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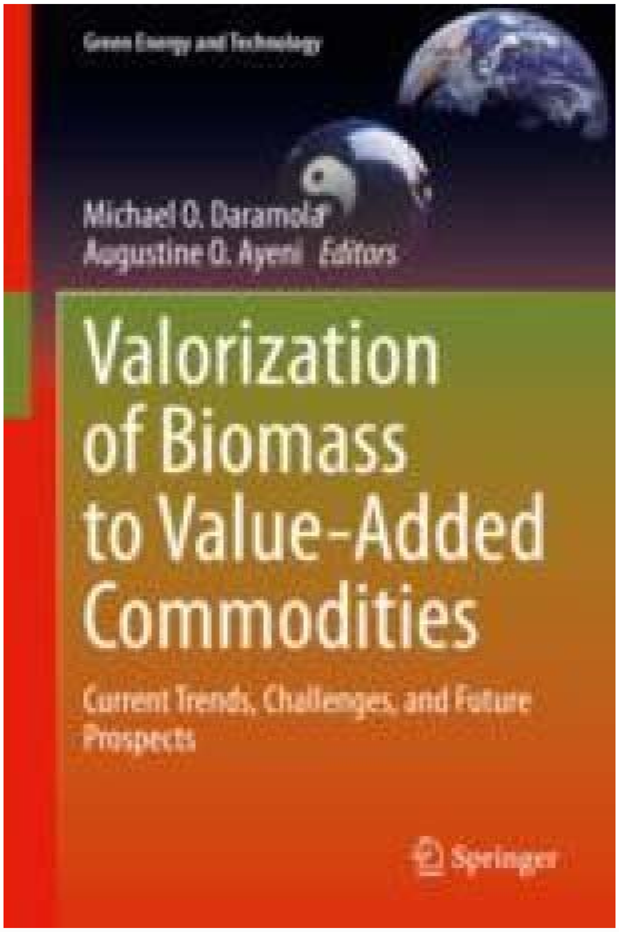
Valorization of Biomass to Value-Added Commodities



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Evaluation of Methods for the Analysis of Untreated and Processed Lignocellulosic Biomasses

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Chapter

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Abstract

The overall efficiency of the transformation of lignocellulosic materials to usable products as chemicals and fuels must be governed by adequate analysis of products before and after treatments. Using some promising technologies, lignocelluloses which are biomasses from marine plant and trees, grains, food and non-food crops, and wood-based can give products as fuel alcohol and other chemicals. Various methods of transformation from feedstock to valuable end products are discussed in the scientific literature. Therefore, yields must justify methods used for biomass transformations. As a result, adequate compositional analysis of these processing stages is needed. In this chapter, standard common methods such as gravimetric, chromatography, spectroscopic and their variations for analysis on both untreated and treated lignocelluloses are highlighted. The ease of the use and challenges with recommendations to their applicability to quantifying lignocelluloses fractionations for reproducibility and to be representative are discussed. With biomass technology, virtually all and even more products that can be produced from fossil energy can also be produced from biomass energy. Adequate analysis is therefore necessary.

Keywords

Biomass Analysis Pretreatment techniques Compositional analysis Chemical products

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