

"Waste-to-Profit" (W-t-P): Value added Products to Generate Wealth for a Sustainable Economy, volume 1

Chapter 10: Bioplastics: From the landfill to the market

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Abstract:

The present chapter is focused on the development of environmentally friendly materials (biodegradable plastics) from recycled petroleum based plastics. Petroleum based plastics are collected from the landfill sites, washed, separated and subjected to a cutter for size reduction. After this, a hot melt extrusion is used to mix them with additives extracted from agricultural residues such as sugarcane bagasse or maize stalk to induce biodegradation. Environmentally biodegradable materials are promising green materials as they degrade at landfill in less than a year. However, it is necessary to address the environmental biodegradability of environmentally friendly materials in order to meet various commercial and environmental needs for their sustainable growth. In this chapter, we discussed recycling of petroleum based plastics from the landfill sites and conversion to environmentally friendly plastics. Applications of sustainable materials are also discussed.