10 29-Feb-12

Project Investigator(s): Kanchana Kanchanasut

Sponsor: TEIN3/DANTE

Total Contracted Amount (THB):

1,200,000

Asian Internet Engineering Conference 2011

Duration: 1-Jan-11 31-Mar-12

Project Investigator(s): Kanchana Kanchanasut

Sponsor: Multi donors

Total Contracted Amount (THB):800,000

InterLab Training 2011

Duration: 1-Jan-11 29-Feb-12

Project Investigator(s): Kanchana Kanchanasut

Sponsor: Multi donors Total Contracted Amount (THB)1,500,000

AIT support to NUOL 2007 – 2010 Extension: ICT Capacity Building

Duration: 1-Jan-11 30-Jun-12

Project Investigator(s): Kanchana Kanchanasut

Sponsor: SIDA

Total Contracted Amount (THB):

330,000

Chapter 9: AIT-VIETNAM

9.1 Introduction

Asian Institute of Technology-Vietnam (AIT-VN) was established in 1993 under the agreement between the Government of Vietnam and AIT. Asian Institute of Technology-Vietnam takes pride in being the first international institution in Vietnam and the first Center of AIT out of its headquarters in Thailand.

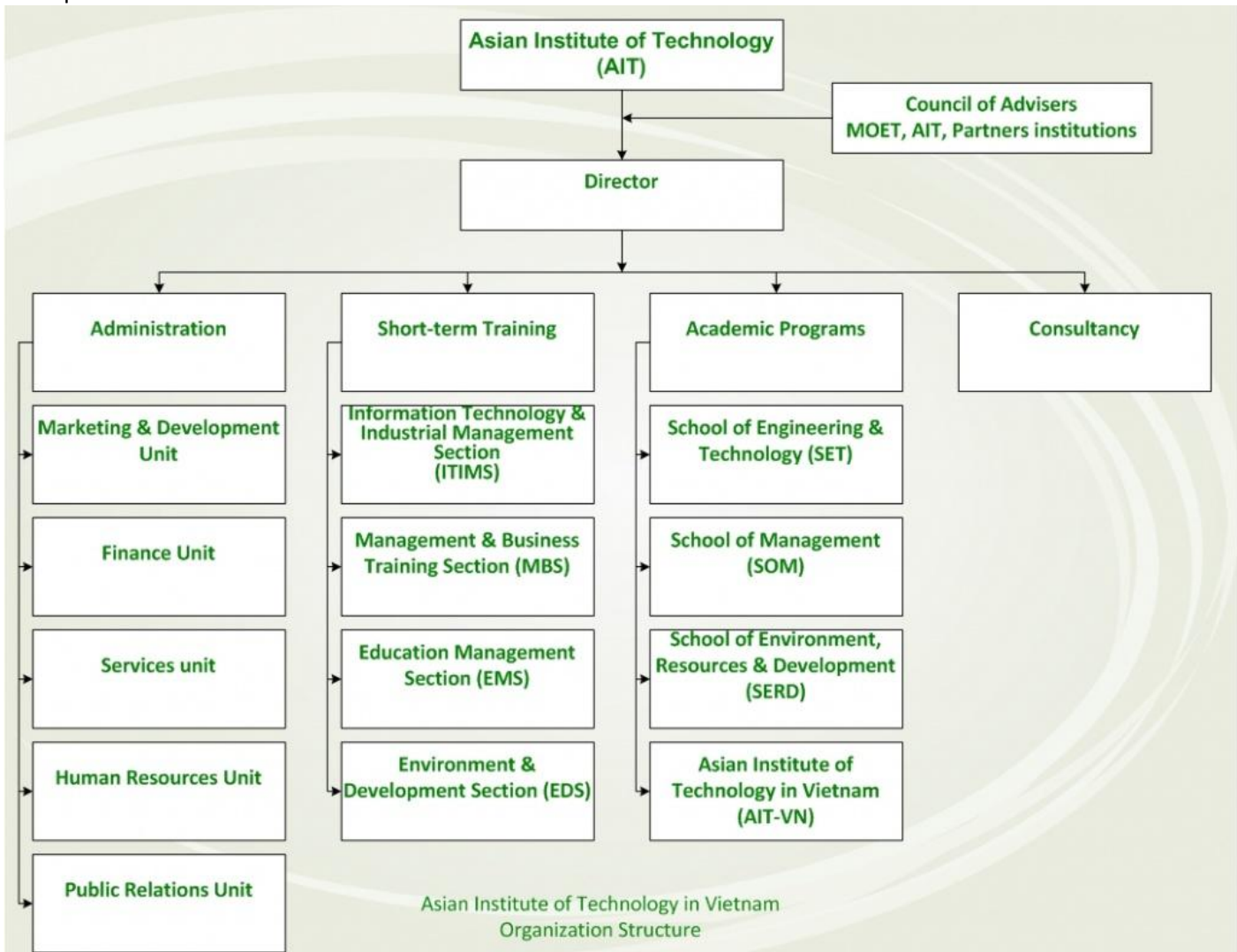
Vision

Our vision is to become a unique and prestigious regional institution that offers responsive, work-relevant higher educational programs and outreach services for sustainable growth of Vietnam and the region as it integrates into global economy.

Mission

The mission of AITVN is to become a leading international educational institution of higher learning in Vietnam and the region.

9.2 Governance



9.3 Services

AITVN offers academic services (in collaboration with Schools):

- Two-stage Masters, Doctors Programs
- Master Programs in Vietnam: Master of Business Administration Program for Executives; Doctor of Business Administration
- Professional Masters Programs
- International Masters of Advanced Studies

AITVN offers professional training programs:

- Short-term training courses specialized in Management and Business, Environment and Development, Language and Training, Advanced Technologies, etc.
- Customized training courses
- Seminars
- Outreach (consultancy) services

9.4 Fields of Postgraduate Education (On-Going)

Information Technology (IT)

- Environment Technology Management (ETM)

- International Executive Master/Doctor of Business Administration (iEMBA/DBA)
- Industrial System Engineering Management (ISE)
- Telecommunications and ICT (TC and ICT)
- Construction, Engineering and Infrastructure Management (CEIM)
- Geo-Engineering and Management
- Geo-exploration and Petroleum Engineering
- Environmental Engineering & Management

9.5 AIT-VN's Training Programs

Training for Professional Development

AITCV offers short training courses in 16 fields of professional skills nationwide. The programs are designed and conducted by AIT trainers, international experts and alumni. Newly acquired skills from those short courses are immediately applicable in improving performance at work.

Short-Term Training Courses

- Training Skills

- Interpersonal Communication Skills
- Language skills
- Administration and Secretarial
- Human Resource Development
- Management Development
- Marketing, Sales and Customer Services
- Supply Chain Management
- Industrial Engineering and Management
- Basic Management of Development Project
- Knowledge of Development Project Management
- Environmental and Natural Resources Management
- Urban Environmental Management
- Agribusiness Management
- Interpersonal Skills for Development Project Officers
- Finance Management

Tailor-made Courses

Upon request, AITVN organizes 'tailor-made' training courses and training combined with study tours for organizations in Vietnam and

overseas. Training contents, venues and time are made to match the requirements of the recipient.

Training and study tour program has recently been one of AITVN's trademark. We closely cooperate with universities and other institutions in Australia, Belgium, Bangladesh, China, Malaysia, Indonesia, Norway, Singapore, Taiwan and Switzerland. These

training programs have been widely appreciated by the participants indicated by increasing repeat requests.

9.6 Academic Programs in cooperation with AIT Schools in 2011

In cooperation with:

SOM

12 th Entry of iEMBA program, Double specialization International Business and Management of Technology	Hanoi
12 th Entry of iEBMA program, Specialized in Energy Management	Hanoi
12 th Entry of iEMBA program customized for Vietnam Industrial Cement Corporation	Hanoi
8 th Entry of iEMBA program	HCMC
4 TH Entry of iEMBA	Vung Tau & Dong

SET

Program	Location
Professional Master of Engineering in Geo- Engineering and Management (PME-GEM)	HCMC
Professional Master of Engineering in Geo-Exploration and Petroleum Geo-engineering (PME-GEPG)	HCMC
2 Stage Master/PhD Program in GET and GEPG	

SERD

Program	Location
Professional Master in Environmental Engineering	Hanoi & HCMC

IHEID

Program	Location
Executive Master in Development Policies & Practices	Hanoi

AIT VIETNAM

Program	Location	Partner University
Professional Master in Hospitality Management	HCMC	Salzburg University of Applied Sciences (Austria)
Professional Master in Finance and Banking	HCMC	Yuntech University (Taiwan)

9.7 On-going Grants and Sponsored Projects

In cooperation with:

SOM

SET

IHEID

9.8 AITVN Short term Courses Completed in 2011

By Education Management Section

1	Effective Presentation Skills	8-10/6/2011
2	English Skills for Interpreters	25-30/7/2011
3	Effective Communication Skills for Multi-cultural Working Environment	26-28/10/2011
4	Effective Communication Skills for Multi-cultural Working Environment	19-20/12/2011

By Management Business Section

No	Name of course	Time	No of days	Venue	Customer
1	Contract Drafting and Negotiation Skills	29 - 1 Jan	3	Diamond Plaza, HCM	Cuu Long JOC
2	Budgeting	5-6 Jan	2	Eurowindow	Eurowindow
3	Risk Management for BIDV	13-14 Jan	2	773 Hong Ha, Hoan Kiem, HN	BIDV
4	Money laundering	15-17 Jan	3	774 Hong Ha, Hoan Kiem, HN	BIDV
5	Leadership skills 1	18-Mar	1	AITVN	PVPower
6	Problem solving 1	19-Mar	1	AITVN	PVPower
7	Leadership skills 2	25-Mar	1	AITVN	PVPower
8	Problem solving 2	26-Mar	1	AITVN	PVPower
9	Management for Middle Management 2	25-26 Mar	2	AITVN	PVPower
10	Training program on Soft Skills for Middle Management	26-27 Mar	2	No 1 Dao Duy Anh, Ha Noi	VNStockmart
11	Training program for BIDV	~2 months		773 Hong Ha, Hoan	BIDV

				Kiem, HN	
12	Leadership skills	14-16 Mar	3	Nha trang	LMPA
13	Training program on Soft Skills for Middle Management 1	15-18 Mar	4	AITVN-HN	Eurowindow
14	Training program on Soft Skills for Middle Management 2	16-19 Mar	4	AITVN-HCM	Eurowindow
15	Training program on Soft Skills for Middle Management 3	25-28 Mar	4	AITVN-Da nang	Eurowindow
16	Negotiation skills	17-18 Mar	2	Flower Garden Hotel	Capitaland
17	HRM	16-20 Mar	5	773 Hong Ha, Hoan Kiem, HN	BIDV
18	R&D	21-25 Mar	5	773 Hong Ha, Hoan Kiem, HN	BIDV
19	Investment banking	26-30 Mar	5	773 Hong Ha, Hoan Kiem, HN	BIDV
20	Marketing	4-8 Apr	5	773 Hong Ha, Hoan Kiem, HN	BIDV
21	Derivative Products	15-19 Apr	5	773 Hong Ha, Hoan Kiem, HN	BIDV
22	Commercial Sponsoring	27-29 Apr	3	773 Hong Ha, Hoan Kiem, HN	BIDV
23	Advocacy	13-15 May	3	Da Nang	LMPA
24	Leadership skills	13-May	1	AITVN-HN	CNC-VINA
25	Middle Management skills	13-14 Jun	2	773 Hong Ha, Hoan Kiem, HN	BIDV
26	Change Management	15-Jun	1	773 Hong Ha, Hoan	BIDV

				Kiem, HN	
27	Negotiation skills	16-Jun	1	773 Hong Ha, Hoan Kiem, HN	BIDV
28	Problem Solving	17-Jun	1	773 Hong Ha, Hoan Kiem, HN	BIDV
29	Presentation skills	18-Jun	1	773 Hong Ha, Hoan Kiem, HN	BIDV
30	Human resource Management	6-7 Jun	2	773 Hong Ha, Hoan Kiem, HN	BIDV
31	Accessment skills	8-Jun	1	773 Hong Ha, Hoan Kiem, HN	BIDV
32	ODA Project and Program Evaluation	11-14 Jul	4	Da Nang	DCE
33	Training Program for Middle Management 1	13-16 Jul	5	AITVN- Ha Noi	Eurowindow
34	Training Program for Middle Management 2	20-23 Jul	5	AITVN- HCM	Eurowindow
35	Investor relations	02-06 Aug	5	773 Hong Ha, Hoan Kiem, HN	BIDV
36	Project Operation and Sustainability	15-18 Aug	4	Nha Trang	DCE
37	Budgeting	24-26 Aug	3	AITVN- HCM	Eurowindow
38	Project management	20-22 Sep	3	Diamond Plaza, HCM	CLJOC
39	HR for Non HR	27-28 Sep	2	Diamond Plaza, HCM	CLJOC
40	Supervisor skills	24-25 Oct	2	Diamond Plaza, HCM	CLJOC
41	Management of Business Bank and Investment Bank 1	17-19 Oct	2.5	773 Hong Ha, Hoan Kiem, HN	BIDV
42	Writing report 1	19-20 Oct	1.5	773 Hong Ha, Hoan	BIDV

				Kiem, HN	
43	Strategy Management 1	21-Oct	1	773 Hong Ha, Hoan Kiem, HN	BIDV
44	Change Management 1	22-Oct	1	773 Hong Ha, Hoan Kiem, HN	BIDV
45	Management of Business Bank and Investment Bank 2	19-21 Oct	2.5	773 Hong Ha, Hoan Kiem, HN	BIDV
46	Writing report 2	18-19 Oct	1.5	773 Hong Ha, Hoan Kiem, HN	BIDV
47	Strategy Management 2	22-Oct	1	773 Hong Ha, Hoan Kiem, HN	BIDV
48	Change Management 2	17-Oct	1	773 Hong Ha, Hoan Kiem, HN	BIDV
49	Management of Business Bank and Investment Bank 3	17-19 Oct	2.5	AITVN- HCM	BIDV
50	Writing report 3	19-20 Oct	1.5	AITVN- HCM	BIDV
51	Strategy Management 3	16-Oct	1	AITVN- HCM	BIDV
52	Change Management 3	21-Oct	1	AITVN- HCM	BIDV
53	Finance Management	1-2 Nov	2	Royal Hotel - 20 Hang Tre, HN	BIDV
54	Management of Business Bank and Investment Bank 4	7-9 Nov	2.5	773 Hong Ha, Hoan Kiem, HN	BIDV
55	Writing report 4	2-3 Nov	1.5	773 Hong Ha, Hoan Kiem, HN	BIDV
56	Strategy Management 4	5-Nov	1	773 Hong Ha, Hoan Kiem, HN	BIDV

57	Change Management 4	4-Nov	1	773 Hong Ha, Hoan Kiem, HN	BIDV
58	Advanced Project management	25/28/29 Nov	3	Diamond Plaza, HCM	CLJOC
59	Professional selling skills 1	16-17 Nov	2	AITVN-HN	Eurowindow
60	Professional selling skills 2	21-22 Nov	2	AITVN-HN	Eurowindow

By Environment & Development Section

	Name of course	Time	No of days	Venue	Customer
1	Agri-business and Agro processing Financing in Southeast Asia	5-8 June	3	Ho Chi Minh City	AIT Extension
2	International Trade Environment of Rice Sector	3-5 November	3	Ho Chi Minh City	CMARD2
3	International Trade Environment of Rubber Sector	3-5 October	3	Ho Chi Minh City	CMARD2
4	International Trade Environment of Coffee Sector	19-21 October	3	Ho Chi Minh City	CMARD2
5	International Trade Environment of Tea Sector	16-18 November	3	Ho Chi Minh City	CMARD2
6	Module III: Hands on Training on Integrating of EM&CP Aspects in Environmental Inspections of Industrial Enterprises	14 March - 02 April	10	Thai Nguyen, Phu Tho, Nghe An, Quang Nam and Ben Tre	CPI/MOIT
7	Module IV: Seminar on Experience Sharing and Development of Individual Action Plan for Integration of EM&CP Aspects in Environmental Inspections of Industrial	22-Apr	1	Ha Noi	CPI/MOIT

	Enterprises				
8	Module V: Follow up Activities during April to August 2011	July and August	2 months on-job	Thai Nguyen, Phu Tho, Nghe An, Quang Nam and Ben Tre	CPI/MOIT
9	Module VI: Final Workshop on Experience Sharing and Closing of the Training Program on Integration of EM&CP Aspects in Environmental Inspections of Industrial Enterprises	18-Aug	1	Ha Noi	CPI/MOIT
10	Overview of the Automatic Control System in the Breweries	4-6 July	3	AITVN/Ho Chi Minh City	VBL Co.
11	Project Monitoring and Evaluation course	25-29 May	5	AITVN/HCM Office	Chia Se Project
12	Advanced Project Monitoring and Evaluation course	5-8 August	4	V-Resort, Hoa Binh	Chia Se Project
13	Work Planning and Time Management for Project Officers	29-31 August	3	Do Son, Hai Phong	Chia Se Project
14	Project Design and Proposal Writing	9-13 January	11	AITVN/Hanoi Office	VEPF
15	Result-based Project Management	15-17 December	3	8 Chu Van An, Hanoi	TFF
16	Team Building Retreat	23-Dec	1	Pham Dinh Ho Str., Hanoi	VIE/029 Project
17	Climate Change: Basic Understandings and Current Practices	29-31 August	3	AITVN/Hanoi Office	Open
18	Formulating and Writing a Climate Change Adaptation Action Plan	7-9 November	3	AITVN/Hanoi Office	Open

19	Implementation and Management of Development Projects	9-13 December	5	AITVN/Hanoi Office	Open
20	DP05 - Participatory Monitoring & Evaluation of Development Projects	22-26 August 2011	5	AITVN/HCM Office	Open
21	DP03 - Budgeting and Financial Management in Development Projects	28.11-01.12.2011	4	AITVN/HCM Office	Open
22	DP03 - Budgeting and Financial Management in Development Projects	10-13.01.2012	4	AITVN/HCM Office	Open

By Information and Technology and Industrial Management Section

No	Code	Name of course	Time	No of days	Venue	Customer
1	64523	Lean Management	15 - 17 March 2011	3	AITVN - HCMC	Open course
2	64524	Training cum study visit program: Environmental Management	27 Mar - 7 Apr 2011	12	Vietnam - China	Local Government Engineering Department LGED Bangladesh
3	64525	Training cum study visit program: Urban Development Planning and Management	16 Apr - 1 May 2011	16	Australia - New Zealand	Local Government Division Ministry of LGRD & Co. Government of Bangladesh
4	64526	Training cum study visit program: Urban	30 Apr - 15 May	16	Australia - New Zealand	Local Government

		Development Planning and Management	2011			Division Ministry of LGRD & Co. Government of Bangladesh
5	64527	Contract Negotiation Skills	23 - 24 April, 2011	2	AITVN - HCMC	Open course
6	64528	Warehouse Management and Control	22 - 24 April, 2011	3	AITVN - HCMC	Open course
7	64529	Project Management Cycle	21 - 24 Apr 2011	4	The Hanoi Club Hotel, Lake Palais Residences 76 Yen Phu, Tay Ho, Hanoi	The Beyond WTO Program Office Of Steering Committee
8	64530	Training cum study visit program: Urban Development Planning and Management	21 May - 6 June 2011	16	Australia - New Zealand	Local Government Division Ministry of LGRD & Co. Government of Bangladesh
9	64531	Data Analysis and Presentation Using MS. Excel	May-June, 2011	2	PVD - HCMC	PVD
10	64532	Data Analysis and Presentation Using MS. Excel	May-June, 2011	2	PVD - HCMC	PVD
11	64533	Data Analysis and Presentation Using MS. Excel	May-June, 2011	2	PVD - HCMC	PVD
12	64534	Data Analysis and Presentation Using MS. Excel	May-June, 2011	3	PVD - HCMC	PVD

		Excel				
13	64535	Production and Operations Management	24 - 26 May, 2011	3	VBL_Tien Giang	VBL Tien Giang
14	64540	Training cum study visit program on Local Government and Community Participation in Rural Infrastructure Development Projects	12 - 16 June 2011	5	Vietnam	AIT Thailand
15	64541	Contract Negotiation and Management	23 - 23 June, 2011	2	Capitaland - HCMC	Capitaland
16	64542	Construction Project Management	14 - 16 June, 2011	3	Vung Tau	NCSP
17	64543	Data analysis and Presentation using Excel	22 - 24 June, 2011	3	AITVN - HCMC	Open course
18	64545	Industrial Maintenance Management	19 - 21 Jul 2011	3	VSIP Bac Ninh Co., Ltd. Phu Chan Commune, Tu Son District, Bac Ninh	VSIP Bac Ninh Co. Ltd.
19	64547	Project Management	18 - 19 August, 2011	2	Duxton Hotel - HCMC	BTA
20	64548	Production and Operations Management	08 - 10 August, 2011	3	Da Nang	VBL Da Nang
21	64549	Data analysis and Presentation using Excel	24 - 26 August, 2011	3	AITVN - HCMC	Open course
22	64550	Material inventory management	09 - 11 Sep, 2011	3	AITVN - HCMC	Open course

23	64551	Management skills for leaders	Sept - Oct 2011	16	AITVN - HCMC	Ha Tien Vicem
24	64552	Training cum study visit program: Urban Development Planning and Management	8 - 21 Oct 011	14	Germany - Austria - Italy	Local Government Division Ministry of LGRD & Co. Government of Bangladesh
25	64553	Overview of Oil and Gas Industry	17 - 18 Sep, 2011	2	Bien Dong POC - HCMC	Bien Dong POC
26	64554	Business Management and Operation for Manager	Sep - Nov 2011	5	Ca Mau	PV Ca Mau Fertilizer
27	64555	Training cum study visit program: Urban Development Planning and Management	22 Oct - 4 Nov 2011	14	Germany - Austria - Italy	Local Government Division Ministry of LGRD & Co. Government of Bangladesh
28	64556	Training cum study visit program: Urban Development Planning and Management	19 Nov - 2 Dec 2011	14	Germany - Austria - Italy	Local Government Division Ministry of LGRD & Co. Government of Bangladesh

Chapter 10: CENTER OF EXCELLENCE AND OUTREACH

10.1 CENTER OF EXCELLENCE ON SUSTAINABLE DEVELOPMENT IN THE CONTEXT OF CLIMATE CHANGE (Coe SDCC)

10.1.1 Profile

AIT Research Strategy 2012-2016 emphasizes the consolidation of research efforts and creation of a niche that will harness the institute's range of network, experience and expertise. Sustainable development has been central to AIT's research and development efforts since its inception. The Institute has responded rapidly to the new challenges the region faces. Climate change is a global challenge and concerted trans-disciplinary efforts are required to develop new adaptation and mitigation strategies which will provide local communities more resilience while leading towards a more sustainable society. The Asian Institute of Technology is committed to work towards this by forming strong team and networks and further, working in a collaborative manner with all stakeholders. The Institute continues to pursue its role as a leading center of knowledge production in the region.

Since its inception in September 2009, the Center of Excellence on Sustainable Development in the context of Climate Change (CoE SDCC) has been playing its role in supporting AIT's role as an institute

working in climate change platform in the region through maximizing the institute's research resources as well as its broad network.

10.1.2 Mission

The mission of the CoE SDCC is to consolidate the Institute's research efforts and broaden the networks and partnerships by providing a platform to discuss and launch shared initiatives and pool resources to effectively address issues and challenges in sustainable development and climate change.

In February 2012, after a long process of accommodating and gathering aspirations and opinions from all AIT stakeholders, AIT research strategy 2012-2016 is finally concluded. Based on various consideration of the needs of the region where AIT is working as well as the available resources within the institute, the research activities within AIT in the next five years will be focusing on five thematic areas:

1. Disaster Risk Management
2. Sustainable Land and Water Resources Management
3. Business and Innovation Models for a Green Economy

4. Urban and Rural Quality of Life and Sustainability
5. Lower Carbon, and Sustainable Production & Consumption Technologies & Management

The thematic research area aims to stimulate the formation of teams that merge knowledge, experience and networks. This approach will allow centralizing some support functions to research activities, but also aims at diversifying research teams to make better use of the width of experience at AIT.

10.1.3 Objectives

- Bring together thought-leaders, research groups and SDCC experts to reflect on future research, design action plans and agenda, and pool resources to face emerging issues and urgent themes in climate change adaptation and mitigation
- Consolidate the Institute's research efforts and partnerships by providing a platform to discuss and to share initiatives with like-minded stakeholders and partners

- Strengthen AIT's role as regional hub of knowledge and experience in research and development in sustainable development and climate change adaptation and mitigation

10.1.4 Facilities

CoE SDCC is regulated by the AIT human resources rules and by AIT contracts. In its daily activities, CoE SDCC is working closely with AIT faculty, researchers, students and external partners according to the needs and requirements of the type of work / projects. The center also provides student assistantships based on the work needs and issues contracts to its short term consultants according to AIT standards and work requirements..

10.1.5 Activities Carried out in 2011

AUA Outreach Benchmarking Project

CoE SDCC is currently working on Alternative University Appraisal (AUA) Project, a project aiming at creating an instrument that recognizes universities good practices in promoting and adopting Education for Sustainable Development and refining the AUA Peer-Consultation System.

Current status of the project: ongoing

SYKE-funded project on "Policy Learning in Mekong countries and Nepal"

CoE SDCC is now finalizing the SYKE-funded project on "Policy Learning in Mekong countries and Nepal", resulting some suggestions to Finland government on better use the climate change funds to targeted countries.

Current status of the project: ongoing

Asia Technology Needs Assessment (TNA) Implementation Project

The UNEP Risoe Centre (URC), Denmark has engaged CoE SDCC in working as Regional Center of its Technology Needs Assessment (TNA) project in developing Asian countries. As regional centre, CoE SDCC serves as the focal point in giving any technical support and capacity building for the participant countries respectively. This is part of a worldwide effort by the Global Environment Facility (GEF) to implement the TNA project, which is designed to support 35 to 45 countries within the framework of the UNFCCC. The project is being implemented in two rounds, with 5 to 6 countries in Asia (Thailand, Indonesia, Vietnam, Cambodia, Bangladesh, and Georgia) in the first round and another 5 to 6 countries in Asia to be included in the second round. The objective of the TNA project is to assist participant developing country identify and

analyze priority technology needs, which can form the basis for a portfolio of environmentally sound technology (EST) projects and programs to facilitate the transfer of, and access to, the ESTs and know-how in the implementation of Article 4.5 of the UNFCCC Convention.

The project is also aimed at strengthening the networking of the regional centers in different parts of the world and enhances their cooperation with countries through their role as regional knowledge hub for supporting relevant activities in the region. The capacity built through the project can be useful far beyond the duration of this project in this important area of technology transfer. This is because many more activities can be expected to be initiated by various donors, governments, and other agencies in all the regions. Prof. S.K. Rakshit and Prof. S. Kumar will serve as the focal point for the Regional Centre in SDCC, AIT in adaptation and mitigation respectively.

Current status of the project

A first Regional Capacity Building Workshop for round one countries in Asia has been conducted in Bangkok from 15-17 September 2010. The aim was to familiarize the country TNA coordinators, national consultant, and experts in selecting technologies/strategies for Mitigation & Adaptation, conducting the stakeholder engagement and

other technical support knowledge they might need for TNA implementation. Participants included country participants from the five first round countries, UNEP, GEF, UNDP and AIT.

Second regional capacity building Workshop in Asia For Technology Needs Assessment Project has been conducted in Bangkok from 18-21 January 2011. The workshop aimed to provide inputs / training to the National Consultants /Experts working on the project in the countries in:

1. Identifying barriers and inefficiencies by using market mapping and other tools;
2. Identifying activities aimed to overcome the identified barriers and inefficiencies;
3. Identifying activities to accelerate technology deployment; and
4. Developing TAPs describing activities and enabling frameworks to overcome the barriers and facilitate the transfer, adoption, and diffusion of selected technologies in the participant countries.

SDCC / AIT – France Network Program

In order to strengthen AIT and France common research strategy toward SDCC – Sustainable

Development in the context of Climate Change, a regional program targeting young researchers interested in new collaborative projects was initiated which is based on the general theme of “*sustainable development and climate change*”, with a focus on *the development of the ASEAN region using multidisciplinary approaches*.

Objective:

To identify high-quality proposals for leading-edge research projects between research teams from AIT, France and ASEAN based institutions, particularly in the six thematic research areas identified by AIT for its new Center of Excellence on Sustainable Development in the context of Climate Change.

In order to provide additional support to the selected projects and to use the necessary ties between Asian and French teams, the French Ministry of Foreign and European Affairs (MAEE), through the Regional Office for Cooperation, Embassy of France in Thailand, and its financial agreement for the year 2009 with the Asian Institute of Technology (AIT), decide to allocate partial scholarships for doctoral studies under a joint supervision scheme between AIT and a French institution. Joint supervision under French model enables a doctoral student to pursue his/her research

work under the supervision of two institutions.

Current Status of the Program:

After a thorough evaluation from the Scientific Committee and the final decision from the Steering Committee of the regional program "SDCC / AIT - France Network" co-funded and implemented in partnership by AIT and the French regional cooperation at AIT (French Ministry of Foreign and European Affairs), we are very pleased to announce the selected proposals:

Assessment of Co-Benefits on Air Quality and Climate Resulted from Various Control Strategies in Southeast Asia

PI: Prof. N.T. Kim Oanh

Partners: Royal University of Phnom Penh, Cambodia Laboratoire des Sciences du Climat et de l'Environnement, Gif/Yvette, France Institut de Combustion, Aérothermique, Réactivité et Environnement (ICARE), France

LICORICE (Life Cycle Assessment of Cotton and Rice)

PI: Dr. Sylvain Perret

Partners: Kasetsart University, Thailand, King Mongkut's University of Technology, Thonburi, Thailand, Vietnam National University of Sciences, Hanoi, Vietnam, CIRAD - UMR Qualisud & ELSA, Montpellier, France, CIRAD - UMR G-Eau- IIRI

Vietnam, Vietnam National University, Hanoi, Vietnam, Hanoi University of Agriculture, Vietnam, CIRAD - UMR Hortsys - ELSA, Montpellier, France.

Production of Bio-ethanol and Biomaterials from Oil Palm Biomass: A study of Feedstock Sustainability, Technological Efficiency and Social Applicability.

PI: Prof. Sudip K. Rakshit. Partners: University of Sains Malaysia, Penang, Malaysia, Nancy University, France, INRA-Plate-forme de Pré développement en Biotechnologie, France, ENSTIB, Epinal, France.

Sustainability Issues Due to Coal Ash From Coal Fired Power Plants. PI: Prof. Ajit Annachatre Partners: Chiang Mai University, Thailand, De La Salle University, Manila, the Philippines, Université Paris-Est Marne-la-Vallée, France.

Special Cases:

Low Carbon Cities: Learning from the Experiences in France. PI: Prof. Sivanappan Kumar Partner: ADEME

Thailand's Institutional and Policy Landscape on Climate Change Mitigation

Aiming to provide an assessment of gaps between needs for effective implementation of National Strategy on Climate Change prepared by Royal Thai Government and existing supports from all UN agencies, government's own plans, and

support from other international non-governmental agencies is considered as first step to identify possible areas to develop joint programme and activities to support government, UNEP as the Secretariat for the Joint Team on Climate Change has engaged AIT in conducting a thorough research on Thailand's institutional and policy landscape on climate change mitigation.

The study is designed to map the role of stakeholders: who (UN agencies, Government and non-government) is doing what in the context of climate change mitigation including technology transfer, what is the policy and legislative environment, what are the mitigation strategies and action plans of the government and what gaps exist and how can the UN agencies help to fill in the gaps.

Current Status: Finalized

10.1.6 Plans for 2012

1. Continuing the current research project.
2. Safeguarding the AIT Research Strategy 2012-2016
3. Approaching new research projects to expand SDCC network and capacity.

10.2: ASEAN REGIONAL CENTER OF EXCELLENCE ON MILLENNIUM DEVELOPMENT GOALS (ARCMDG)

10.2.1 Introduction

Following the ASEAN Regional Roundtable on MDGs “ECOSOC’s Promotion and Achievement of Millennium Development Goals through Education and Outreach” on 24-25 March 2008 held at Asian Institute of Technology (AIT), Bangkok, and through declaration made by the *participants*, the ASEAN Regional Center of Excellence on MDGs was created to promote, educate and train on MDGs throughout the region in close collaboration with actors in the field.

ARCMDG has been welcomed by the UN Secretary-General as the world’s first Regional Center of Excellence on MDGs following its establishment and functioning at AIT. The center was established and made functional since 1 May 2008 with the appointment of Dr. Jayant Kumar Routray, Professor of Regional and Rural Development Planning as Director to formalize the initial process and follow the activities as mandated through the mentioned declaration. Mission.

10.2.2 Mission

The mission of the ARCMDG is to contribute, catalyze and deliver knowledge management services, in order to supports the implementation and timely

attainment of the MDGs in the ASEAN region and beyond. The aim is pursued through its capacity building, education and research programs, coupled with consulting and advisory services, networking and partnership building activities in close collaboration with national, regional and international organizations inclusive of civil societies and non-governmental organizations.

Moreover, together with AIT outstanding academic and professional training programmes, ARCMDG facilitates strengthening of capacity buildings of officials of governments and organizations. The courses offered are designed for skilled professionals in development field and are presented by knowledgeable and experienced trainers.

10.2.3 Goals

ARCMDG goals are:

To optimize the knowledge management on all aspects of MDGs in ASEAN and elsewhere.

To facilitate the identification, development, sharing, implementations of good practices in MDGs governance and in MDGs programme execution.

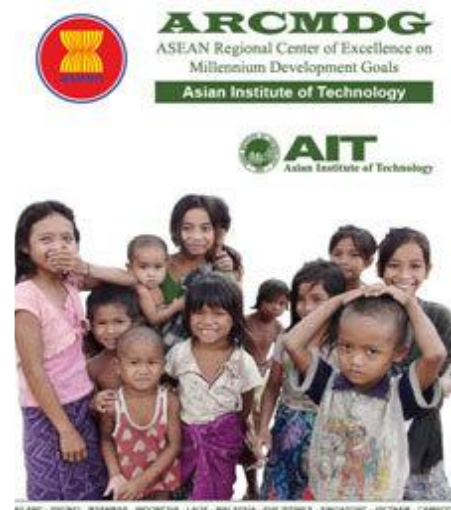
To facilitate and institutionalize trend analysis and transparent monitoring of MDG achievements and failures.

10.2.4 Objectives

In response to the declaration of the ASEAN

Regional Roundtable and following the TOR of the center, the objectives are as follows:

1. To **popularize** the MDGs, by spreading, disseminating, and



propagating information on MDGs, starting with 4 Goals: Goal 1, Eradication of Extreme Poverty and Hunger; Goal 3, Promotion of Gender Equality and Empowerment of Women; Goal 7, Ensuring Environmental Sustainability;

and Goal 8, Global Partnership for Development, throughout the ASEAN Region.

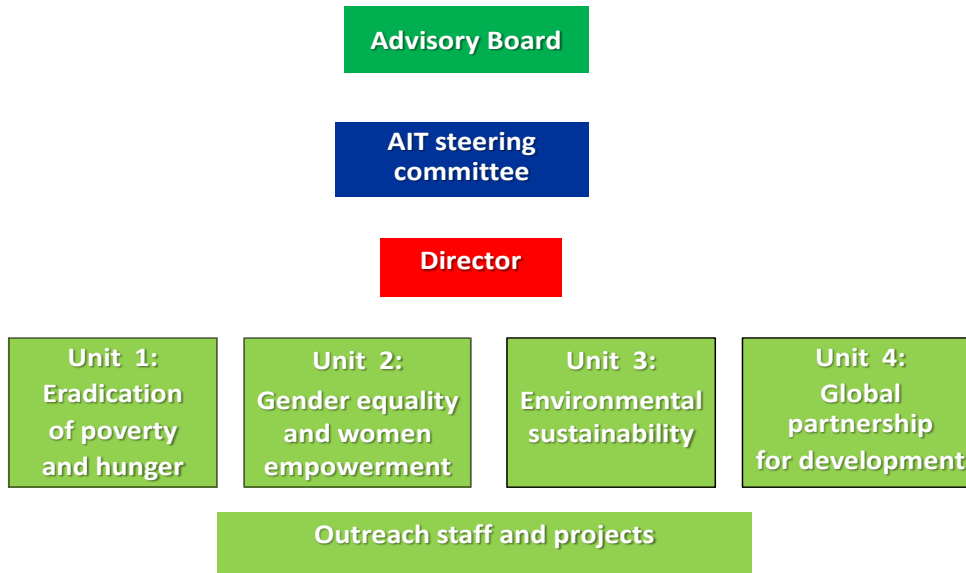
2. To **mobilize** educational spreading, teaching and learning about MDGs.
3. To **develop** and offer pedagogical modules, educational materials and tools for MDGs training in government and academic institutions, civil society, NGOs and private sector, complementing similar initiatives by other Centers of Excellence on MDGs operating elsewhere in the world.
4. To **help** establish National Centers of Excellence, starting with the ASEAN Region and to exchange information and competencies on MDGs between the Centers of Excellence.
5. To **stress** the promotion of gender equality and empowerment of women as a cross-cutting issue of all MDGs, viewed within the human rights perspective and linked to the MDGs.
6. To **establish** a bank of trainers and of networks of experts in MDGs and to train the trainers and professionals involved with MDGs.

7. To **conduct** research of psycho-pedagogical impact for the spread of MDGs
8. To **collaborate** and cooperate with internal units of AIT and external institutions, countries and regional organizations, including UN, NGOs, civil societies engaged in MDGs focused activities.
9. To **organize** seminars of experts and to make publications, press relations on MDGs.
10. To **harmonize** the internal AIT initiatives on Gender, MDGs and Corporate Social Responsibility (CSR).
11. To **document** research on related themes of the MDGs and to disseminate the impacts of MDGs.
12. To **coordinate** and **cooperate** with Schools, Fields of Study, and AIT Extension for the

integration of MDGs into the core curricula



10.2.5 Governance



10.2.6 Staff

All ARCMDG staff is regulated by the AIT human resources rules and by AIT contracts. ARCMDG accepts short term internships and issues contracts to its shortterm consultants according to AIT standards.

10.2.7 Organization of Work

The work of ARCMDG is managed by a Director, under the guidance of a Steering Committee composed of AIT faculty, and of an Advisory Board composed of eminent personalities.

ARCMDG is presently organized in four units of work plus the director's office. AIT provides administrative and management support and

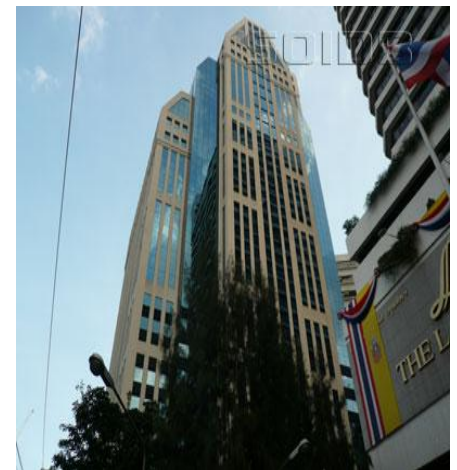
oversight to ARCMDG, including administrative services, finance, budget, human resources and other support services.

The four units of work are:

1. Eradication of extreme poverty and hunger
2. Gender equality and women empowerment
3. Environmental sustainability
4. Global partnership for development.

ARCMDG training and capacity building services are implemented as far as possible through the AIT Extension. ARCMDG outreach, applied research and policy

facilitation work is done by ARCMDG staff in collaboration with partners.



10.2.8 Location and Facilities

During 2011 ARCMDG was located at the AIT Campus in Pathumthani, near Bangkok, Thailand. The ARCMDG office facilities were located at the AIT Conference Centre. After the flood on Oct. 21st 2011, ARCMDG was relocated to new premises at: One Pacific Place, 142 Sukhumvit Road, Bangkok, Thailand.

10.2.9 Background information on the Director

Dr. Sandro Calvani had applied to join AIT to support its management in strengthening outreach activities with particular reference to sustainable human development. AIT President Prof. Said Irandoust announced the nomination of Dr. Calvani (effective Sept 2010) as follows: “Dr. Sandro Calvani will join as Director of the ASEAN Regional

Centre of Excellence on Millennium Development Goals (ARCMDG) at the Asian Institute of Technology (AIT) from 01 September 2010. Aside from his main responsibility as the Director of the ASEAN Regional Center of Excellence of MDGs, Dr. Calvani will also be assisting the AIT Yunus Center, CSR Asia Center at AIT, fundraising efforts of AIT; and in AIT’s regional expansion plans through the conduct of pilot studies of priority countries as part of the examination of a new funding model for AIT, being conducted, under the auspices and overall direction of the AIT Executive Committee and Board of Trustees”.

Calvani joined AIT after 30 years of international public service with International NGOs and UN programmes as a Senior Manager, Director and Director General in various duty stations in four continents (1980 -2010).

Dr. Calvani’s cv is available at

www.sandrocalvani.it and at: http://en.wikipedia.org/wiki/Sandro_Calvani

10.2.10 On-going Activities

A Review of on-going AIT work related to MDGs

AIT teaching, research and outreach on MDGs encompass various activities which include regular academic courses, professional and executive advance training.

The regular academic courses offered by AIT include a strong focus on MDGs related knowledge

MDG 1: Eradicate Extreme Poverty and Hunger

D60.01 Development Economics

IN00.21 Sustainable Development

ED77.01 Rural and Regional Development



ED77.05 Rural-Urban Relations

ED77.08 Agricultural Development Planning

ED77.13 Rural-Regional Planning Workshop

ED77.14 Community Development Planning

ED77.9006 Selected Topic: Sustainable Development Policies and Practices

MDG 3: Promote Gender Equality and Empower Women

ED75.01 Gender and Development

ED75.02 Society, Technology and Health

ED 75.03 Gender, Enterprise and Organizations

ED 75.04 Gender, Rural Livelihoods and Sustainable Development

ED 75.05 Gender, Technology and Economic Development

ED 75.06 Gender, Culture and Human Development

ED 75.08 New Technology, Industrialization and Gender

ED 75.09 Transforming Gender Ideologies in Society

ED 75.10 Gender, Urbanization and Urban Management

ED75.9002 Selected Topic: New Technologies, Industrialization and Gender:

ED75.9003 Selected Topic: Workshop on Gender, Environment & Development

ED75.9004 Selected Topic: Gender Politics, Civil Society & Human Rights

ED75.9005 Selected Topic: Gender, Migration and Human Trafficking in Asia

MDG 7: Ensure Environmental Sustainability

ED78.02 Biological Processes

ED78.03 Physico-Chemical Processes

ED78.04 Aquatic Chemistry

ED78.05 Waste Reduction and Recycling

ED78.06 Air Pollution and Air Quality Management

ED78.07 Solid Waste Management

ED78.08 Environmental Quality Management

ED78.09 Environmental Management and Ethics

ED78.10 Environmental Health and Sanitation

ED78.11 Integrated Life Science:

ED78.12 Principles of Toxicology

ED78.13 Health, Development and Environment

ED78.14 Membrane Technology in Water and Wastewater

ED78.15 Design of Water Supply and Wastewater Systems

ED78.16 Applied Microbiology and Laboratory

ED78.17 Advanced Processes for Wastewater Treatment, Reuse and Recycle:

ED78.18 Toxic Organics and Trace Metals in Ecosystem

ED78.19 Environmental Impact Assessment:

ED78.20 Industrial Waste Abatement and Management

ED78.21 Water Quality Management

ED78.22 Air Pollution Modeling and Applications:

ED78.23 Hazardous Waste Technology and Management

ED78.25 Principles of Cleaner Production:

ED78.27 Environmental Toxicology

ED78.28 Health/Environmental Risk and Impact Assessment:

ED78.31 Bioengineering and Environmental Health:

ED78.9010 Environmental Economics

ED79.01 Urban Environmental Management Systems

ED79.03 Urban Planning and the Built-Environment

ED79.04 Environmental Science and Technology for Decision Makers

ED79.05 Urbanization and Environmental Policy

ED79.06 Environmental Auditing

ED79.07 Disaster Management in Urban Environmental Planning:

ED79.08 Environmental Legislation

ED79.09 Urban Environmental Design

ED79.10 Urban Environmental Planning and Management
Workshop: ED79.12 Management of Urban Housing

ED79.13 Strategic Environmental Assessment for Urban Development

ED79.14 Governance and Urban Management

ED79.15 Urban Economics and Finance

ED79.16 Environmental Conflict Resolution and Mediation

AIT Extension has a wide portfolio of professional and executive courses focused on MDGs

- 1) Agri-Business Management
- 2) Food Safety and Quality Management
- 3) Sustainable Land Management and Extension Techniques

- 5) Quality Assurance for Higher Education and Training Institutions
- 6) Toxic and Hazardous Waste Management
- 7) Urban Environmental Planning and Management
- 8) Sustainable Sanitation System and Technology

- 10) Rural Entrepreneurship Development
- 11) Urban Poverty Reduction
- 12) Gender Mainstreaming into Plans
- 13) Program and Legislation: Political & Electoral Process
- 14) Organizational Changes to accelerate and localize



4) Project Management, Monitoring and Evaluation

9) Management for Development Results

MDG implementation.

ARCMDG led training initiatives in 2011 included the following:

- 1) Training on Development Planning & Governance for Poverty Reduction, Thailand Jan 24th – 9 Feb. 9th 2011 for India government officials;
- 2) Training and Multi-Country Study Visits Program on "Public Service Delivery, Management and Governance" Thailand, Singapore and Australia, on Feb 21st – March 4th 2011);
- 3) Senior executives' training cum study visit on Project Management, Manipur, India Sept 31st – Oct 12th 2011, co-organized with AIT GIC.

10.2.11 AIT Outreach

ARCMDG has cooperated with various internal consultations initiated by himself or by other colleagues to deeper the knowledge, understanding and internal coordination of the AIT outreach activities oriented to facilitate various aspects of sustainable human development. The complete list of development related AIT outreach activities became better known internally and externally as a result of such systematizing approach. For example an initial list of AIT outreach activities related to MDGs was published in April 2011

including the following twelve Centers of Excellence:

- **AIT Consulting** was established with the mission to enhance the application of science and technology to development in Asian region. It provides higher standard services in the field of science, engineering and technology through knowledge, information and expertise sharing.
- **ASEAN Regional Center of Excellence on Millennium Development Goals (ARCMDG)** catalyzes the achievement of MDGs in ASEAN countries and elsewhere through capacity building. Programs are carried out in close collaboration with ASEAN Secretariat, governments, UN agencies and CSOs.
- **CSR Asia Center at AIT** is a joint venture partnership between CSR and AIT and brings together the strengths of the two founding organizations. It contributes to knowledge development and assists private sector on the impact of climate change.
- **Center of Excellence (CoEN) in Nanotechnology** has developed an innovative poor-man's nanotechnology

approach; COeN supports innovative research in the region also training experts with cutting-edge cross-disciplinary research. COeN promotes public and industrial awareness of nanotechnology.

- **Sustainable Development in the Context of Climate Change (SDCC)** enhances the AIT's research efforts providing an effective platform to discuss and launch new initiatives to address issues on sustainable development and climate change
- **Geo Informatic Center** creates training opportunities for regional organizations to help in capacity building. International training courses in GIS and its related material are also provided.
- **WHO Collaborating Center** provides technical expertise and consulting to WHO, its Member States and development partners. Specific researches on health impact assessment, health risk assessment and environmental management for health risk reduction are given to collaborating institutions.

- **United Nations Environment Programme (AIT/UNEP) Regional Resource Center for Asia and the Pacific** was established in 1989 to provide technical assistance with capacity building and informed decision making in accordance to UNEP's MTS priorities and implementation program in Asia and the Pacific.
- **Yunus Center at AIT** is the result of collaboration between Nobel Laureate Prof. Muhammad Yunus and AIT in order to contribute to poverty alleviation and sustainable development by promoting, developing, disseminating and implementing social business ideas and projects.
- **United Nations Office at AIT** increases cooperation and interaction between AIT and various UN agencies at regional and local level on common issues such as climate change, environmental preservation, biodiversity and water and sanitation.
- **Asian Center for Transportation Studies (ACTS)** aims to enhance the role of knowledge dissemination in improving

road safety for rural communities. ACTS provide also road safety training programs for countries' officials.

- **Energy and Environment Partnership with the Mekong Region (EEP)** aims to support wide provision and use of renewable energy and to combat climate change. Projects are funded by the Ministry for Foreign Affairs of Finland and the Nordic Development Fund.
- Several other AIT initiatives encompass various MDG related activities and the consultation with them is ongoing. They include: The Wetlands Alliance, North South project, Telecom Sans Frontieres, Asia - Africa Foundation (ASAFO).

The prioritization of the mentioned ongoing activities and their inter-linkages appear to be quite undefined, with few exceptions. A bulk of AIT MDGs related activities appear to be influenced by donors' grants and/or specific sectoral interests and expertise of the line managers.

However an initial **conclusion of such fact-funding review** is that already several relevant AIT initiatives contribute to the

knowledge management and applied research on MDGs. Such activities, as a group, represent a sizeable contribution to the attainment of MDGs, both in terms of quantity and of quality. Therefore instead of increasing further the number of activities, AIT should focus on a better defined work plan



on MDGs and a much better (now practically non-existing) internal and external communication on the AIT MDG work plan

Consultations on ARCMDG priorities.

A wide consultation of several partners was continued in 2011 on windows of opportunities for ARCMDG cooperation with other initiatives. **The officers, managers and colleagues consulted at UN bodies, Universities, government. Offices, NGOs, press, private sector, embassies, include 240 people** (database available at ARCMDG). A follow-up of such consultations will be soon initiated also through a new blog (<http://arcmdg.blogspot.com/>) created by ARCMDG. A few major

suggestions came out loud and clear from such consultation, including the following:

AIT implements many outstanding and excellent activities. Despite the fact that its public communication might be improved, the innovation character of AIT contribution to sustainable development is well recognized. AIT should develop a concise concept note on its work plan to contribute to the attainment of MDGs and call a compact donors' forum to consult all partners on such work plan.

As soon as AIT is officially recognized as an International organization, AIT (through ARCMDG or other Excellence Centers) should request to be invited in all inter-agency consultations and working groups convened and coordinated by UNDP in Bangkok

Facilitation of international policy making on MDGs.

During the reporting period Dr. Calvani and ARCMDG attended major conferences on MDGs policy making where AIT contribution was invited. They included the following:

January 2011

- On 10 January 2011, upon the invitation of ASEAN, Dr. Calvani attended (as the only external participant) the ASEAN internal Cross-Sectoral Consultation on

Millennium Development Goals (MDGs) in Jakarta.

- ARCMDG organized an International workshop on ASEAN MDGs Roadmap for ASEAN Senior officials in Bangkok on 24-25 January, that was fully funded by UNDP and ASEAN. More than 130 Senior Officials including 8 UN agencies attended. A complete plan on future follow-up was approved.
- ARCMDG was invited and attended on 26 Jan the closed session of ASEAN Senior Officials on Rural Development and Poverty Elimination to consult on how to strengthen collaboration between ASEAN and ARCMDG.
- The two consultations mentioned above re-



launched a strong interest on ASEAN MDGs work which led to the final approval of the ASEAN roadmap for the attainment of the U.N. Millennium Development

Goals, which was then approved in August 2011.

<http://www.aseansec.org/documents/19th%20summit/MDG-Roadmap.pdf>

The 26 pages document presents in detail the whole ASEAN plan of work on MDGs. ARCMDG work is recognized in the same document.



March 2011

Upon an invitation by the US State Department, Dr. Calvani attended the 2011 APEC ACT senior officials meeting from 2-4 March in Washington DC. The consultation included the future APEC plan of action to enhance member economies collaboration to reduce forms of crime and corruption which affect the attainment of MDGs as well as innovative collaboration between APEC's human security policies and MDGs policies.

September 2011

Upon an invitation by the ASEAN Secretariat Dr. Calvani attended the

Regional Workshop on MDG data validation, where the final consensus was reached on the publication of the first **ASEAN statistical report on MDGs implementation**.

The workshop agreed on ASEAN MDGs indicators: <http://www.arcmdg.ait.asia/indicator.htm>

October 2011

Upon an invitation by GIZ and the Bank of Indonesia Dr. Calvani attended the Workshop on “Managing Regional and Global Governance on MDGs in Asia: Opportunities and Challenges for the ASEAN Economic Community” in Jakarta on Oct. 6th – 8th where he delivered a keynote speech and chaired a panel session.

November 2011

Upon an invitation of the Australian and Malaysian Govts. Dr. Calvani attended the International IFNGO Conference on “Strength, Unity and Diversity: Time for an International Voice for NGO's” in Kuala Lumpur on Nov. 8th -11th where he made two key note speeches.

3. Governance and Management

1. A regular meeting of the **ARCMDG Board of Advisers** was convened in Jan 2010

which gave various suggestions to ARCMDG Management.

2. The duties of **ARCMDG management** were regularly performed and included:

- Attendance of more than 30 internal consultation among AIT Managers and faculty
- Preparation, monitoring and execution of ARCMDG budget according to approved plans; the monitoring of the budget is reported in a separate process, led by AIT finance, and therefore not repeated in this report
- Supervisions and guidance for two staff and 3 interns;
- Supervision of ARCMDG training courses;
- Planning and execution of ARCMDG external relations, partnerships and public communication;
- Networking with other AIT centers of excellence, AIT schools and research activities.

- Consultation with ARCMDG experts, focal points at AIT schools, Steering Committee, ARCMDG Board of Trustees, AIT President and Vice Presidents.
- Preparation, organization and follow-up of the meetings of ARCMDG Board.

4 Partnership, networking and fundraising

ARCMDG joined the global network Beyond2015 which advocates a fundamental shift on the international community's thinking and cooperative action on sustainable development: www.beyond2015.org The campaign brings together more than 280 organisations from over the world, but ARCMDG is the only regional one in Asia-Pacific.

10.3 CSR ASIA CENTER AT AIT (CSRACA)

10.3.1 Introduction

The CSR Asia Center at AIT (CSRACA) is a joint venture partnership between the Asian Institute of Technology (AIT) and CSR Asia, the leading provider of information, training, research and consultancy services on sustainable development practices and corporate social responsibility (CSR) in Asia. It brings together the strengths of the two founding organizations in pursuit of its vision of a dynamic, competitive business environment in Asia, in which the private sector is equipped to develop and implement innovative solutions for the challenging issues of sustainable development in a strategic and effective manner.

In line with AIT's commitment to the pursuit of sustainable development

as a central part of its mission, AIT promotes an inclusive approach in line with the increasingly widely accepted perception that single sector solutions to development are likely to fail. All stakeholders, including the private sector, need to be proactively engaged to respond to key sustainability and development challenges such as climate change, poverty alleviation, and other development targets as defined in the Millennium Development Goals. CSR as an

approach to driving private sector contributions to sustainable development and business solutions to a variety of global challenges is therefore an important issue area for AIT

10.3.2 Background

In November 2008 AIT hosted CSR Asia's annual Summit that attracted more than 300 delegates from around the region. That marked a significant achievement in a partnership that had been developed more than a year previously. In the summer of 2007 a week-long Leadership Programme led by CSR Asia and supported by United Nations University (UNU) saw the first successful intensive CSR programme mounted through AIT

well established and respected academic institution and the leading corporate social responsibility enterprise in Asia, the CSR Asia Center at AIT was established based on an agreement between AIT's President and CSR Asia's Chairman in 2009. It started its operations with the hire of a full-time director in January 2010. The agreement was formalized by the public signing of a Memorandum of Understanding, effective for three years from the date of signature, by both parties at the official launch of the Center in March 2010.

10.3.3 Mission

The mission of the CSR Asia Center at AIT is to

1. Advance the development and implementation of effective and innovative sustainability solutions and CSR strategies for and by business; and
2. Facilitate the development of supportive framework conditions for corporate social responsibility (CSR) and sustainable development.

Beyond2015

About us News Must haves Resources

Who we are



Beyond 2015 is an international campaign to kick-start and accelerate the post Millennium Development Goals process.

The campaign brings together more than 100 50 countries - this includes over 40 organisations, 20 countries - 600 members and 1000+ people worldwide. www.beyond2015.org

Extension.

Based on the sound foundation of a successful partnership between a

10.3.4 CSR Asia – a strong partner for AIT

CSR Asia operates as a dynamic not-for-profit social enterprise with offices and partnerships across the Asia Pacific region. Established to promote sustainable development in Asia, CSR Asia advocates strategic approaches to corporate social responsibility and business solutions to global challenges to businesses and their stakeholders in the region and beyond. It provides independent and cutting edge services and expert insight on CSR.

CSR Asia has an extensive network of companies, business associations, NGOs, and other organizations across the Asia Pacific region, many of which actively engage with CSR Asia on an ongoing basis through the CSR Asia Strategic Partnership Program (CASP).

CSR Asia has acted as a consultant to some of the world's leading brands and locally listed companies in Asia. It has undertaken research for a number of United Nations and development agencies on a variety of issues related to the role of the private sector in sustainable development and business solutions to global challenges. Furthermore, CSR Asia has delivered training to hundreds of managers and executives, from business and other organizations, engaged with thousands through a variety of events and knowledge exchange

platforms. It also provides CSR intelligence to tens of thousands weekly through its newsletter and website.

10.3.5 Key Activities

CSRACA's key activities are:

- 1) Offering a professional Master's degree in CSR. The Master's in CSR is an executive style course comprised of eight four-day intensive modules. The modules can also be taken as stand-alone courses for professionals seeking to deepen their skills on a specific CSR topic.
- 2) Short training sessions on a variety of topics related to CSR. This includes ISO 26000, Community Investment, and CSR Essentials. These courses are designed for professionals in the private sector, national and local governments, NGOs and international organizations.
- 3) Providing consultancy services for companies seeking to improve their CSR programs as well as not-for-profit organizations seeking to engage the private sector as partners in sustainable development initiatives

- 4) Conducting research addressing issues and trends relevant to CSR in Asia, including the role of the private sector and social enterprise in poverty alleviation and other sustainability issues.
- 5) Participating in building ongoing dialogue leading to a shared understanding of challenges and solutions for CSR among businesses, policy makers and civil society.
- 6) Assisting with promoting the activities of AIT and its other specialized Centers.

10.3.6 Key Objectives

The key objectives for the CSR Asia Center at AIT are to:

- Create a platform for dialogue among the private sector as well as government agencies, international organizations, and civil society organizations to further innovation, partnerships, and creative solutions for the challenging issues of sustainable development
- Contribute to knowledge development about the effectiveness of different approaches used in the field of CSR, and the generation

of innovative practices, methods, and policies

- Facilitate the generation of capacity for sustainable business, community development and partnerships with business for poverty alleviation and delivering on the other Millennium Development Goals
- Contribute to preparing the region for the impacts of climate change and harnessing the innovative capacity of the private sector to proactively contribute to mitigation efforts as well as to building adaptive capacity and resilience.

10.3.7 Governance and Staffing

Advisory structure

The CSRACA Director is supported through ongoing advice and guidance from key senior representatives of both AIT and CSR Asia.

Reporting structure and staff development

The CSRACA Director reports directly to the AIT President and the CSR Asia Chairman.

The CSRACA Director manages the CSRACA program staff, and admin

team. Starting with the hire of the Director in January 2010, the Center has grown to 8 fulltime staff by the beginning of 2012.

Internships and Student Assistantships

Since its inception, the CSRACA has offered three summer internships of two months duration each to MBA candidates from AIT's School of Management and contracted 2 Student Assistants for short term project support.

10.3.8 Profile of Services

Training and capacity building

Delivering knowledge and skills development for businesses and their stakeholders to address general and sector-specific solutions in the area of CSR and the role of the private sector in sustainable development

Consultancy

Specialized advisory services on CSR and sustainable business strategies, including CSR strategy development, sustainability reporting, benchmarking and gap analysis on CSR, stakeholder engagement, workshops, etc

Research

In-depth examinations of issues and trends relevant to CSR and business contributions to and partnerships with business for sustainable development in Asia with a Mekong

sub-region focus; tracking the needs and aspirations of stakeholders and the private sector

Engagement

The Center facilitates on-going dialog on CSR approaches, tools, practices, solutions, opportunities, and challenges through a variety of platforms. It contributes to a shared understanding and effective approach to business solutions to global challenges, sustainable business practices in the region, as well as the challenges and opportunities for partnership approaches. It seeks to build linkages with organizations and networks with similar missions in the region and actively explores collaboration opportunities to maximize impact towards its mission.

10.3.9 Professional Master's Degree in CSR

As CSR is only slowly being integrated into the curricula of MBAs and other management qualifications in Asia and globally, many executives tasked with a CSR portfolio do not have formal training and specialised expertise to deliver on meaningful CSR programmes linked to core business strategies. In partnership with CSR Asia, delivered through AIT's School of Management, and coordinated by the CSRACA, AIT is pioneering a flexible executive style professional

Master's degree in CSR to respond to this capacity gap.

The program was launched in September 2011 and consists of eight intensive modules, which will be delivered at least once per year each. The first module covered "Environmental Management and Climate Change." Two additional modules were delivered in 2011: "Value Chain Risk Management", "Community Investment and Development". The remaining 5 modules will be offered in 2012 to complete the first cycle by August 2012 and cover "Human Resource Management, Diversity and

Inclusion", "Corporate Governance, Fair Operating Practices and Government Relations", "Business Strategy and Social Responsibility", "Development, Poverty Alleviation and Social Business", "Business and Human Rights"

The objective of the degree is to provide participants with professional competencies and skills in the fields of sustainable development and CSR. It is designed to help build the capacity necessary to ensure that the business sector is better prepared to manage global sustainability challenges responsibly and contribute to the achievement

of targets such as the Millennium Development Goals in a dynamic, competitive business environment. The program is the first of its kind in Asia and a timely initiative that will help meet the capacity gap within firms and other organizations to deliver on CSR programs that meet business needs for long-term competitiveness whilst contributing to sustainable development in the Asia Pacific region.

Contact: Leena Wokeck Director,
CSR Asia Center at AIT 9th Floor One
Pacific Place Email: leena@ait.asia
Phone: +66 839 21 64 21

Chapter 11: INSTUTED WIDE SPONSORED AND CONTRACTED PROJECTS

11.1 Grants and Sponsored Research Completed in 2011

Training Workshop Thematic Research on Gender mainstreaming and Economic empowerment

Duration: 6-Feb-09 30-Jul-11
Project Investigator(s): Jayant K Routray
Sponsor: UNIFEM
Total Contracted Amount (THB): 1,650,000

The Advance International Training Program "Putting Ideas to work strategies for Innovation led Sustainable growth" ITP 2010

Duration: 1-Mar-10 28-Feb-
Project Investigator(s): Sudip K Rakshit
Sponsor: VINNOVA
Total Contracted Amount (THB):743,325

Development Planning & Governance for Poverty Reduction

Duration: 1-Oct-10 30-Mar-11
Project Investigator(s): Jayant K Routray
Sponsor: Government of India
Total Contracted Amount (THB): 2,240,250

Gender mainstreaming and equality with focus on MDG's

Duration: 26-Nov-10 25-Mar-11
Project Investigator(s): Jayant K Routray
Sponsor: UNDP Afghanistan
Total Contracted Amount (THB): 1,102,000

UN Policy mitigation project

Duration: 1-Dec-10 30-May-11
Project Investigator(s): Sudip K Rakshit
Sponsor: UNEP ROAP
Total Contracted Amount (THB): 599,800

Capacity Building for Poverty Reduction strategies"

Duration: 1-Jan-11 30-Jun-11
Project Investigator(s): Jayant K Routray
Sponsor: Government of India
Total Contracted Amount (THB): 2,088,000

Regional Workshop on the ASEAN Roadmap for the attainment of MDG's 24-25 January 2011, Bangkok Thailand

Duration: 26-Nov-10 25-Mar-11
Project Investigator(s): Sandro Calvani
Sponsor: UNDP
Total Contracted Amount (THB):683,588

AIT Research Strategy Development

Duration: 1-Jul-10 31-Aug-11
Project Investigator(s): Sudip Kumar Rakshit
Sponsor: SIDA
Total Contracted Amount (THB): 1,540,428

Management and Governance of Poverty Reduction strategies

Duration: 1-Mar-11 30-Aug-11
Project Investigator(s): Sandro Calvani, Lal Samarakoon
Sponsor: The Government of India

Total Contracted Amount (THB):2,043,750

Introduction to Social Business: A concept developed by Nobel Laureate Prof Muhammed Yunu

Duration: 11-Nov-11 30-Nov-11
Project Investigator(s): Riaz Khan
Sponsor: Multi donors
Total Contracted Amount (THB): 225,000

CoE SDCC SNV Bhutan AFP Workshop

Duration: 9-Sep-11 30-Dec-11
Project Investigator(s): Sudip K Rakshit
Sponsor: SNV Bhutan
Total Contracted Amount (THB): 20,783

11.2 On-going Grants and Sponsored Research

Workshop on "Doing Business in Africa"

Duration: 1-Sep-07 31-Dec-12
Project Investigator(s): Vilas Wuwongse
Sponsor: Ministry of Foreign Affairs (MFA) Thailand
Total Contracted Amount (THB): 2,194,280

Capacity Building of Faculty of Engineering, Balkh University, Afghanistan

Duration: 1-Jan-08 30-Jun-12
Project Investigator(s): Naveed Anwar
Sponsor: Balkh University, Ministry of Higher Education, Islamic Republic of Afghanistan

Total Contracted Amount
(THB):42,979,260

Wetland Alliance Secretariat

Duration: 1-Jun-09 31-Dec-12
Project Investigator(s): Hans Guttman
Sponsor: SIDA
Total Contracted Amount (THB):
18,529,145

Wetland Alliance Aqua Outreach Program

Duration: 1-Jun-09 31-Dec-12
Project Investigator(s): Theo Ebbers
Sponsor: SIDA
Total Contracted Amount (THB):
11,086,333

URC TNA Project

Duration: 9-Sep-10 31-May-12
Project Investigator(s): Sudip Kumar
Rakshit Sponsor: UNEP Riso Center
Denmark
Total Contracted Amount
(THB):4,516,024

SYKE - Policy Learning

Duration: 1-May-11 05-Jan-12
Project Investigator(s): Sudip K Rakshit,
Sangam Shrestha

Sponsor: Ministry of Foreign Affairs of
Finland
Total Contracted Amount (THB):
1,504,404

Asia Pacific International Model Institutions

Duration: 1-Sep-11 30-Oct-12
Project Investigator(s): Sandro Calvani
Sponsor: AIT/Multi donors
Total Contracted Amount (THB):
1,498,512

Comprehensive Programme to enhance Engineering Technology and Science Education in Asia

Duration: 1-Jan-12 29-Feb-12
Project Investigator(s): Theo Ebbers
Sponsor: UNESCO Jakarta Office
Total Contracted Amount (THB):
1,012,200

Improving Marine Protected Area management in Thailand

Duration: 16-Dec-11 01-Aug-13
Project Investigator(s): Theo Ebbers
Sponsor: FAO
Total Contracted Amount
(THB):1,132,000

Sustainable Management of the Bay of Bengal large marine ecosystem

Duration: 1-Aug-11 28-Feb-12
Project Investigator(s): Theo Ebbers
Sponsor:FAO
Total Contracted Amount
(THB):3,144,900

Development planning management and governance

Duration: 9-Jan-11 28-Feb-12
Project Investigator(s): Sandro Calvani,
Lal Samarakoon
Sponsor: State Govt of Manipur India
Total Contracted Amount
(THB):2,244,600

Mekong region waste refinery: International partnerships towards Zero waste Zero landfill and reduce greenhouse gas emission

Duration: 20-Sep-11 30-Nov-12
Project Investigator(s): Muhammad Abu
Yusuf
Sponsor: EEP Mekong
Total Contracted Amount
(THB):8,406,000

Chapter 12: OVERVIEW OF RESEARCH ACTIVITIES OF 2011 AND STUDENTS COMPETITIONS

12.1 OVERVIEW OF RESEARCH ACTIVITIES FOR 2011

Overall during the period January to December of 2011 there were **435** sponsored and contracted projects which were conducted by the faculty and staff from within the Fields of Study (FoS) of the three schools, SET, SERD and SOM, as well as in AIT Extension, IntERLab, and Institute wide projects. The total Publications for the same period stood at **417** from across AIT. The breakdown of which is indicated in the table below

School/Fos	Sponsored & contracted projects			Refereed journals	Publications			total publication
	completed	ongoing	total projects		conference proceedings	refereed Books	Other publication	
SET								
CSIM	1		1	10	14			24
CEIM	4	3	7	2	4			6
GTE	5	8	13	6	4			10
IME	5	6	11	14	15			29
Mech/MES	4	7	11	14	10			24
RS&GIS	10	12	10	8	1			9
StE	9	6	15					
TC	1		1	8	30	1		39
TrE	6	6	12	8	3			11
WEM	7	16	23	30	6	1	3	37
OTM		1	1					
Nano	6		6	15	3			18
Total	58	65	123	115	90	2	3	205
SERD								
ASE	4	7	11	4	2			6
AARM	5	3	8	8	12			20
Energy	3	17	20	22	4		22	48
EEM	19	22	41	30	2			32
FEBT	9	7	16	20		1		21
GDS	9	14	23					
NRM	1	5	6	9		4		4
RRDP	4		4	13		1		1
UEM	1	4	5	11	1	2		
PPT								
ABM								
total	55	79	134	117	21	8	22	168
DPMM		3	3					
SOM	7	12	19	37	7			44
InTERLab	5	6	11					
AIT Ext	92	30	122					
SDCC								
ARCMDG	11	12	23					
Inst-wide								
CSRACA								
Total	228	207	435	269	118	10	25	417

For the same period January to December of 2011 there was a total of **82** Doctoral Dissertations which were undertaken by the faculty from within the Fields Study (FoS) of the three schools, SET, SERD and SOM. The total Masters Student Research for the same period stood at **627** from within the three schools. The breakdown of which is indicated in the table below.

SCHOOL/FoS	DOCTORAL STUDENTS' DISSERTATION	MASTERS STUDENTS RESEARCH				TOTAL MASTERS STUDENTS RESEARCH
		<i>Thesis</i>	<i>Research Studies</i>	<i>Projects</i>	<i>Internships</i>	
SET	26	187	45	52	8	292
CS/IM		11	3			14
CEIM		21		52		73
GTE	2	13	16			29
IME	4	11	6			17
Mech/MES	3	15	1			16
RSGIS	6	15				15
StE	1	28				28
TC	4	10	4			14
TrE	2	11	2			13
WEM	3	23	4			27
<i>ICT</i>	1	14	9			23
<i>OTM</i>		23			8	31
SERD	53	153	26		1	182
ASE	3	10				10
AARM	6	3	2			5
E	6	31	5			36
EEM	14	25	15			40
FEBT	6	20				20
GDS	1	11				16
NRM	7	11	1			12
PPT		8				8
RRDP	8	18	1			19
UEM	2	10	2			12
ABM		6				8
<i>DPMM</i>		7			1	8
<i>GTD</i>		5	1			6
SOM	3		16	125		141
TOTAL	82	352	88	177	10	627

12.2 STUDENTS COMPETITIONS

12.2.1 AIT Masters Theses Competition 2011

The 6th AIT Masters Theses Competition was held on the 16th of May 2011. There were seven competition categories (see below) and students with excellent grades in their theses were nominated to represent their respective fields of study. These presentations have been judged according to the relevance; originality; scientific/society contribution; general knowledge of the field; future potential for innovation; and presentation skills. A total of 40 students participated in the competition. There were 24 judges from industry, developmental agencies, international organizations, universities, etc. A number of spin of activities and possibilities including employment, projects, interaction with other organizations, press coverage, etc. from the competition.

The winners of the respective categories were the following:

Category	Name / Title of Presentation	Advisor
Resources	Ms. Melada Supakijnoraset Antimicrobials from <i>Lactobacillus plantarum</i> Isolated from Turmeric (<i>Curcuma longa linn.</i>) and their Applications as Biopreservative and in Edible Film	Dr Anil Kumar Anal
Civil Engineering	Mr. Michael Lim Co Development of a Low-Cost Repair Concrete	Dr Pennung Warnitchai and Dr. Thanakorn Pheeraphan
ICT	Mr Somchok Sakjiraphong Road Lane Estimation from a Moving Monocular Camera	Dr Matthew N Dailey
Development	Ms Phitchaporn Robru Factors Influencing Rural Ruffian Gangster Activities in Rural Thailand: A Case Study in Social Development	Dr Soparth Pongquan
Information Systems	Mr Setyono Hari Adi Capacitive Deionization for Desalination with Zinc Oxide Nanorods	Prof Joydeep Dutta
Management	Ms Patarawan Chaowasakoo Coal Hauling Cycle Time and Operational Performance in Mining Industry: A case study of PT. Trubaindo Coal Mining, Indonesia	Dr Winai Wongsurawat
Energy/Environment	Mrs Helayaye Damitha Lakmali Abeynayaka Biofilters for mitigation of GHG emissions from waste sector	Prof Ajit Annachhatre

12.2.2 AIT RESEARCH COMPETITION 2011

The third AIT v.research Competition, an initiative to encourage student researchers to hone their ability to convey an idea in a clear, concise and entertaining way, was conducted on 19 May 2011. All AIT students were invited to be a part of the next generation of “AIT Film Makers” by composing and producing a 3-minute video about their thesis. Students worked as a team or went solo, provided that only one thesis work was covered per video. Music, narration and other media styles were used to enhance their videos.

Organized by the Office of Vice President for Academic Affairs, the AIT Student Office and the Media and Communications Unit (MCU), the event was supported by the AIT Alumni Association, the AIT Student Union, and the Office of the President respectively.

Mr. Phattanapon Rhienmora swept the awards with his video “Better Dentists through Virtual Reality.” His video emerged a clear winner, grabbing the Grand Prize (a Canon Legria M300 HD camcorder) as well as the prizes for producing a video “most likely to be shown on television,” as well as the “most creative and entertaining video.” A doctoral university student at the Computer Science field of study, his research is on haptic devices.

The “Popular Choice” award was hotly contested with participants employing their social networking and marketing skills. This award went to the video “Pure water under the Sun” by Mr. Sunandan Baruah, a graduating Ph.D. student from Nanotechnology, who also won the award for “Best in Communicating Science.” The President’s Choice award went to Mr. Hitesh Nidhi Sharma for “The Origami Design.”

Leading the panel of esteemed judges was film maker Mr. Ryan White; popular TV host Mr. Warin Sachdev; Head of events and exhibition director at the Thailand Creative and Design Center, Mr. Pichit Virankabutra; Director, Information Technology Museum, Dr. Aphiya Hathayatham; and AIT’s Vice President for Resource Development, Prof. Worsak Kanok-Nukulchai.

The judges complimented the creative talent of the students and stressed that science communication was an extremely difficult art. It is critical to target the audience, particularly in the mass media, they averred.

Earlier Prof. Joydeep Dutta, Vice President for Academic Affairs inaugurated the competition and stressed the importance of communication among scientists and professionals alike. The competition, now in its third year was organized by the Media and Communications Unit (MCU), External Relations and Communications Office (ERCO).

The prize winners in the Vresearch competition are:

Grand Prize: Mr. Phattanapon Rhienmora for the video “Better Dentists Through Virtual Reality”
President's Choice: Mr. Hitesh Nidhi Sharma for “The Origami Design.”

Popular Choice: Mr. Sunandan Baruah for the video “Pure Water under the Sun”

Special Prizes:

Best Cinematography: Mrs Jannatul Ferdous for “Friend of Farmer”

Best Soundtrack: Mr. Hitesh Nidhi Sharma for “The Origami Design”

Most likely to be shown on TV: Mr. Phattanapon Rhienmora for “Better Dentists through Virtual Reality”

Best Performance in a Video: Mr. Hitesh Nidhi Sharma for “The Origami Design”

Most Creative and Entertaining: Mr. Phattanapon Rhienmora for “Better Dentists through Virtual Reality”

Best in Communicating Science: Mr. Sunandan Baruah for “Pure Water under the Sun”

Audience Choice: Mr. Piyapong Saengmanee for “2011 Modern Farmer”