

Valorization of Biomass Waste Materials, a Biorefinery Concept

Valorization of food waste to high value-added products - An innovative approach toward a circular bioeconomy framework

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Abstract

The continual increase in global population and the high level of industrialization have led to a large food waste output to the point where natural reclamation pathways have become overloaded by this crisis. Furthermore, the consequences of food waste can no longer be ignored, as it poses severe hazards to the environment and humans, and a high capital expenditure is required for its treatment. Therefore, there is a need for the development of cheap and environmentally conscious processes. Second-generation feedstocks will advance circular bioeconomy practices by enabling the sustainable production of high-value-added products. The valorization of food waste to high-value-added products has garnered considerable attention in scientific literature, and it is seen as an Valorization of Food Waste to High Value-Added Products innovative strategy that will advance the circular bioeconomy. This chapter discusses the various market-based products that can be synthesized using food waste as a sustainable feedstock. Biobased products such as biofuels, biochemicals, biopolymers, biofertilizers, and volatile fatty acids are discussed in this chapter.