



Handbook of Biomass Valorization for Industrial Applications

Shahid UI Islam (Editor), Aabid Hussain Shalla (Editor), Salman Ahmad Khan (Editor)

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DESCRIPTION

HANDBOOK of BIOMASS VALORIZATION for INDUSTRIAL APPLICATIONS

The handbook provides a comprehensive view of cutting-edge research on biomass valorization, from advanced fabrication methodologies through useful derived materials, to current and potential application sectors.

Industrial sectors, such as food, textiles, petrochemicals and pharmaceuticals, generate massive amounts of waste each year, the disposal of which has become a major issue worldwide. As a result, implementing a circular economy that employs sustainable practices in waste management is critical for any industry. Moreover, fossil fuels, which are the primary sources of fuel in the transportation sector, are also being rapidly depleted at an alarming rate. Therefore, to combat these global issues without increasing our carbon footprint, we must look for renewable resources to produce chemicals and biomaterials. In that context, agricultural waste materials are gaining popularity as cost-effective and abundantly available alternatives to fossil resources for the production of a variety of value-added products, including renewable fuels, fuel components, and fuel additives.

Handbook of Biomass Valorization for Industrial Applications investigates current and emerging feedstocks, as well as provides in-depth technical information on advanced catalytic processes and technologies that enable the development of all possible alternative energy sources. The 22 chapters of this book comprehensively cover the valorization of agricultural wastes and their various uses in value-added applications like energy, biofuels, fertilizers, and wastewater treatment.

Audience

The book is intended for a very broad audience working in the fields of materials sciences, chemical engineering, nanotechnology, energy, environment, chemistry, etc. This book will be an invaluable reference source for the libraries in universities and industrial institutions, government and independent institutes, individual research groups, and scientists working in the field of valorization of biomass.

ABOUT THE AUTHOR

Shahid Ul Islam, PhD is a lecturer and researcher at the Department of Chemistry, Islamic University of Science and Technology (IUST), J&K India. Before joining IUST in 2021, he worked at the Indian Institute of Technology, Delhi as a research scientist. His research is focused on polymers and composites, functional finishes, natural products, green technologies, and valorization of biomass into useful products. He is the editor of several books published with the Wiley-Scrivener imprint.

Aabid Hussain Shalla, PhD is an associate professor and as I/C Head Department of Chemistry at Islamic University of Science and Technology, J&K India. His research interests include synthesis of hybrid ion exchange materials/ion-selective electrodes/ synthesis of smart responsive hydrogels to envisage their application in the removal and identification of toxic heavy metal ions, dyes, and polyaromatic hydrocarbons (PAHs) in wastewaters. He has more than 30 publications, a few books, and book chapters to his name.

Salman Ahmad Khan, PhD joined the Department of Chemistry, King Abdulaziz University, Jeddah, Saudi Arabia in 2009 and recently joined the School of Sciences, Maulana Azad National Urdu University (MANUU) as a professor. His research areas include organic synthesis, analytical chemistry, and nanotechnology. He has published more than 100 research articles in various international journals.

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