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Titolo	Biofuels: Greenhouse Gas Mitigation and Global Warming [[electronic resource] ] : Next Generation Biofuels and Role of Biotechnology // edited by Ashwani Kumar, Shinjiro Ogita, Yuan-Yeu Yau
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Disciplina	333.794
Soggetti	Renewable energy resources Climate change Agriculture Nature Environment Educational technology Economic sociology Renewable and Green Energy Climate Change Popular Science in Nature and Environment Educational Technology Organizational Studies, Economic Sociology
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references at the end of each chapters.
Nota di contenuto	Chapter 1. Introduction -- Chapter 2. Global warming, climate change and greenhouse-gas mitigation -- Chapter 3. Historical development of biofuels -- Chapter 4. Perspective of biofuel production from different sources -- Chapter 5. Potential biomass for biofuels from wastelands -- Chapter 6. Predicting high and stable biomass production by calorimetry: a novel approach -- Chapter 7. Appropriate rural technologies: 1. agricultural waste to charcoal 2. strategies for biogas production from organic garbage -- Chapter 8. Biofuel production: Lignocellulosic feedstock improvement for biofuel production through molecular breeding and biotechnology -- Chapter

9. A review on first- and second-generation biofuel production -- Chapter 10. Critical evaluation of biodiesel production initiatives in India -- Chapter 11. Biofuel sector in Malaysia: challenges and future prospects -- Chapter 12. Assessment of non-plantation biomass resources potential for energy in India -- Chapter 13. Agrotechnology, production and demonstration of high quality planting material in three tier system for biofuels in semi-arid and arid conditions -- Chapter 14. Alternative biomass from saline and semi-arid and arid conditions as a source of biofuels: 1. Salicornia in Gujrat -- Chapter 15. Alternative Biomass from saline and semi-arid and arid conditions as a source of biofuels: 2. Calotropis species in Rajasthan -- Chapter 16. Potential of lignocellulosic materials for production of ethanol -- Chapter 17. Agro industrial lignocellulosic waste: an alternative to unravel the future bioenergy -- Chapter 18. Third-generation biofuel: algal biofuels as a sustainable energy source -- Chapter 19. Recent progress in the genetic engineering of biofuel crops -- Chapter 20. Bioresources and technologies that accelerate biomass research -- Chapter 21. Biotechnological research in *Cryptomeria japonica* -- Chapter 22. Cinnamyl alcohol dehydrogenase deficiency causes brown midrib phenotype in rice -- Chapter 23. The distribution, evolution and transposition of the mariner-like elements in bamboo -- Chapter 24. Novel molecular tools for metabolic engineering to improve microalgae-based biofuel production -- Chapter 25. Synthetic and semi-synthetic metabolic pathways for fourth-generation biofuel production: Future projections.

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#### Sommario/riassunto

This timely book is a compilation of edited articles by distinguished international scientists discussing global warming, its causes as well as present and future solutions. Social and economic growth at global level is measured in terms of GDP, which requires energy inputs generally based on fossil fuel resources. These, however, are major contributors to increasing levels of CO<sub>2</sub>, causing 15 tonnes of green house gas emissions per capita. Renewable sources of energy offer an alternative to fossil fuels, and would help reduce this to the 2 tonnes of greenhouse gas emissions per capita per annum needed to achieve sustainable growth. As such, the book discusses the next-generation of biofuels and all related aspects, based on the editors' significant investigations on biofuels over the last 30 years. It also presents the latest research findings from research work carried out by contemporary researchers. Presenting global biofuel perspectives, it examines various issues related to sustainable development of biofuels in the contexts of agriculture, forestry, industry and economic growth. It covers the 1st to 4th generation biofuels, as well as the status of biofuel resources and their potential in carbon neutral economy. Offering a comprehensive, state-of-art overview of current and future biofuels at local and global levels, this book appeals to administrators, policy makers, universities and research institutions.

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