



Challenges in Environmental Science and Engineering CESE-2013

29 October-2 November 2013, EXCO, Daegu, Korea

Editorial

This special issue carries selected peer-reviewed manuscripts based on presentations made at CESE-2013, the sixth Annual International Conference on “Challenges in Environmental Science & Engineering”—CESE Conference Series, which was held from the 29th of October to the 2nd of November 2013 at the EXCO in Daegu, Korea.

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 the removal of dye and trace organic compounds using nanofiltration and reverse osmosis as well as membrane fouling, different pretreatment for wastewater reuse, life cycle cost analysis of ceramic membrane, forward osmosis—the effect of multiple cations in the feed solution and hollow fibre forward osmosis, membrane distillation—theoretical analysis and operating parameters and pressure-assisted osmosis for shale gas wastewater.

The *Adsorption* theme includes the development of new adsorbent such as hybrid multi-walled carbon nanotube-alginate-polysulphone beads, activated carbon supported iron–nickel bimetallic nanoparticles, sludge with additive scrap iron based activated carbons, granular laterite and Zn–Al layered double hydroxide granules to remove trace organic contaminants, phosphate and reactive black 5 from the wastewater.

The *Chemical Treatment* theme consists of the removal of trace organic compounds by coagulation, the development of a novel coagulant, evaluation of the effect of hydraulic impeller in flocculation basin using computational fluid dynamic and phosphorus removal by electro-coagulation.

The *Biological Treatment* theme mainly focuses on the removal of nutrients using anaerobic–anoxic–aerobic (A²O) bioreactor and a novel extra-loop fluidized bed bioreactor, membrane bioreactor with anaerobic baffled reactor for high-rise building wastewater reuse, pharmaceutical compound removal in a sewage treatment process and CO₂ emissions in four full-scale wastewater treatment plants.

The *Oxidation Processes* theme covers electro-catalytic oxidation of ammonia, chlorinated organic compound degradation, organics and micro-pollutants removal using electrochemical performance, Fe-doped self-organized TiO₂ and an ozone reactor.

The *General* theme includes waterworks automated meter reading systems and analysis of household water consumption, water quality in piping system of bank filtrate, leaching of heavy metals in Kaohsiung Harbor sediment, volatile organic and heavy metal compounds in road run-offs, combined ecological sanitation with separated urine/faeces and treatment wetlands, satellite communication system for real-time river monitoring, water supply risk assessment model for water distribution network, wireless environment network simulation, corrosion indices in Korean river basins and urban water resource sustainable strategy of Songhua riverside.

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 her 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. Their sincere appreciation is extended to all the reviewers for their rigorous review of manuscripts submitted for the special issue. They look forward to another special issue in *Desalination and Water Treatment* for CESE-2014 which will be held from the 12th to the 16th October 2014 in Johor Bahru, Malaysia.

Guest Editors

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