BIOMOLECULAR ENGINEERING SOLUTIONS FOR RENEWABLE SPECIALTY CHEMICALS

MICROORGANISMS, PRODUCTS, AND PROCESSES

EDITED BY
R. NAVANIETHA KRISHNARAJ
RAJESH K. SANI

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Biomolecular Engineering Solutions for Renewable Specialty Chemicals

Microorganisms, Products, and Processes

Edited by

R. Navanietha Krishnaraj
South Dakota School of Mines and Technology
Rapid City, SD, USA

Rajesh K. Sani
South Dakota School of Mines and Technology
Rapid City, SD, USA

WILEY

This edition first published 2022

Registered Office
John Wiley & Sons, Inc., 111 River Street, Hoboken, NJ 07030, USA

Editorial Office
111 River Street, Hoboken, NJ 07030, USA

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Library of Congress Cataloging-in-Publication Data applied for:

ISBN: 9781119771920

Cover design by Wiley
Cover image: © Vetre/Shutterstock

Preface

Biocommodity Engineering

Microorganisms have been realized as promising sources for production of biocommodities such as biofuels, pharmaceuticals, organic acids, amino acids, vitamins, biopolymers, surfactants, detergents, and enzymes. They offer several advantages over the conventional chemical processes including mild operating conditions, stereospecificity of the products, environmentally benign nature, and ecofriendly. Translating the bioproducts from laboratory to the industry remains a bottleneck. Biocommodity and biomolecular engineering approaches help in overcoming these limitations, developing new products, and improving the processes.

Considering the importance of the field, this book is specifically focused on potential technologies that can help in commercializing the processes. The objective of the book is to provide advanced technologies in producing different products using improved microorganisms/enzymes. This book will also discuss on improving the microbes or enzymes using protein engineering, metabolic engineering, and systems biology approaches for converting the wastes to value-added products.

Overall, this would be an ideal textbook for bioprocess, biorefinery, biomolecular, and biocommodity engineering courses for chemical, biochemical, and environmental engineering students. We have also included glossary and reasoning type questions at the end of each chapter. This book will also help the scientists to understand the advanced concepts in biomanufacturing. This book

discusses the promising strategies that will help overcome the current limitations in the biochemical synthesis processes. The book will help the readers working in industry or research to know about the new ways for improving the efficiency of the biochemical synthesis processes.

The editors would like to thank all the authors for their valuable contribution and the Wiley editorial team for their support.

List of Contributors

R. Aanandhalakshmi
Department of Biotechnology School of Bio and Chemical Engineering
Kalasalingam Academy of Research and Education
Krishnankoil, TN
India

Veknesh Arumugam
Department of Chemical and Environmental Engineering
Faculty of Engineering
Universiti Putra Malaysia
Serdang, Malaysia

Balasubramaniem Ashokkumar
Department of Genetic Engineering
School of Biotechnology
Madurai Kamaraj University
Madurai, TN
India

Saroj Bala
Department of Microbiology
Punjab Agricultural University
Ludhiana, PB
India

Rathindra Mohan Banik
Bioprocess Technology Laboratory
School of Biochemical Engineering
Indian Institute of Technology (Banaras Hindu University)
Varanasi, UP
India

Ramiya Baskaran
Department of Biotechnology

Indian Institute of Technology Madras
Chennai, TN
India

Mohit Bibra
Zymergen Inc., Emeryville, CA
USA

Rouf Ahmad Dar
Department of Microbiology
Punjab Agricultural University Ludhiana, PB
India

Madhuri Dutta
Biochemistry and Cell Biology Laboratory
School of Basic Sciences
Indian Institute of Technology Bhubaneswar, OR
India

Santhalingam Gayathri
Department of Genetic Engineering
School of Biotechnology
Madurai Kamaraj University
Madurai, TN
India

Tanvi Govil
Department of Chemical and Biological Engineering
South Dakota Mines
Rapid City, SD
USA

Composite and Nanocomposite Advanced Manufacturing – Biomaterials Center
Rapid City, SD
USA

Muhammad Heikal Ismail
Department of Chemical and Environmental Engineering
Faculty of Engineering

Universiti Putra Malaysia
Serdang, Malaysia

Shereena Joy
Department of Biotechnology
Indian Institute of Technology Madras
Chennai, TN
India

Sukumaran Karthika
Department of Genetic Engineering
School of Biotechnology
Madurai Kamaraj University
Madurai, TN
India

Chandraraj Krishnan
Department of Biotechnology
Indian Institute of Technology Madras Chennai, TN
India

R. Navanietha Krishnaraj
South Dakota School of Mines and Technology
Department of Chemical and Biological Engineering
Rapid City, SD
USA

BuG ReMeDEE Consortium, South Dakota School of Mines and Technology
Rapid City, SD
USA

Composite and Nanocomposite Advanced Manufacturing Centre – Biomaterials (CNAM/Bio)
Rapid City, SD
USA

Manoj Kumar
Department of Genetic Engineering
School of Biotechnology

Madurai Kamaraj University
Madurai, TN
India

Sanjay Kumar
School of Biochemical Engineering
IIT (BHU) Varanasi
Varanasi, UP
India

Satya Sundar Mohanty
Assistant Professor
Department of Biotechnology
School of Agriculture and Biosciences
Karunya Institute of Technology and Sciences
Coimbatore, TN
India

Vignesh Natarajan
Department of Biotechnology
Indian Institute of Technology Madras
Chennai, TN
India

Sinjini Patra
Biochemistry and Cell Biology Laboratory
School of Basic Sciences
Indian Institute of Technology Bhubaneswar, OR
India

Urmila Gupta Phutela
Department of Microbiology
Punjab Agricultural University Ludhiana, PB
India

Department of Renewable Energy Engineering
Punjab Agricultural University
Ludhiana, PB
India

Akhil Rautela
School of Biochemical Engineering
IIT (BHU) Varanasi, Varanasi UP, India

Gayathri Ravichandran
Department of Biomedical Engineering Indian Institute of Technology, Hyderabad
Kandi, Telangana
USA

Aravind Kumar Rengan
Department of Biomedical Engineering Indian Institute of Technology, Hyderabad
Kandi, Telangana
India

Winny Routray
Department of Food Process Engineering
National Institute of Technology Rourkela, OR
India

Anasuya Roychowdhury
School of Basic Sciences
Biochemistry and Cell Biology Laboratory
Indian Institute of Technology Bhubaneswar, OR
India

David R. Salem
Department of Chemical and Biological Engineering
South Dakota Mines
Rapid City, SD
USA

Composite and Nanocomposite Advanced Manufacturing – Biomaterials Center
Rapid City, SD
USA

Department of Materials and Metallurgical Engineering
South Dakota Mines Rapid City, SD

USA

Rajesh K. Sani
South Dakota School of Mines and Technology
Department of Chemical and Biological Engineering
Rapid City, SD
USA

South Dakota School of Mines and Technology
BuG ReMeDEE Consortium
Rapid City, SD
USA

Composite and Nanocomposite Advanced Manufacturing Centre – Biomaterials (CNAM/Bio)
Rapid City, SD
USA

South Dakota School of Mines and Technology
Department of Chemistry and Applied Biological Sciences
Rapid City, SD
USA

Shivam Saxena
Biochemistry and Cell Biology Laboratory
School of Basic Sciences
Indian Institute of Technology Bhubaneswar, OR
India

Shailendra Singh Shera
Department of Biotechnology
Faculty of Engineering & Technology
Rama University
Kanpur, UP
India

K. Sundar
Department of Biotechnology
School of Bio and Chemical Engineering
Kalasalingam Academy of Research and Education

S

t

v

w

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