

The special issue on 'International Conference on Sustainable Solid Waste Treatments and Managements (SWTM-2019)'

Solid organic waste (SOW) treatment and disposal is a major global challenge for sustainable societies, where landfilling is still the dominant way of SOW disposal. On the other hand, the global concern on the complexity of waste and greenhouse gas emissions as well as global warming potential, the escalating loss of our biological resources as well as social aspects of contamination of lands and groundwater by, e.g., landfill leachates, demands alternative bioengineer technology that can reutilize these SOW as resources. Among the current available methods, bioprocesses such as anaerobic digestion and composting together have a considerable share of SOW recycling to produce bioenergy, biomass and other bio-products that can reduce the exhaustion of our precious natural resources. Yet the innovative bioengineered technologies to be developed logically should be effective and economically competitive with those production technologies using natural resources, because often the economic viability dictates the fate of the application of a particular technology and significantly influences their sustainability.

However, it is still far away from a sustainable bioengineering method due to the technical inadequacies as well as the heterogeneous property of the SOW. The third subject specialized conference of International Bioprocessing Association on SWTM-2019 was hosted on May 6–9, 2019 by Northwest A&F University, Yangling, China with a theme of 'Solid Waste Treatment and Management' with the focus of providing an efficient platform to share the innovation in the recently developed bioengineering technologies for the solid organic waste management and its applicability across the regions. The conference attracted over 272 delegates from 18 countries across Asia, Europe, America, Australia and Africa. There were 24 platform sessions run in 3 parallel sessions under 14 different topics covering various aspects of solid organic waste treatment and management. This special issue on bioengineering is a compilation of five

high-quality peer research and review papers from the bioengineering aspect of organic waste recycling and its valorization, circular bio-economy, and policy to reduce and re-use of solid organic waste. The bioengineering approaches reported by the authors here included soil amendments with natural and synthetic materials, recycled biomasses and waste materials, and production of valuable end product with high yield. The above bioengineering technologies can be considered as less expensive and more environmentally friendly than many conventional dig and dump, and incineration type approaches. A couple of papers also covered upon the necessity of improving the soil health and food security that, along with clean water, are crucial goals set by the United Nations for achieving a sustainable solid organic waste management of the world in the coming decades.

The guest editors thank the authors for their contribution to the new knowledge and the reviewers for their valuable time and efforts in the review process. Besides, we would like to thank Prof. Mohammad J. Taherzadeh, Editor-in-chief of the journal, and Dr. Jennifer Stokes, Journal Manager and the entire publishing team for their help and support in bringing out this special issue.

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