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Preface

Special issue on Challenges in Environmental Science and Engineering (CESE-2014) 12–16 October 2014, Johor Bahru, Malaysia

This special issue carries selected peer-reviewed manuscripts based on presentations made at CESE-2014, the Seventh Annual International Conference on "Challenges in Environmental Science & Engineering"-CESE Conference Series, which was held from the 12th to the 16th of October 2014 at Johor Bahru, Malaysia.

This special issue has been dedicated to the following themes: *membrane technology, adsorption, chemical treatment, biological treatment, oxidation processes*, and a general theme covering other relevant topics. The *membrane technology* theme covers research on membrane treatment for: (i) the removal of humic acid using nanofiltration, (ii) Kraft lignin recovery through emulsion liquid membrane process, (iii) comparison of hollow fiber module design in membrane distillation, (iv) cadmium using micellar-enhanced ultrafiltration and activated carbon fiber hybrid processes, (v) fabrication of forward osmosis and polysulfone–ZnO membrane, and (vi) boron removal using polyol compounds in reverse osmosis process. The *adsorption* theme includes the development of new adsorbents such as activated carbon prepared from luffa sponge and microwave-irradiated coconut shell, enhanced removal of phosphate by hydrocalumite, photocatalyst-coated beads, superparamagnetic iron oxide nanoparticles, groundnut shell-based activated carbon, and heteropolyacid salt–lanthanum oxide composites to remove various organic and inorganic contaminants. The *chemical treatment* theme consists of the removal of trace organic compounds by coagulation and electrocoagulation and the development of a novel coagulant aid (entermorpha). The *biological treatment* theme mainly involves in the removal of nutrients using a trickling biosand-modified media filter, biological treatment of reverse osmosis concentrate, partial nitrification process by seeding aerobic and anaerobic granular sludge, two-stage mesophilic anaerobic digestion from waste activated sludge, bio-ozonation system for pulp wastewater treatment, and oscillatory flow bioreactor for methane and biogas production. The *oxidation processes* theme covers photocatalytic degradation of cationic dye, $Fe_2(MoO_4)_3$ as a novel heterogeneous catalyst to activate persulfate for Rhodamine B degradation and photooxidation using photocatalyst-coated beads. The *general* theme includes inland desalination of brackish water using capacitive deionization technology, recovery of sodium hydroxide from industrial wastewater by electrodialysis process, phytoattenuation of lead-contaminated agricultural land, bio-monitoring of occupationally exposed individuals to pesticides and greenhouse gas emissions in the process of bio-compost production.

The Guest Editors are thankful to the Editor-in-Chief of *Desalination and Water Treatment*, Professor Miriam Balaban for providing an opportunity to publish this special issue. They are also thankful to Ms Suzanne Trauffer and staff members at the *Desalination and Water Treatment* editorial office for their dedication in providing great assistance from the beginning to the end of review and publication processes. Our sincere appreciation to all the reviewers for their rigorous review of manuscripts submitted for this special issue. We look forward to another special issue in *Desalination and Water Treatment* for CESE-2015 which will be held from the 28th September to the 2nd October 2015 in Sydney, Australia.

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