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## **Preface**

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**Biographical notes:** V.K. Garg received his PhD in Chemistry from CCS Haryana Agricultural University, Hisar, India in 1992. He is now working as Reader in the Department of Environmental Science and Engineering, Guru Jambheshwar University of Science and Technology, Hisar, India. His area of research includes solid waste management, drinking water pollution with special reference to fluoride and nitrate, wastewater treatment using adsorption technology, ferti-irrigation and herbicide resistance. He has more than 125 publications to his credit. He continues to serve as peer reviewer for several international journals.

Suman Mor is currently working as a Lecturer/Assistant Professor in the Centre for Environment and Vocational Studies, Panjab University, Chandigarh, India. During early stages of her career, she established and successfully led the 'Department of Energy and Environmental Sciences' at CDL University, Sirsa, India. She has contributed to more than ten peer reviewed international papers and also wrote a book. She is a referee for various international journals. She has also won several national and international scholarships. She received her PhD from IIT Delhi, India, in Energy and Environmental Engineering with specialisation in solid waste management.

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This special issue is intended to report new research findings from researchers who have been working on advanced and effective techniques for solid waste management. The term solid wastes refers to non-gaseous and non-liquid unwanted materials disposed of by man, which can neither flow into streams nor immediately escape into the atmosphere. It includes municipal garbage, industrial and commercial wastes, sewage sludge, agricultural and animal husbandry wastes, demolition and construction wastes and mining wastes. The key problems posed by solid wastes include: contamination of soils and surface and sub-surface water by pollutants present in the solid wastes through leaching; contamination of the environment by heavy metals and chemicals; colour imparted to the water bodies or soils, and odour problems which invite public attention.

“How will solid waste be managed?” is an important question demanding attention due to the rapid growth in solid waste generation. A number of solid waste disposal strategies have been adopted around the world. The major disposal technologies include: Open dumping; Hog feeding; Land filling; Land spreading; Composting; Lime stabilisation; Thermal drying (including pelletisation) and Incineration. Each solution has benefits and limitations. No one solution has universal applicability. In such a scenario there is an obvious need to reuse and recycle the solid wastes. Solid wastes management is a major issue faced by all municipalities due to shortage of land, rigorous legislation on waste handling and disposal. European legislation recommends the development of local integrated management plans, which give priority to prevention, waste reduction and recovery, and allow using landfill only for the disposal of refuse that cannot be recovered.

Nowadays some special wastes are beginning to pose ever increasing problems. The use of electronic devices has proliferated in recent decades, and proportionately, the quantity of such devices, viz., PCs, mobile telephones and entertainment electronics that are disposed of, is growing rapidly throughout the world. The plastics used to make these devices can be destructive to the disposal mechanism and may greatly increase air pollution. When inadequate temperature is used to incinerate this e-waste, highly poisonous gases such as dioxins and furans can be produced.

Key research issues and challenges with respect to solid waste management involve recognising and developing the innovative technologies which are ecologically and commercially sustainable. Therefore, the papers of this special issue on Solid Waste Management – Part One, will address research on solid waste management and related areas.