



Special Issue on the Challenges in Environmental Science & Engineering, CESE-2009 14–17 July, 2009—Jupiters Hotel, Townsville, Queensland, Australia

Editorial

The second conference on the “Challenges in Environmental Science & Engineering” series CESE-2009 was held at Jupiters Hotel, Townsville, Australia from the 14th to the 17th of July 2009. The conference brought together internationally renowned engineers, scientists and researchers in the fields such as sustainability, water reuse, renewable energy, public health and biotechnology to discuss the environmental challenges the world is facing today and into the future. The conference had parallel presentation sessions for two full days that dealt with coastal processes and the Great Barrier Reef, catchment management, water quality, membranes, wastewater treatment, storm water management, reuse, sustainability and bioprocess technology. The guest editors of this special issue are thankful to the Chief Editor of *Desalination and Water Treatment*, Professor Miriam Balaban for providing an opportunity to publish selected papers that were presented at CESE-2009 after peer review.

This special issue covers the challenges that are faced by the real world in delivering potable water to communities all over the world in sustainable ways. From the papers that appear in this issue, it can be seen very clearly that coordinated attempts are required from many facets of scientific knowledge and engineering skills to solve those challenges faced in the following areas:

- maintaining the quality of fresh water sources both surface and ground water
- utilizing sea water in appropriate ways
- recovering resources from brines and industrial effluents
- treating the water through media and membrane filters
- maintaining the quality of water in the distribution systems as well as at consumers’ taps
- developing water-sensitive urban designs to reduce the pollutant loads that enter fresh water sources
- treating and reusing domestic wastewater and storm water.

Thus, we have included 20 relevant papers that deal with desalination, applications of micro-, ultra-, and nano-filtration membranes in water, wastewater and acid mine drainage, evaluation of fouling of membranes under different circumstances, forward osmosis, recovery of oil and reuse of wastewater through the application of membranes, granular filtration, water quality in distribution systems, water sensitive urban design and ground water quality. We are confident that the papers will contribute significantly to understand the problems involved and to find ways in delivering water everywhere in sustainable ways.

V. Jegatheesan and L. Shu
(Special Issue Guest Editors)