
Preface

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Biographical notes: V.K. Garg is working as Reader 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 herbicide resistance. The research carried out till date has credited him with more than 160 publications including books (1), chapters in the books/proceedings (15), original and reviewed papers (international 60, national 30), research communications in conferences/symposia (30). He continues to serve as peer-reviewer for several international journals.

Suman Mor is currently working as Lecturer in the Department of Environmental and Vocational Studies, Panjab University, Chandigarh, India. She obtained a PhD from Indian Institute of Technology, Delhi, India in Energy and Environmental Engineering with specialisation in 'Solid Waste Management'. She has contributed to more than 11 peer reviewed international papers and also wrote a book in the field of 'Environmental Science'. She is severing as a referee to various international/SCI journals. She also won several national and international scholarships.

This issue is 'Part 3' of the special issue on 'Solid Waste Management' which reports the research on urban waste, sewage sludge, e-waste and construction waste. We are happy to present the 12 excellent papers in this special issue.

Besides population growth, two main factors will impact the earth's environment in the upcoming decades: economic growth especially for countries with a large population, like India and China; and greater economic disparity between rural and urban areas, driving the rural population into cities. While the first factor leads to a greater demand for resources, such as fossil fuels, metals, water and food, the second factor leads to a more costly waste management burden on large cities. The first seven papers deal with urban wastes and sewage sludge management. In first paper, Adhikari et al. have

reported the challenges and opportunities associated with Urban food waste generation. They have suggested that land filling is not affordable for many large cities of Asia, Africa and South America. The onsite recycling of urban food waste is a more sustainable solution, but can only be justified economically if properly organised, community supported and recognised for its environmental benefits. In second paper, Maldonado has reported the urban solid waste related issues and challenges in Mexico. He has emphasised that research and technological development for the recycling of the urban solid waste, along with environmental education programs may contribute to reverse the enormous environmental deterioration in Mexico due to urban solid waste. Valdez-Vazquez et al. have reported the production of hydrogen as fuel from organic urban solid waste by using anaerobic fermentation technology. They have also reported that the hydrogen produced from the urban solid waste of Mexico could supply 20% of the future fuel requirements for fuel cells vehicles in the Metropolitan Area of Mexico City. Gupta and Garg have reported that, at most of the religious places in India, a huge tonnage of solid waste is generated due to worshipping. Due to poor/inadequate infrastructure and management practices at most of such places, solid waste is either burnt openly or sent to the open dump sites, further aggravating the pollution problems. They have suggested that vermicomposting can be an efficient technology for environmentally safe disposal of the temple solid wastes and recycling of the nutrients. Landfills have been widely used for municipal solid waste disposal all over the world. Mohan and Gandhimathi have reported the characterisation of the solid waste and its effects of the leachate from the major dumping site in Perungudi, Chennai City, Tamilnadu, India. The results have indicated that local aquifers in the study area are threatened by dumping site leachate. Chiemchaisri et al. have reported the application of bioreactor landfill methodology with leachate recirculation and storage operation for leachate management. Singh and Agarwal assessed the usefulness of sewage sludge amendment at different ratios for lady's finger (*Ablemusculus esculentus* L.) crop. The study suggests that sewage sludge amendment ratio below 20% could be an alternative option of fertilisers for good yield of lady's finger and also a useful management option for this solid waste. Higher amendment ratio though increased the yield but may be a cause of concern for human health due to accumulation of Ni, Pb and Cd, in the lady's finger, above the safe limits of human consumption.

E-waste is one of the fastest growing waste streams due to rapid economic growth and technology advancement. Currently, there are no appropriate e-waste management regulations. Eighth, ninth and tenth papers deal with e-waste issues. Kunacheva et al. investigated the current e-waste management situation in Bangkok, Thailand. The study reveals that approximately 90,000 tonnes of e-waste were generated from households in 2003. E-waste from industries is not significant in the overall e-waste generation. It has also revealed that 64% users have knowledge on the hazard of e-waste and only 40% users are willing to pay for the e-waste treatment. Herat has reported an overview of e-waste management in Australia. Ahluwalia and Nema from India have reported a goal programming approach to achieve satisfaction of multiple objectives of economy, perceived risk and health and environmental risks during the entire life cycle of waste computers. A case study of Chennai (India) has been presented to demonstrate the usefulness of the proposed approach in resolving issues related to cost, perceived risk and health and environmental risk. It was observed from the model results that marginal input of cost reduced the present risk to the workers and environment substantially. The model can assist the decision makers in selecting

optimum configuration of waste management facilities and transportation routes, optimise waste allocation to the waste management facilities and, to arrive at the optimum reuse time span of a particular.

The environmental impacts of construction activity have gained increasing importance in the last few years and have become a key challenge to construction industry. In 11th paper, Couto and Couto have discussed the strategies and actions that should be implemented in Portugal to improve waste construction management by impelling the deconstruction process. Whereas in 12th paper, Zygouras et al. have reported the current situation on construction and demolition waste management in Greece and focuses on the results from the operation of a pilot processing plant, which operated in 2003 for a net total period of approximately five months.

Finally, we like to thank all the contributors for sending their excellent manuscripts for consideration in the special issue, as well as all the reviewers who did an excellent job for improving the manuscripts. We are also grateful to Ravindra Khaiwal, Bhupinder Singh Mehta, Renuka Gupta, Anoop Yadav and Monika Jain for their extraordinary help to manage this issue.