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Nota di contenuto	FRONT COVER; ABOUT THE EDITOR; CONTENTS; ACKNOWLEDGMENT AND HOW TO CITE; LIST OF CONTRIBUTORS; INTRODUCTION; PART I - THE PREMISE; CHAPTER 1 - Synthetic Biology: A Promising Technology for Biofuel Production; PART II - PRETREATMENT TECHNOLOGIES; CHAPTER 2 - Efficient Extraction of Xylan from Delignified Corn Stover Using Dimethyl Sulfoxide; CHAPTER 3 - Process Modeling of Enzymatic Hydrolysis of Wet-Exploded Corn Stover; CHAPTER 4 - Bioconversion of Lignocellulose: Inhibitors and Setoxification; PART III - ADVANCED MICROBIAL TECHNOLOGIES CHAPTER 5 - Microbial Production of Sabinene-A New Terpene-Based Precursor of Advanced BiofuelCHAPTER 6 - From Biodiesel and Bioethanol to Liquid Hydrocarbon Fuels: New Hydrotreating and Advanced Microbial Technologies; CHAPTER 7 - Synthetic Routes to Methylerythritol Phosphate Pathway Intermediates and Downstream Isoprenoids; PART IV - GENETIC ENGINEERING; CHAPTER 8 - Metabolic Process Engineering for Biochemicals and Biofuels Production; CHAPTER

9 - Enhanced Genetic Tools for Engineering Multigene Traits into Green Algae
CHAPTER 10 - Development of a Broad-Host Synthetic Biology Toolbox for Ralstonia eutropha and Its Application to Engineering Hydrocarbon Biofuel ProductionPART V - NANOTECHNOLOGY AND CHEMICAL ENGINEERING; CHAPTER 11 - Heterogeneous Photocatalytic Nanomaterials: Prospects and Challenges in Selective Transformations of Biomass-Derived Compounds; CHAPTER 12 - Development of Mesoscopically Assembled Sulfated Zirconia Nanoparticles as Promising Heterogeneous and Recyclable Biodiesel Catalysts; CHAPTER 13 - Kinetic Study on the CsXH3-X PW12O40/Fe-SiO2 Nanocatalyst for Biodiesel Production
AUTHOR NOTESBACK COVER

Sommario/riassunto

The information contained in this compendium volume sets the stage for the future's large-scale production of biofuels. Biomass is an abundant carbon-neutral renewable feedstock for producing fuel. First-generation biofuels gained attention for their problems, but the authors of this book demonstrate that they are well on their way to creating practical and sustainable second-generation biofuels.The book begins with an introduction to synthetic biology. Next, it covers pretreatment technologies, advanced microbial technologies, genetic engineering as it relates to biofuel technologies, and nan