

1. Record Nr.	UNINA9910742490803321
Autore	Betiku Eriola
Titolo	Bioethanol: A Green Energy Substitute for Fossil Fuels // edited by Eriola Betiku, Mofoluwake M. Ishola
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2023
ISBN	3-031-36542-9
Edizione	[1st ed. 2023.]
Descrizione fisica	1 online resource (349 pages)
Collana	Green Energy and Technology, , 1865-3537
Altri autori (Persone)	IsholaMofoluwake M
Disciplina	662.6692
Soggetti	Renewable energy sources Chemical engineering Environmental engineering Bioorganic chemistry Renewable Energy Environmental Process Engineering Bioorganic Chemistry
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Introduction: Benefits, prospects, and challenges of bioethanol production -- Novel and cost-effective feedstock for sustainable bioethanol production -- Feedstock Conditioning and pretreatments (physical, chemical, and intensification assistance) -- Current status on substrate hydrolysis to fermentable sugars -- Bioethanol production from novel starch sources -- Bioethanol production from lignocellulosic wastes: potentials and challenges -- Bioethanol production from microalgae: potentials and challenges -- Bioethanol production via fermentation: microbes, process modeling and optimization -- Bioethanol recovery and dehydration techniques -- Ethanol utilization in spark ignition engines and emission characteristics -- Overview of commercial bioethanol production plants -- Techno-economic evaluation, Life cycle analysis of ethanol production -- Concluding remarks and future directions.
Sommario/riassunto	This book looks deeply into the prospects for using ethanol as a greener alternative to fossil fuels and the technical and scientific issues

that surround them. Ethanol, with its numerous advantages, has emerged as a promising contender to replace gasoline as a fuel source. Currently, it is commercially available as a blend with gasoline, commonly known as E10 and E25, utilizing various ratios of ethanol. Despite its clear benefits over gasoline, the widespread adoption of ethanol as a fuel remains hindered by its limited availability. In this insightful book, we aim to explore the multifaceted challenges surrounding ethanol's full integration into our energy landscape, employing a comprehensive approach through review manuscripts. Leading worldwide experts, known for their deep understanding of ethanol as a fuel, have contributed to the book. Their valuable insights and contributions enrich the book's content, offering readers a comprehensive exploration of the subject matter. This book is a compelling resource for researchers, energy professionals, and anyone interested in understanding the challenges and opportunities associated with the integration of ethanol as a substitute for gasoline.
