

Introduction to Chemicals from Biomass

Editors

James Clark, *University of York, UK*

Fabien Deswarte, *University of York, UK*

Series Editor

Christian Stevens

Faculty of Bioscience Engineering, Ghent University, Ghent, Belgium

Introduction to Chemicals from Biomass presents an overview of the use of bioresources in the 21st century for the manufacture of major chemical and material products. The book covers resources, chemical composition of biomass, key factors affecting composition, biorefinery concepts, utilization of wastes, extraction technologies, controlled pyrolysis, fermentation and platform molecules and green chemical technologies for their conversion to valuable chemicals.

This book is intended to show that while biomass has biological origins and that biological methods will be an important part of the biorefinery toolkit, biomass is essentially a rich mixture of chemicals and materials that can be extracted for direct use or conversion into other useful products including high value chemicals. When we manipulate biomass we must build on the ideal start for any product lifecycle of a renewable resource, and use green (bio)chemical technologies for transformations to what could be genuinely green and sustainable products.

Introduction to Chemicals from Biomass will prove useful to both academic and industrial scientists involved in process/industrial chemistry within the areas of biotechnology, chemical engineering, fine and bulk chemical production, agriculture, crop science and energy & power generation.

We need to bring the chemistry to the biorefinery as well as take the chemicals from the biorefinery – and we must make sure it's all green chemistry!

Topics covered include:

- The Biorefinery Concept
- The Chemical Value of Biomass
- Green Chemical Technologies
- Production of Chemicals from Biomass
- Production of Biomaterials and Biopolymers from Biomass
- Production of Energy from Biomass

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