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Role of Plasma in Disposing the Plastic

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Abstract

These days we are facing many problems related to pollution especially increase of pollutants in the atmosphere. Disposal of waste material without harming environmental conditions is the main objective of today. The rapid rate of urbanization in India has led to increase plastic waste. Bio-medical waste contains large amount of plastic waste, particularly plastic bags and PET bottles, metallic/ plastic syringes etc. being littered on the landscape of India. The use of plastic in India is going to be doubled in the next coming years as it is replacing conventional materials like metals, glass, cotton, wood and paper. Most of the plastic materials in India are being used in packaging in the form of films, pouches, carry bags, and containers, etc. Plastics do not degrade and decompose naturally so for that different technique can be used in which the most important is plasma pyrolysis and gasification. Plasma pyrolysis is the disintegration of organic compounds into gases and non- leachable solid residues in an oxygen-starved environment. This technology offer unique solutions to meet the increasing demands of dematerialization and to develop ecological sensible industrial practices like high temperatures, high chemical reactivity, high energy density and ability to process solids, liquids and gases. It is fast quenching and consumes small quantity of gas. This study shows that high ultraviolet radiation flux destroys pathogens and waste to be treated, could be dry or wet and to recover energy in the form of carbon monoxide and hydrogen.

Keywords: Plastic waste, Plasma pyrolysis, Syngas, Energy.

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