

Special Issue Reprint

Efficient Technology for the Pretreatment of Biomass II

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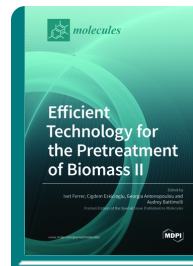
Edited by

Ivet Ferrer

Cigdem Eskicioglu

Georgia Antonopoulou

Audrey Battimelli



ISBN 978-3-0365-1794-0 (Hardback)

ISBN 978-3-0365-1793-3 (PDF)

Biomass can be used as feedstock for the production of biomaterials, chemicals, platform molecules and biofuels. It is the most reliable alternative to reduce fossil fuel consumption and greenhouse gas emissions. Within the framework of the circular economy, resource recovery from organic waste, including sewage sludge, biowaste, manure and slaughterhouse waste, is particularly useful, as it helps saving resources while reducing environmental pollution. In contrast to energy crops, lignocellulosic biomass and algae do not compete for food production; therefore, they represent an important source of biomass for bioenergy and bioproducts. However, biomass may require a pretreatment step in order to enhance its conversion into valuable products in terms of process yield and/or productivity. Furthermore, a pretreatment step may be mandatory for waste management (i.e., animal by-products).

Pretreatment technologies are applied upstream of various conversion processes of biomass into biofuels or biomaterials, including bioethanol, biohydrogen, biomethane, biomolecules or bioproducts. Pretreatments may include mechanical, thermal, chemical and biological techniques, which represent a crucial, cost-intensive step for the development of biorefineries. Thus, research is needed to help identify the most effective, economic, and environmentally friendly pretreatment options for each feedstock.

This issue aims to gather recent developments of biomass pretreatments for biofuel production.



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