Department of Energy, Environment and Climate Change

School of Environment, Resources and Development

You are cordially invited to special lecture to be delivered by **Prof. Maria Elektorowicz**, Department of Building, Civil and Environmental Engineering, Concordia University, Montreal, Canada.

"Sustainable decentralized system for recovery water from wastewater using membrane electro-bioreactor (MEBR)"

Date: **Monday, 15 January 2018**

Time: **14.00-15.00 hrs.**

Place: **S-101**
(SERD's Meeting Room)

Abstract: Centralized wastewater treatment plants (WWTPs) consist of many operation units, while each unit is dedicated to the removal of a distinct wastewater component recognized as a pollutant of environment. Subsequently, existing wastewater treatment facilities have a large footprint and use a significant amount of energy. On other hand, the access to clean water declines due to development of megacities, pollution of water resources, an excessive usage of water for food production - to mention a few factors among many.

A newly developed technology called Membrane Electro-Bioreactor (MEBR or SMEBR) is a sustainable technology which permits on water recovery directly from wastewater in centralized and decentralized WWTPs. Then, it can be applied in megacities as well remote locations. MEBR combines three operational processes: biological treatment, membrane filtration, and electrokinetics in one hybrid reactor. It is able to create oxidation and reducing conditions within one reactor. Then, it eliminates many conventional operation units (e.g. primary and secondary clarifiers, denitrification tanks, phosphorous removal unit). Thus, it decreases footprint and energy consumption while producing so high quality effluent that can be recovered as domestic water. This original process has been tested in lab and pilot scale; presently, there is ongoing preparation to its application at full scale.

SPEAKER PROFILE

Dr. Maria Elektorowicz is a professor in Environmental Engineering in the Department of Building, Civil and Environmental Engineering at Concordia University located in Montreal (Quebec), Canada. Beside Concordia University she has been professionally active at McGill University (Canada), Flinders University (Australia), University of Constantina (Algeria), Warsaw University of Technology (Poland) and others. She is an elected Fellow of Canadian Society for Civil Engineering, and recipient of the Albert E. Berry Medal (for significant contributions to the field of Environmental Engineering in Canada) as well as many other international and national awards and prices. She is a member of the prestigious Provost's Circle of Distinction at Concordia University. Her professional interest is wastewater and sludge treatment, site remediation, and waste management. Her pioneering work on the electrochemistry application to environmental problems resulted in dissemination of numerous publications and patents.

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