
Preface

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Biographical notes: Ackmez Mudhoo obtained his BEng. (Hons.) Chemical and Environmental Engineering in 2004 and earned an MPhil Degree by research in Chemical Engineering from the University of Mauritius in 2011. His research interests encompass the bioremediation of solid wastes and wastewaters by composting and anaerobic digestion. He has 62 international journal publications and four edited books to his credit. He serves as Scientific Reviewer for Waste Management and Journal of Hazardous Materials. He is Handling Editor for *International Journal of Environment and Waste Management* and is presently Lecturer in the Department of Chemical and Environmental Engineering, University of Mauritius.

Vinod Kumar Garg received his PhD in Chemistry from CCS Haryana Agricultural University, Hisar, India in 1992. He is presently an Associate Professor and a Reader (Department of Environmental Science and Engineering, Guru Jambheshwar University of Science and Technology, Hisar, India). His research interests include solid waste management, drinking water pollution and wastewater treatment using adsorption technology. He has over 150 publications, 56 MS and four completed PhD supervisions to his credit.

He continues to serve as peer reviewer for *Bioresource Technology*, *Water Research*, *Journal of Hazardous Materials*, *Journal of Colloid and Interface Science* and *Separation and Purification*.

Keshav C. Das is Professor in the Department of Biological and Agricultural Engineering, University of Georgia, Athens, USA. He obtained his BS in Mechanical Engineering (Anna University, Chennai, India) in 1989, an MS in Biological and Agricultural Engineering (The University of Georgia, Athens) in 1991 and a PhD in Biological and Agricultural Engineering from The Ohio State University in 1995. With research interests in biomass thermochemical processing and biomass biological conversion, He has over 140 conferences papers, over 80 peer-reviewed journal articles and several patent disclosures. He has so far supervised/co-supervised 10 MS and three PhD students.

Romeela Mohee is presently Dean of Faculty of Engineering and Professor of Environmental Engineering in the Department of Chemical and Environmental Engineering at the University of Mauritius, Mauritius. She obtained her PhD at the University of Mauritius in 1998 and her research is focused on waste containment, solid waste management, beneficial reuse of waste materials, heat and mass transfer modelling. She has over 75 international publications, including four books, conference papers, consultancy reports, over five MS and 12 ongoing PhD supervisions to her credit.

Research on wastes treatment: Progress throughout the world undeniably relies on many industrial, agricultural and manufacturing processes. These processes are however also the main generators of many types of wastes, process biological residues and wastewaters that are normally discharged as undesired materials to the environment. In this respect, the presentation and discussion of original research of the treatment processes of solid wastes, residual biosolids and process wastewaters from the manufacturing and process industries are more than ever justified in order to identify, devise and implement proactive methodologies which foster sustainable development – an emerging environmental concept requiring global institutional, regulatory and most importantly scientific research community involvements.

Rationale: In this line of thought, the present Special Issue ‘*Solid Wastes and Wastewater Treatment Processes*’ is intended to report new research findings from researchers who have been working on advanced and effective techniques to treat specific type of solid wastes and wastewaters which fall into their respective field of technical specialisation. Hence, the key aim of this special issue is to present a mix of the research work that shall hopefully serve to better understand and keep pace with the issues related to and the technical progress achieved in solid wastes and wastewater treatment processes.

Research papers in special issue: A total of 14 manuscripts were received for this special issue. After a blind peer review process of one month, 13 manuscripts were accepted for publication based on the reviewers’ recommendations. This special issue comprises seven papers presenting results of studies on solid wastes treatment and six other research papers presenting research on wastewater treatment processes.

Solid wastes treatment: Anaerobic digestion of Organic Fraction of Municipal Solid Waste (OFMSW) in two-phase system' from Tran et al. determines the operational characteristics and efficiency of a two-phase system composed of a fed-batch hydrolysis reactor and a methanogenic Upflow Anaerobic Sludge Blanket (UASB) reactor. This study was carried out in view to recover energy as a resource from the anaerobic digestion of OFMSW prior to aerobic composting as post-treatment. A second paper from Tran et al. and titled 'Effect of temperature on composting residual Organic Fraction of Municipal Solid Waste (OFMSW) after anaerobic digestion' discusses the effects of temperature on biodegradation, microbial population density and composition and pathogen levels in composting residual OFMSW after anaerobic digestion. In their research paper 'Sugar industry press mud as alternate organic fertiliser source', Khan et al. present the results of the investigations of the impact from the use of press mud on wheat productivity and soil properties. In 'A study on Air Filled Porosity evolution in sludge composting', Ruggieri et al. present a novel strategy that permits to measure Air Filled Porosity (AFP) in situ during the composting process since AFP is a key parameter in the composting process for conditioning oxygen availability and controlling heat accumulation. The effects of leachate recirculation strategies when applied to a batch operated one-stage solid-phase digestion system at laboratory-scale are presented by Kusch et al. in 'Effect of various leachate recirculation strategies on batch anaerobic digestion of solid substrates'. In 'Evaluation of FTIR spectroscopy as a maturity index for herbicide-contaminated composts', Jumnoodoo and Mohee analyse the use of Fourier Transform Infrared (FTIR) spectroscopy as a maturity index for herbicide-contaminated green wastes composts. In 'Anaerobic Digestion technologies for the treatment of Municipal Solid Waste', Rapport et al. briefly review the anaerobic treatment technologies for municipal solid wastes namely the Waasa, Dranco, Valorga, Kompogas, BTA, SUBBOR, Biopercolat, Biocel, SEBAC, APS Digester, and BioConverter systems.

Wastewater treatment: Kumar et al. have contributed 'Prediction of flux decline during membrane filtration of leather plant effluent' wherein they propose and assess a membrane based scheme for treating leather plant effluent. In the paper 'Performance studies on constructed wetland for treatment of crocodile pond wastewater', Sudha and Vasudevan focus on the treatment of wastewater generated from the rearing of saltwater crocodiles using a vertical flow constructed wetland treatment system planted with *Arundo donax*. Walia et al. present and compare the effluents' treatment performances of a bench scale UASB reactor and four UASB based sewage treatment plants of variable capacities when operated in batch and continuous aeration modes in their paper 'Evaluation of polishing of the effluent from UASB reactor by diffusers'. Adishkumar and Kanmani investigate the application of advanced oxidation processes to treat phenol, *o*-cresol, *m*-cresol and *p*-cresol wastewaters in 'Degradation of phenolic wastewaters by solar/TiO₂ and solar/TiO₂/H₂O₂ processes'. 'Performance of Upflow Anaerobic Sludge Blanket (UASB) reactor treating simulated wastewaters containing 1,1,2-Trichloroethane and 1,1,2,2-Tetrachloroethane' from Basu and Gupta examines the performance of a UASB reactor in treating synthetic wastewaters containing 1,1,2-Trichloroethane and 1,1,2,2-Tetrachloroethane. Lastly, in 'Decolourisation of turquoise HGN by anaerobic bacterial isolates from rumen enrichments', Morlett Chávez and Balagurusamy isolate anaerobic bacteria capable of decolorising Turquoise HGN dye by the roll tube technique

from enrichments inoculated with rumen fluid and test for their efficiency in decolorising Turquoise HGN under different nutritional and environmental conditions.

Guest Editors' note: We would like to thank all the authors who submitted papers for this Special Issue of the *International Journal of Environment and Waste Management* and the academic and professional reviewers for their invaluable contributions to the review process. All of the papers included in this publication received at least two peer reviews and one complete editorial and technical review of the author revised manuscripts before final acceptance for publication. The Guest Editors would like to extend their most cordial thanks and appreciation to all the reviewers and the staff at the *International Journal of Environment and Waste Management* for the time and effort spent in ensuring the production of a quality publication. We hope that you enjoy reading this selection of papers on solid wastes and wastewater treatment processes represented in this issue. Finally, we would like to thank Dr. M.A. Dorgham and Professor Yung-Tse Hung, Editor-in-Chief and Editor of the *International Journal of Environment and Waste Management*, respectively, for the opportunity given to build up, compile and finally publish this Special Issue.