



catalysts



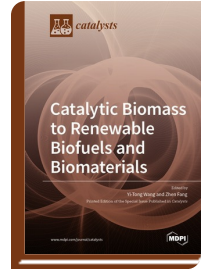
Special Issue Reprint

Catalytic Biomass to Renewable Biofuels and Biomaterials

www.mdpi.com/books/reprint/2498

Edited by
Zhen Fang
Yi-Tong Wang

ISBN 978-3-03936-312-4 (Hardback)
ISBN 978-3-03936-313-1 (PDF)



Biomass is the only renewable carbon source that can be converted into high value-added carbon products. This book presents a collection of studies on the conversion of catalytic biomass to renewable biofuels and biomaterials by chemical conversion, co-combustion technology, and biological conversion technology. The fundamentals and mechanisms of catalytic materials design, process optimization, product development, and by-product utilization are outlined. All articles were contributed by experts in catalysis and bioenergy fields to provide readers with a broad range of perspectives on cutting-edge applications. This book is an ideal reference guide for academic researchers and engineering technicians in the fields of catalytic material synthesis, biomass energy conversion, enzyme catalysis, pyrolysis, combustion, vaporization, and fermentation. It can also be used as a comprehensive reference source for university students in renewable energy science and engineering, agricultural engineering, thermal engineering, chemical engineering, material science, and environmental engineering. This book contains 12 articles: (1) “Catalytic Biomass to Renewable Biofuels and Biomaterials”; (2) “Experimental Design to Improve Cell Growth and Ethanol Production in Syngas Fermentation by *Clostridium carboxidivorans*”; (3) “Glycerol Acetylation Mediated by Thermally Hydrolysed Biosolids-Based Material”; (4) “Influence of Base-Catalyzed Organosolv Fractionation of Larch Wood Sawdust on Fraction Yields and Lignin Properties”; (5) “Ca-based Catalysts for the Production of High-Quality Bio-Oils from the Catalytic Co-Pyrolysis of Grape Seeds and Waste Tyres”; (6) “Synthesis of Diesel Range Cycloalkanes with Cyclopentanone and Furfural” (7) “Gel-Type and Cross-Linked Copolymers Functionalized with Acid Groups for the Hydrolysis of Pretreated with an Ionic Liquid”; (8) “Role of Humic Acid on Iron Bioreduction Derived from Different Biomass Feedstocks on Fe(III) Bioreduction Activity: Implication for Sustainable Use of Bioresources”; (9) “Selective Production of Terephthalonitrile and



Open Access Journal Copy Righted under the Creative Commons Attribution License for articles published by MDPI.

MDPI Books offers quality open access book publishing to promote the exchange of ideas and knowledge in a globalized world. MDPI Books encompasses all the benefits of open access – high availability and visibility, as well as wide and rapid dissemination. With MDPI Books, you can complement the digital version of your work with a high quality printed counterpart.



Open Access

Your scholarly work is accessible worldwide without any restrictions. All authors retain the copyright for their work distributed under the terms of the Creative Commons Attribution License.



Author Focus

Authors and editors profit from MDPI's over two decades of experience in open access publishing, our customized personal support throughout the entire publication process, and competitive processing charges as well as unique contributor discounts on book purchases.



High Quality & Rapid Publication

MDPI ensures a thorough review for all published items and provides a fast publication procedure. State-of-the-art research and time-sensitive topics are released with a minimum amount of delay.



High Visibility

Due to our global network and well-known channel partners, we ensure maximum visibility and broad dissemination. Title information of books is sent to international indexing databases and archives, such as the Directory of Open Access Books (DOAB), and the Verzeichnis Lieferbarer Bücher (VLB).



Print on Demand and Multiple Formats

MDPI Books are available for purchase and to read online at any time. Our print-on-demand service offers a sustainable, cost-effective and fast way to publish MDPI Books printed versions.