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## Editorial

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**Biographical notes:** Madhumita B. Ray is an Associate Professor of Chemical and Biochemical Engineering at the University of Western Ontario, Canada. Upon completion of a PhD in Environmental Engineering from the University of Minnesota, she has worked at the West Virginia University, USA, University of Groningen, the Netherlands and the National University of Singapore. She has over 12 years of research experience in pollution control technologies such as advanced oxidation processes, gas-solid separation and environmental modelling. She has written 2 book chapters and 50 publications in international journals and has over 45 conference presentations and chaired many sessions in international conferences and worked as a member of conference organising committees and worked as consultant and technical assessor for the Environmental Industries in Singapore.

Guohua Chen is an Associate Professor of the Department of Chemical Engineering at the Hong Kong University of Science and Technology. He has published over 100 journal papers and made more than 80 presentations at international conferences, industrial forum or universities. He is a member of Editorial Board of *Chinese Journal of Chemical Engineering*, *Modern Chemical Engineering*, *International Journal of Food Engineering*, *International Journal of Environment and Waste Management*. He is an Associate Editor of *Drying Technology Journal*, an Editor of *Separation and Purification Technology*. He is a Member of International Advisory Committee, the 8th World Congress of Chemical Engineering.

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With the increasing world-wide demand on natural resources, existing technologies are not, in the longer term, adequate to protect the environment and sustainable development. Advanced and cost effective technologies are therefore always needed. The World Bank estimates that between 2000 and 2010, US\$600–800 billion would be spent on environmental technologies such as sorption, membrane, advanced biological, chemical and electrical advanced oxidation technologies. In this decade, globally about 1.5 billion/year would be spent only on advanced oxidation technologies with a greater emphasis on solar-based photocatalytic technologies. In this Special Issue on advanced

technologies for environmental remediation and management, advanced oxidation processes (AOPs) and adsorption are the two main topics covered. In addition, innovations in other traditional technologies such as biodegradation and catalytic wet air oxidation are also presented. A paper on river water quality monitoring using data mining approach by means of fuzzy inference system is also presented.

The importance of adsorption in controlling pollution of diverse nature can never be overemphasised. However, process innovation seems an impossible task for adsorption as it is considered as an established operation. We are happy to present a paper by a world renowned expert in this area. The use of inexpensive and locally available adsorbents has been a subject of study for the past decades and will be a study topic in the future. We have two papers in this regard.

In the last two decades, AOPs are increasingly employed to remove pollutants from diverse sources. A cursory glance at the existing research reveals the importance of this field by the voluminous literature on radical and photochemistry, photocatalysis and photoreactors. In this Special Issue, we have four papers in this important area, including a paper on the effects of UV photolysis and photocatalysis as pretreatment methods for a bioprocess.

We would like to thank the authors and the reviewers of this Special Issue. Their contributions make this Special Issue now available. We would also like to thank Dr. Arun Mujumdar, Professor of National University of Singapore, who recommended us as Guest-Editors and provided many useful advice on journal editing.