

RSC Energy and Environment Series

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Biological Conversion of Biomass for Fuels and Chemicals

Exploration from Natural Utilization Systems



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Biological Conversion of Biomass for Fuels and Chemicals reviews current advances in understanding the mechanisms of plant biomass degradation systems in nature, and cutting edge technologies for bioprocessing lignocellulosic materials into biofuels and bio-based chemicals. This book is intended to provide researchers and students with a comprehensive introduction to this emerging and a multi-disciplinary field, while also functioning as an important reference for those already active in the areas of biofuels and bio-chemical-related industries. The 20 chapters in the book are divided into two parts. In the first part, recent understanding of plant cell wall structures and strategies of modifying plant cell walls aimed to improve conversion efficiency are highlighted. In the second part, the authors provide exploratory research in various natural biomass-degrading systems, and provide rationale for cost-competitive biofuels production using biological pathways.

This book will also address detailed understanding of natural biomass utilization systems and the application of this knowledge to overcome current bottlenecks in industrial biocatalyst processing to generate a product. Mimicking nature for novel bioreactor designs will also be presented. As a result, this book will meet the needs of academic communities and a variety of industrial groups focused on rapid acceleration of progress in lignocellulosic biofuels and bio-chemicals industries. With some of the most intractable issues facing the world regarding efficient and economic conversion of lignocellulosic biomass, this book may come at a critical and timely moment.

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Energy lies at the heart of modern society, and it is critical that we make informed choices of the methods by which we convert and manage energy. The RSC Energy and Environment Series is a suite of professional reference books that will provide an up-to-date and critical perspective on the various options available.

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