
Preface

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Biographical notes: Sunil Kumar is a Scientist in Kolkata Zonal Centre of NEERI (CSIR), India. For the last ten years, he has been working in the field of MSW management and authored numerous scientific papers in reputed international and national journals.

Rapid urbanisation, industrial growth, competitive measures, and the exploitation of the environment by human beings lead to increasing pollution of air, land and water.

This special issue on 'Science, Engineering and Management in Solid Waste and Wastewater' aims to aid the understanding of the extent of environmental deterioration and to examine the best practices for reducing and managing waste generation through scientific and engineering technologies. The special issue is intended to cover a wide variety of waste management technologies for solid wastes such as aquatic waste, fly ash, distillery effluents, dyes etc., recycling of sludge, determination of toxicity levels from landfill leachates by employing comet assay, estimation of methane emission from open dumps, waste collection management, solid waste recycling, management of tannery waste, etc. The studies include the research work carried out in various parts of the world including the USA, the UK, Mauritius, France, Thailand and India.

The study conducted by Ankaram et al. provides an alternative method for management of the aquatic weed water hyacinth by vermicomposting technology. Shrestha et al. emphasised a sustainable method for better treatment of coloured industrial dyes by photocatalytic degradation with the help of commercial charcoal. Singh et al. evaluated the recycling of basic oxygen furnace sludge which is a product generated in steel making industries and concluded that recycled materials such as iron ore and limestone can be reused as raw materials. Kifle Bisrat presented vital data on waste generation and recommendations for proper waste management in Ethiopia. An experiment performed by Na roi-et et al. led to the evaluation of toxicity levels in landfill leachates by employing comet assay of Golden Pothos.

Panda et al. conducted an experiment on ferrochrome alloy slag to investigate the prevention of the leaching of chromium compounds from slag by immobilisation techniques. A study put forward by Kumari et al. showed that distillery effluent and fly ash can be used as a potential biofertiliser. Karthikeyan et al. focused on the qualities of methane emissions from open dumps of Chennai. The collection and management of industrial waste by improving and applying radio frequency identification technology

(RFID) was presented by Nielsen et al. In 'Human excreta a waste', Maurya proposed an eco-sanitation method for management of human excreta thus preventing pollution which will open an avenue for resource recovery and water conservation.

In 'Actively aerated methanobiofilters to control methane emissions from landfills', Haththotuwa et al. analysed and recommended the use of aerated biofilters to control methane emissions from sanitary landfills. A paper by Bohra et al. discussed the comparison between various management practices of municipal solid waste and its impact on global warming. Prasad highlighted a study on e-waste, its consequences and practices for ICT waste management. An experiment conducted by Ramprasad and Gopalakrishnan revealed various methods for removal of pollutants from landfill leachate. Surroop and Mauthoor in their paper on 'Assessment of recycling potential of municipal solid waste in Mauritius' compared and assessed two recycling outlines for solid waste. Adhikari et al. put forth the strategy for composting organic waste by applying various types of composters and comparing its efficiency for better yield of compost. The paper by Pattnaik and Reddy discussed the impact of applications of vermicompost and compost on microbial characterisation. Visvanathan and Kashyap proposed the policy frameworks for 3R technology, i.e. reduce, reuse and recycle, of waste. Other authors highlighted different aspects of solid waste and wastewater.

This issue caters for the needs of practising engineers, scientists and research students who are involved in the domain of solid waste and wastewater management. The results reported in many papers of this issue are applied as practical workout in managing environmental risk and minimising various land, water and air pollution problems by proper management of solid and wastewater.

This special issue is intended to present new research findings carried out by various researchers around the globe restricted to the recent and practically based techniques which are feasible to apply. I am especially grateful to all the contributors and reviewers for their help in bringing this special issue to fruition.