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## **Preface**

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**Biographical notes:** Mayra Olga Bataller Venta received her PhD in Technical Sciences (Chemical Engineer) from J.A Echeverría Polytechnic Institute in Havana, in 2000. Currently, she is Full Researcher, Biotechnologist (II Level) and Head of Environmental Division, which belongs to National Centre for Scientific Research (NCSR), where she has been working since 1983. She is member of Scientific Council of NCSR. Her present research interests are in the development and implementation of treatment technologies with ozone for water pharmaceutical and food industries, swimming pool and wastewaters. She has published articles related to ozone water and wastewater treatment in journals and international conference proceedings.

María del Carmen Espinosa Lloréns received a Master in Water Sciences, in 1996. She received her PhD in Technical Sciences (Chemical Engineer) at Las Villas Central University, in 1999. Currently, she is Auxiliary Researcher, at the Department for Environmental Pollution Studies of the Environmental Division that belongs to National Centre for Scientific Research, where she has worked since 1977. Her present research interests are in the area of analysis and development of treatment technologies for wastewaters and solid wastes; quality management and accreditation of laboratories. Also, she works as specialist with the Cuban National Accreditation Body. She has published articles related to these areas in journals and international conference proceedings.

Lidia Asela Fernández García received her PhD degree in Technical Sciences (Chemical Engineer) from J.A Echeverría Polytechnic Institute in Havana, in 2000. Currently, she is Full Researcher, Biotechnologist (I Level) of the Environmental Division that belongs to National Centre for Scientific

Research, where she has worked since 1982. Her present research interests are in the field of development of treatment technologies for water and wastewaters with ozone. She has published articles related to the use of ozone in sugar industry, drinking water systems and wastewaters treatment from different sources in journals and international conference proceedings. She is member of General Scientific Council of National Centre for Scientific Research.

Yung-Tse Hung received his PhD degree in Environmental Engineering from University of Texas at Austin. His BSCE and MSCE degrees are from National Cheng Kung University, Taiwan. He has been Professor of Civil and Environmental Engineering at Cleveland State University, Cleveland, Ohio, USA, since 1981. He has taught at 16 universities in eight countries. His research interests are biological waste treatment, industrial waste and hazardous waste treatment. He is Editor of *International Journal of Environment and Waste Management* (IJEWM) and *International Journal of Environmental Engineering* (IJEE), and Editor-in-Chief of *International Journal of Environmental Engineering Science* (IJEES).

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Water quality is a growing concern throughout the developing world. Drinking water sources are under increasing threat from contamination, with far-reaching consequences for the health of children and for the economic and social development of communities and nations.

Deteriorating water quality also threatens the Millennium Goals water target of halving the proportion of people without sustainable access to safe water. While the world is currently on track to meet the target in terms of numbers of sources constructed, it may not be on track if the quality of water in new sources is fully taken into account.

The chemical contamination of water supplies – both naturally occurring and from pollution – is a very serious problem. Arsenic and fluoride alone threaten the health of hundreds of millions of people. But more serious still is the microbiological contamination of drinking water supplies, especially from human faeces. Faecal contamination of drinking water is a major contributor to diarrhoeal disease, which kills millions of children every year. As populations, pollution and environmental degradation increase, so will the chemical and microbiological contamination of water supplies.

Treatment and valorisation of waste and wastewater for the production of energy and useful materials is a valuable contribution nowadays, to those goals, because waste and wastewater also constitute a threat of contamination for the aquifers and the courses of superficial waters. The application of different alternatives of physical-chemical and biological treatments cooperates to solve this serious problem, including the consideration of reuse.

At the same time, the assessment of the treatment by-products is important, either as source of renewable energy (biogas) or as a source of organic matter for the agriculture (sludge that are produced in the biological treatment systems).

Protecting water, a vital resource necessary for our daily lives, is a never-ending task for individuals, communities, countries, and as a global community of concerned citizens, specially in the 2005–2015 International Decade for Action ‘Water for Life’.

*Special Issue:* This special issue is intended to report new research findings in waste management: characterisation, treatment, by-products valorisation and the related areas.