
Preface

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Biographical notes: V.K. Garg is working as Associate Professor in the Department of Environmental Science and Engineering, Guru Jambheshwar University of Science and Technology, Hisar, INDIA. His teaching and research include solid waste management, drinking water pollution with special reference to fluoride and nitrate, wastewater treatment using adsorption technology, ferti-irrigation and radio-ecology. The research carried out to date has credited him with 165 publications including one book, 12 chapters in the books/proceedings, 55 International and 30 National original and reviewed papers and 30 research communications in conferences/ symposia. Dr Garg continues to serve as peer reviewer for many international journals. He was elected Fellow of Biotech Research Society of India (BRSI) for 2011.

Suman Mor is currently working as Assistant Professor in the Department of Environmental and Vocational Studies, Panjab University, Chandigarh, India. She obtained a PhD from the Indian Institute of Technology, Delhi, India in Energy and Environmental Engineering with specialisation in 'Solid Waste Management'. She has contributed to more than 15 peer reviewed international articles and also wrote a book in the field of 'Environmental Science'. Dr. Mor is severing as a referee to various international/SCI journals.

Special Issue: This issue is 'Part Five' of the special issue on Solid Waste Management which contains 11 excellent research papers dealing with different aspects of solid waste management.

In first paper, *Champagne and Westman* have reported the composting of pulp and paper mill biosolids and its application for plant growth. The results indicated that the biosolids were well suited as an organic additive which could improve the growth of Jack pine seedlings.

Cement kiln dust is a fine powdery residue from the cement manufacturing process. While much of this dust is recirculated into the manufacturing process, still there remains a substantial portion which cannot be recirculated and supposed to be managed by other

methods. But the chemical composition and material properties of this dust can differ from source to source which are important for its management. *Pierce and Williams* have proposed the CaO-LOI dual-letter classification scheme that identifies materials with high (H) or low (L) lime contents in the first letter and high (H) or low (L) loss on ignition in the second letter. This classification system can be used to select cement kiln dusts for research and in practice, which could lead to the development of recommended guidelines for engineering applications with CKD.

Fly ash, waste product of thermal power stations has great potential for use in agriculture, because it contains almost all macro and micro nutrients. *Katihar et al* have reported the impact of fly ash on growth and yield of three crop plants (*Beta vulgaris*, *Vigna radiata* and *Capsicum annum*). The results showed that fly ash application increased the number of leaves, plant height, biomass and yield of the crop plants and recorded maximum in 25% fly ash amended soil treatment. Application of more than 25% fly ash resulted in growth and yield reduction of plants.

Hyperspectral imaging, traditionally used for earth remote sensing applications utilising aerial or satellite image data. But *Serranti and Bonifazi* have reported the pollution level detection in dump clay liners by hyperspectral imaging.

The Chemical Oxygen Demand (COD) assay determines the amount of oxygen needed to chemically oxidise organic compounds. But COD determinations generate highly disruptive waste streams with high levels of chromium, mercury and silver. *Cristina Delerue-Matos et al* have suggested the simple chemical procedures to remove toxic metals from COD wastewaters. Chromium (VI) is reduced to chromium (III) and total chromium is precipitated with sodium hydroxide. Silver is precipitated with chloride and mercury with iodide. Enhanced reduction of mercury levels is achieved by means of its adsorption to activated carbon. Final concentrations of Cr, Ag and Hg in treated wastewaters were reduced significantly. *Bansal et al* have reported the use of chemically treated timber industry waste (sawdust) for the removal of hexavalent chromium from aqueous medium. They reported that chromium removal was 83.5% at pH 2 with 20 g L⁻¹ adsorbent dose after 120 min of contact time.

Mbuligwe has reported the strategies and practices that enabled *Dar es Salaam City, Tanzania* to reverse its once deplorable solid waste management (SWM) situation, starting with a framework for SWM analysis. This paper also highlights the background on the era prior to the reported SWM improvement and evidence of the improvement, including service availability. Additionally, the paper points out the agents of change in the observed improvement, including privatisation of the service, and changes in local government leadership profile.

Liamsanguan and Gheewala have reported the use of Life Cycle Assessment (LCA) to evaluate the environmental performance of the existing municipal solid waste management system in *Phuket city (Thailand)* and compared with different possible alternative integrated waste management systems (IWMSs).

Incessant oil spill incidents in the Niger Delta area of Nigeria continue to call for more scientific and improved decision-making, particularly as it affects compensation payable to the farmer(s) or community(ies) whose farms or farmlands have been rendered unproductive. *Ogugua et al* have proposed a bacterial-based mathematical framework as a part of decision support system for evaluating crude oil spill impact on agricultural soil. The entire framework is based on the adaptive management approach that minimises uncertainties in decision-making processes. *Louis et al* have proposed a risk management framework which can be used as an approach to the sequential allocation of competing

sanitation infrastructure investments. This approach was shown to be particularly appropriate to developing countries where there are chronic deficiencies in multiple sanitation services and where improvements must be made to the services in concert or the deficiencies in one neglected service will eventually compromise the other services which have been improved.

Simulation-optimisation (SO) techniques can be adapted to a wide variety of problems containing stochastic system components. *Yeomans* has proposed SO as an MGA mechanism for generating numerous landfill and MSW expansion options that would not normally have been considered by policy-makers.

The Guest editors are thankful to all the authors for contributing their valuable research for this special issue on "Solid Waste Management". We also take the opportunity to record our appreciation for all the reviewers for their suggestions and support which helped us to make the decisions on the submitted manuscripts.

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