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Amar Mohanty

University of Guelph, Canada

Circular economy – A path forward in commercialization success of bioplastics and biobased materials

Globe has finite resource and thus the current linear economy model of “take-make-dispose” that represents “cradle to grave” type scenario is unsustainable and will not be economical. On the contrary we look for a waste-free world through “close-loop system” that represents “cradle-to-cradle” type concept towards a more sustainable “circular economy”. The so-called wastes and/or undervalued coproducts and byproducts from one industry can be used as raw materials for another industrial development thus in finding their value-added uses. Bioplastics in general are costly as compared to several traditional petro-based plastics. The design and engineering of biobased composites

from bioplastics and inexpensive coproducts from food processing and biofuel industries can create new industrial products of commercial values. In another approach recycled plastics in combination with inexpensive agro-residues and perennial grasses can develop affordable biocomposites for consumer product applications. This presentation will highlight how circular and green economy can synergize the opportunity of biobased materials in commercialization path and in societal uses. Both compostable biocomposites and biobased but not biodegradable type of biobased materials can help in reducing environmental impact through reduced greenhouse gas (GHG) emission.

Biography

Amar Mohanty is an international leader in the field of bioplastics and biobased materials. He holds a Research Leadership Chair position, is a Professor, and is the Director of the Bioproducts Discovery & Development Centre (BDDC) at the University of Guelph. He has more than 750 publications, including 336 peer-reviewed journal papers, 5 edited books, and 55 Patents awarded/applied. His R&D excellence helped develop several industrial products, bringing Four new bioproducts to market. His work was recognized by the BioEnvironmental Polymer Society receiving the Lifetime Achievement Award. He also received the Andrew Chase Forest Products Division Award from the American Institute of Chemical Engineers and was the holder of the Alexander von Humboldt Fellowship at the Technical University of Berlin, Germany. Currently, he holds the Director (elect) position of Forest Products Division of the American Institute of Chemical Engineers. He serves on the editorial board of seven international journals.

mohanty@uoguelph.ca