

**UNIVERSITY OF MACAU
FACULTY OF SCIENCE AND TECHNOLOGY**

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- 1) "Ecological Restoration of Metal Mined Sites Using
Phytoremediation Techniques"**
&
**2) "How to Write and Publish Scientific Papers
(Especially for Graduate Students)"**

by

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Date: 21/01/2011 (Friday)

Time: 15:00 - 17:00

Venue: L105

ABSTRACT

1) Ecological Restoration of Metal Mined Sites Using Phytoremediation Techniques

This paper reviews the ecological aspects on how to maintain a long-term sustainable vegetation on toxic metal mine sites. The metal mined sites are man-made habitats which are very unstable and will become sources of air and water pollution, due

to elevated concentrations of different toxic metal(loid)s (e.g., Arsenic, Copper, Lead, and Zinc), which may directly and indirectly threaten human health. Establishment of a vegetation cover is essential to stabilize the bare area and to minimize the pollution problem. In order to remediate the adverse physical and chemical properties of the sites, addition of inert materials (e.g., mine rocks which are not toxic) and organic substrates (e.g., domestic refuse and sewage sludge which contained a lower level of heavy metals) is needed. However, the choice of appropriate vegetation is highly essential. Phytostabilization and phytoextraction are two common phytoremediation techniques in treating metal-contaminated soils, for stabilizing toxic mine spoils, and for removing toxic metals from the spoils respectively. The progress of developing phytoextraction, as a commercially viable technology for decontaminating metal-contaminated soils has been hindered by the lack of understanding of complex interactions in the rhizosphere and plant-based mechanisms, which allow for the translocation and accumulation of metals in plants. The interactions of metal tolerant/hyperaccumulating plants with their associated rhizospheric microbes, such as arbuscular mycorrhizal fungi (AMF), plant growth promoting rhizobacteria (PGPR), and metal-solubilizing bacteria (MSB), will be explored, in order to assess the current understanding of their respective interactions (i.e., metal-plant-soil microbes), which could facilitate the practice of phytoextraction.

2) How to Write and Publish Scientific Papers (Especially for Graduate Students)

The major objective of this presentation is to share my experience with final year project students, postgraduate students and junior scientists in the area of environmental sciences, about publishing scientific papers, starting from preparation of a manuscript, to submission to an appropriate international peer-reviewed journal, and revising the manuscript according to reviewers' and editor' s comments. Common errors made by final year project and postgraduate students will be discussed. The presentation will provide step-by-step guidance for writing their papers, in a concise scientific manner, and for the efficient and effective submission of papers for journal publication. The presentation could be divided into two major parts: Part I: Writing different parts of the paper, and Part II: Submission of papers for publication. In addition, some ethical issues will be highlighted.

BIOGRAPHY

Professor Ming-Hung Wong is Chair Professor of Biology, and Director of Croucher Institute for Environmental Sciences at Hong Kong Baptist University. His major research areas included ecotoxicological assessment and remediation of sites contaminated with toxic metals and persistent organic pollutants. He has been awarded a DSc Degree each from University of Durham and University of Strathclyde based on papers published 1977-1990, and 1991-2002, respectively.

Professor Wong served as the Regional Coordinator of Central and North-East Asia of the project "Regionally Based Assessment of Persistent Toxic Substances" ; and recently joined a panel of three to review "Emerging Chemicals Management Issues in

Developing Countries and Countries with Economy in Transition” , both sponsored by United Nations Environment Programme (UNEP) and Global Environment Facility (GEF). Currently, he is Editor-in-Chief of Environmental Geochemistry and Health (Springer), Editorial Board Member of other 5 international journals, Member of the “Advisory Committee on the Environment” , and Chairman of its “Waste Management Sub-Committee” in Hong Kong.

Professor Wong has published over 440 peer-reviewed papers and 24 book chapters, edited 22 books/special issues of scientific journals, and successfully filed 4 patents. Based on citations of papers published between 1999 and 2009, an internal document prepared by the Chinese Government ranked Professor Wong first among the top 20 most influential Chinese scientists in the world, in the area of environmental science and ecology.

ALL ARE WELCOME!