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Nota di contenuto	Chapter 1: The Biorefinery: A Future -- Chapter 2: Biocrude Biorefinery: A Sustainable Solution for Bioenergy and Green Economy -- Chapter 3: Chemistry and reaction mechanism behind biocrude production -- Chapter 4: Lignocellulosic biomass into Bio-crude: Recent Advancements and Challenges. -Chapter 5: Hydrothermal co-liquefaction of actual biomasses and biomass model components -- Chapter 6: Empirical and intelligent modelling of biomass hydrothermal liquefaction -- Chapter 7: Waste to sustainable biocrude production: A biorefinery approach -- Chapter 8: Transformation of Lignocellulosic Biomass into Biocrude and High-Value Products -- Chapter 9: Municipal and industrial organic waste-derived biocrude: A waste biorefinery concept -- Chapter 10: Bio-oil: A Promising Energy Source

for Future Hydrogen Production -- Chapter 11: Catalytic upgrading of bio-crude oil to synthetic transportation fuels.-Chapter 12: Analytical Techniques for Bio-crude Analysis: Fuel Property and International Standards.-Chapter 13: Microbial Production of Biocrude oil and its futuristic applications -- Chapter 14: Nano-catalyst for biocrude production -- Chapter 15: Performance and emission characteristics of CI Engine using bio-crude derived biofuels -- Chapter 16: Valorization of Biochar and Hydrochar as Key Co-products in Biocrude Biorefineries -- Chapter 17: Biocrude production and upgradation by using an emerging biorefining approach -- Chapter 18: Technoeconomic and life cycle analyses for commercial biocrude production -- Chapter 19: Current Patents and innovation in biocrude production -- Chapter 20: Economic challenges and future perspectives for industrial scale biocrude production.

Sommario/riassunto

Biorefineries are increasingly important in providing sustainable routes to the oil industry. This book provides a comprehensive analysis of biocrude biorefinery to convert biocrude into environmentally friendly fuels and high-value-added products. It begins by discussing the biorefinery concept with its fundamentals and biocrude biorefinery as a sustainable solution for bioenergy and the green economy, explaining the chemistry and reaction mechanism behind biocrude production and analysing the different feedstocks, including lignocellulosic biomass, for biocrude production, recent developments and associated challenges. The second part focuses on waste oils and liquid wastes for sustainable biocrude oil production in a biorefinery approach, as well as on 3rd generation of biorefinery feedstocks (algal biomass) as emerging feedstock for biocrude oil production and high-value products in biorefineries and biocrude oil derived from municipal and industrial organic wastes in the framework of a waste biorefinery concept. Furthermore, bio-oil constitutes a promising energy source for future hydrogen production as well as for the catalytic conversion of crude bio-oil into environmentally friendly transport fuels. The physicochemical and analytical techniques used for the analysis of crude bio-oil with fuel properties and international standards, as well as microbial production and its future applications are also covered. This book will be of great interest to practitioners, graduate students, researchers and policymakers involved in crude bio-oil biorefineries for sustainable development. This book also explores the relationship between biofuels and Sustainable Development Goals (SDGs) 7. Furthermore, the book lays a solid foundation for the establishment of crude bio-oil-based biorefineries and thus contributes to a sustainable, cleaner, greener and livable blue planet for the next generations. Crude bio-oil is likely to be the "green gold" of the biorefinery of the future and this book will be a milestone for biorefineries.
