

CityU Technology Transfer Forum

香港城市大學技術轉移論壇

Environmental Pollution and Technologies

Date : 16 December 2010 (Thur)

Time : 2:30 pm to 5:30 pm

Venue : Multi-media Conference Room, 4/F Cheng Yick-chi Building,
City University of Hong Kong, Tat Chee Avenue, Kowloon.

Language: English/Cantonese

Registration Form

To: CityU Business and Industrial Club (CUBIC)

Name: (* Prof / Dr / Mr / Ms) _____

Position: _____

Organization: _____

Phone: (Office) _____ (Mobile) _____

Fax: _____ Email: _____

Address: _____

Are you a CUBIC member? * Yes / No

(* please delete as appropriate)

Notes:

1. Seats will be reserved on a first-come-first-served basis. Please complete and return the registration form to us on or before **9 December 2010** by:
Fax: 2265 8028 or Email: cubic@cityu.edu.hk
2. You are welcome to invite other guests to attend the Forum. Separate form should be used for each application. Please make a copy of the form, if needed.
3. Notification on successful registration will be sent via email by 14 December 2010.

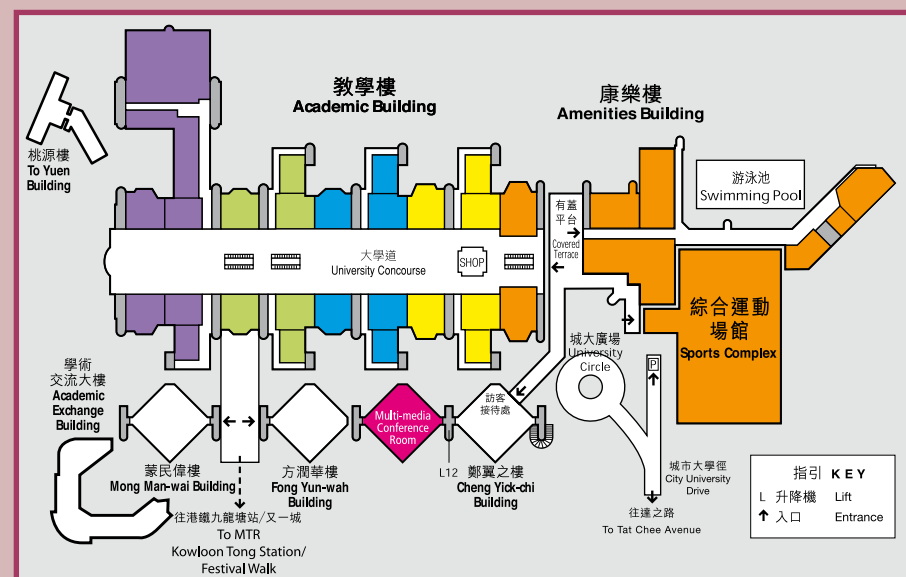
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Website: <http://www.cityu.edu.hk/kto>

Location Map of Venue



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ENVIRONMENTAL POLLUTION AND TECHNOLOGIES

16 December 2010

Venue:

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4/F Cheng Yick-chi Building
City University of Hong Kong
Tat Chee Avenue
Kowloon

Language:

English/Cantonese

Admission:

Free



Organized by:

CityU Business and Industrial Club (CUBIC),
Knowledge Transfer Office,
Office of the Vice-President
(Research and Technology)

CityU Technology Transfer Forum

Environmental Pollution and Technologies

Date: 16 December 2010 (Thur)

Aim

To disseminate mature technologies at City University of Hong Kong to local industry for the advancement of knowledge and technology in Hong Kong.

Programme

Time	Activities
2:30–2:55pm	Registration
2:55–3:00pm	Welcoming Remarks
3:00–3:30pm	Presentation 1: <i>Toxicity Assessment of Marine Sediments and Oil Dispersants Using Aquatic Organisms</i> Dr Richard Cheung , Associate Professor of the Department of Biology and Chemistry
3:30–4:00pm	Presentation 2: <i>Detection and Quantification of Toxic Substances in the Environment</i> Dr James Lam , Scientific Officer of the State Key Laboratory in Marine Pollution
4:00–4:30pm	Presentation 3: <i>Plasma-assisted Catalytic Oxidation (PACO) Technology for VOCs Removal</i> Dr Oscar Hui , Lecturer of the Department of Manufacturing Engineering and Engineering Management
4:30–4:45pm	Q & A
4:45–5:30pm	Networking and refreshment

About the Speakers

Dr Richard Cheung was awarded a Commonwealth Scholarship and got his PhD degree from The University of Manchester Institute of Science and Technology, England. Before joining City University of Hong Kong (CityU), Dr Cheung had worked for the Water Research Centre in England, Department of Biology of the Hong Kong Baptist University, and the Water Policy Group of the Environmental Protection Department of the HKSAR Government. He is a member of Hong Kong Society of Quality and a Fellow Member of Hong Kong Institution of Environmental Impact Assessment. He is also a member of the Appeal Board established under the Environmental Impact Assessment Ordinance, the Laws of Hong Kong; a member of Advisory Committee on the Quality of Water Supplies; and a member of the Accreditation Committee for the Quality Seawater Assurance Scheme established by the Health, Welfare and Food Bureau of the HKSAR Government.



Dr James Lam received his BSc and PhD degrees in environmental science from City University of Hong Kong. After completing his doctorate, he continued to pursue his interests in pollution monitoring in a government laboratory and at the University of Hong Kong as a research associate and a teaching consultant variously. Since September 2010, he has been a Scientific Officer in the State Key Laboratory in Marine Pollution. His research interests include studying the occurrences of novel environmental contaminants such as halogenated flame retardants and other persistent pollutants, and the possible exposure pathways and potential risks arising from the release of these compounds into the environment. His current work comprises the development of fast and cost-effective analytical methods for the quantification of toxic substances in a variety of sample matrices.



Dr Oscar Hui received his PhD degree from the Department of Mechanical Engineering of the Hong Kong University of Science and Technology in 2008. He has extensive research experience in homogenous and heterogeneous combustion, catalysis, air pollution control, desiccant cooling, production of bio-ethanol from rice husk, waste water treatment, and solid waste recycling and management. He has been collaborating with research partners from China, Hong Kong, South Korea, Japan, Singapore and Australia. He has managed more than nine research projects as Principal Investigator with a total research grant of HK\$2.96 Million since he joined CityU in 2008. The on-going projects include "Ozone-catalytic Oxidation System and Process Optimization for Indoor Air Purification" funded by the Research Grants Committee, HKSAR, "Performance Assessment of Plasma Assisted Catalytic Oxidation based Air Purification Technology for Indoor VOCs Removal" funded by the Applied Research Grant Scheme, CityU, etc. He filed one US Patent Application (No.12/900,768) "Gas treatment by catalytic ozone oxidation". He is an editorial board member of *Scientific Journals International* and *International Journal of Engineering*. He also serves as reviewer for a number of journals including *Environmental Science & Technology*, *Journal of Hazardous Materials*, *Water Research*, etc.



Synopsis

Toxicity Assessment of Marine Sediments and Oil Dispersants Using Aquatic Organisms

by Dr Richard Cheung

Hong Kong together with its neighboring municipalities (Macau, Shenzhen, Dongguan, Guangzhou) form an integral part now. This relatively small area in southern China is an economically vibrant area. Land is always in demand. Reclamation from the coastal environment and clearance of navigation channels seem unavoidable. This process relies on the safe disposal of coastal marine sediments. Besides, increase in marine traffic and future development of oil fields in the South China Sea rely on the safe use of oil dispersants. The speaker will share with the audience how various toxicity assessment technologies have been developed in CityU. He will focus on toxicity assessment technologies developed in CityU for marine sediments and oil dispersants. On top of his own work, he will also talk about the work conducted by other academics in the Department of Biology and Chemistry in the area of environmental technologies.

Detection and Quantification of Toxic Substances in the Environment

by Dr James Lam

Many naturally-occurring and man-made substances present in the environment are toxic. To protect human and ecological systems from potential harm, their risks need to be assessed. An important step in the risk assessment procedure is to identify and quantify various toxic substances present in our environment. This presentation will introduce some modern technologies that can be used for the detection and quantification of important toxic substances in our environment including algal toxins, organochlorine pesticides, brominated flame retardants, and perfluorinated compounds. Development of fast and cost-effective chemical, biological, and biochemical methods will also be discussed.

Plasma-assisted Catalytic Oxidation (PACO) Technology for VOCs Removal

by Dr Oscar Hui

Volatile organic compounds (VOCs) present in the environment from a variety of sources (e.g. home/office settings, industrial processes, etc), can bring about many undesirable health consequences. To improve air quality, air purification devices are commonly employed in home, office and industrial settings as a way to remove harmful components from the ambient air. The conventional methods for VOCs removal have been mainly adsorption/separation, thermal incineration and catalytic oxidation. However, these methods have some problems such as waste disposal and high energy consumption for the regeneration of the sorbents or maintaining higher operating temperature (typically 800-1,200°C for thermal incineration and 400-500°C for catalytic oxidation). The plasma-assisted catalytic oxidation (PACO) technology has been proposed as one of the most effective and economically feasible technologies for VOCs removal because of its high removal efficiency and low energy consumption. In the PACO process, ozone is produced by plasma generator, which is capable of dissociating into oxygen atom radical on the surface of catalyst. Oxygen radicals are highly reactive and are capable of reacting with almost any organic molecules. In this presentation, the speaker will introduce the PACO technology for VOCs removal. The advantages of the PACO technology are 1) low operating temperature; 2) intermediate species are adsorbed in the catalyst/substrate; 3) long operational lifetime of the catalyst/substrates. The PACO technology could be of value to the private and public sectors, providing cost-effective indoor air quality and emission control.

