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Recycling & Waste Management

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Waste management for power generation

Solid waste management SWM is one of the most significant challenges being faced by the world today. SWM hierarchy consists of reduction of waste volume, reuse, and reduction of the toxicity, recycle, recover energy; waste disposal in an environmentally sound manner. Waste incineration to heat is an effective conversion of large volumes of combustible waste, simple and robust process, consequently the heat produced can be recovered to generate steam or electricity. This leads to saving conventional fossil fuels. Good in densely populated urban areas where large sites suitable for landfilling are not available. Waste incineration suffers high capital cost and skilled operators are required (particularly for boiler operations), considering that some of the waste materials are non-combustible, and then supplemental fuel would be needed. Public disapproval of incineration with the risk imposed rather than voluntary. Solid waste composting is biochemical process where organic materials decompose into humus like material, with aerobic organisms in mechanical digesters with the presence of oxygen.

This would save land footprint that can be needed to separate waste. This study is aimed at identifying evolving technological trends, competitor's distribution and technological convergence pattern between ICTs and SWM technology. This paper is organized into several sections, starting with the literature review in Section 2. Section 3 provides the answers to the research questions through analyses and discussion. Finally, Section 4 presents summary of conclusions of the paper.

Speaker Biography

Essam E Khalil has obtained his DIC (1976) and PhD (1977) from Imperial College of Science and Technology, London University, UK. Currently he is a professor of Energy in Cairo University since June 1988. Over 46 years of experience in design and simulation of combustion chambers for terrestrial and aerospace applications. He has published 13 books in English and over 880 papers in journals and conference proceedings on combustion, energy and indoor air quality control. He is a Fellow ASME, Fellow ASHRAE, and Fellow AIAA. And he is also a ASME George Westinghouse Gold Award recipient 2009 along with a ASME Harry Potter Gold Award recipient in 2012. He is director at Large ASHRAE, USA

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