

Contents

Part I General

Introduction to Biofuels	3
Avinash Kumar Agarwal, Rashmi Avinash Agarwal, Tarun Gupta and Bhola Ram Gurjar	
Sustainable Production of Chemicals and Energy Fuel Precursors from Lignocellulosic Fractions	7
Bhumica Agarwal, Vivek Ahluwalia, Ashok Pandey, Rajender Singh Sangwan and Sasikumar Elumalai	
Microbial Electrochemical Platform: Biofactory with Diverse Applications	35
S. Venkata Mohan, G. Velvizhi and P. Chiranjeevi	
Biomass-Derived HMF Oxidation with Various Oxidants	51
S. Saravanamurugan, Ashok Pandey and Rajender Singh Sangwan	
Hydrothermal Liquefaction of Lignocellulosic Biomass Components: Effect of Alkaline Catalyst	69
Rawel Singh, Bhavya B. Krishna and Thallada Bhaskar	
Pretreatment Strategies of Lignocellulosic Biomass Towards Ethanol Yield: Case Study of Pine Needles	85
Sangeeta Negi	
Ultrasound-Assisted Biodiesel Synthesis: A Mechanistic Insight	103
Ritesh S. Malani, Arun Goyal and Vijayanand S. Moholkar	
Thermo-Chemical Ethanol Production from Agricultural Waste Through Polygeneration: Performance Assessment Through a Case Study	137
Kuntal Jana and Sudipta De	

Microalgae Based Biofuel: Challenges and Opportunities	157
Richa Katiyar, Amit Kumar and B.R. Gurjar	
Surrogates for Biodiesel: Review and Challenges	177
Aditya Dilip Lele, Krishnasamy Anand and Krithika Narayanaswamy	
Response Surface Methodology Based Multi-objective Optimization of the Performance-Emission Profile of a CI Engine Running on Ethanol in Blends with Diesel	201
Probir Kumar Bose, Vijay Narayan Bodkhe, Bishop Deb Barma and Rahul Banerjee	
Effect of Alcohol Blending on Performance of Kerosene Fuelled Four-Stroke Spark Ignition Genset	229
Mritunjay Shukla, Eshan Singh and Sunil Pathak	

Biofuels

Technology, Challenges and Prospects

Agarwal, A.K.; Agarwal, R.A.; Gupta, T.; Gurjar, B.R.

(Eds.)

2017, X, 245 p. 94 illus., Hardcover

ISBN: 978-981-10-3790-0