1. Record Nr. UNINA9910298328003321

Titolo	Plants and bioenergy / / Maureen C. McCann, Marcos S. Buckeridge, Nicholas C. Carpita, editors
Pubbl/distr/stampa	New York : , : Springer, , 2014
ISBN	1-4614-9329-3
Edizione	[1st ed. 2014.]
Descrizione fisica	1 online resource (x, 289 pages) : illustrations (some color), color maps
Collana	Advances in Plant Biology, , 2363-8451 ; ; 4
Disciplina	572.572
Soggetti	Energy crops
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	Part I. Economics of Bioenergy -- Chapter 1. Advanced Biofuels: Economic Uncertainties, Policy Options, and Land Use Impacts -- Chapter 2. The prospects of first generation ethanol in developing countries -- Chapter 3. Can energy policy drive sustainable land use? Lessons from Biofuels Policy Development over the Last Decade -- Chapter 4. Algae Farming and its Bio-products -- Part II. Biomass Biology -- Chapter 5. Regional gene pools for restoration, conservation, and genetic improvement of prairie grasses -- Chapter 6. Mining Genetic Diversity of Sorghum as a Bioenergy Feedstock -- Chapter 7. Genetics, genomics and crop modelling: integrative approaches to the improvement of biomass willows -- Chapter 8: Xylan biosynthesis in plants, simply complex -- Chapter 9. Towards redesigning cellulose biosynthesis for improved bioenergy feedstocks -- Chapter 10. Camelina: An Emerging Oilseed Platform for Advanced Biofuels and Bio-Based Materials -- Part III. Biomass Processing -- Chapter 11. Developing novel enzyme repertoires for the efficient deconstruction of plant biomass tailored for the bioenergy industry -- Chapter 12. Using Natural Plant Cell Wall Degradation Mechanisms to Improve Second Generation Bioethanol -- Chapter 13. Lignocellulosic Biorefineries: Concepts and Possibilities -- Chapter 14. Linking Plant Biology and Pretreatment – Understanding the Structure and Organization of the Plant Cell Wall and Interactions with Cellulosic Biofuel Production -- Chapter 15. Catalytic oxidation of lignin for the production of low molecular weight aromatics -- Chapter 16. Catalytic

dehydration of lignocellulosic derived xylose to furfural -- Chapter 17. Perspectives in Brazil of the contribution of palm trees to biodiesel production.

Sommario/riassunto

A country's vision for developing renewable and sustainable energy resources is typically propelled by three important drivers – security, cost, and environmental impact. The U.S. currently accounts for a quarter of the world’s total oil consumption, with domestic demands necessitating – at an ever growing cost – a net import of more than 50% of the oil used in this country. At the same time, Brazil, because of its forward thinking on energy strategy, is today energy independent. As emerging economies around the world increase their petroleum use by large margins and as large fractions of that new consumption are necessarily supplied from unstable parts of the world, the inevitable repercussions on petroleum-driven economies will continue to escalate. In addition, there is an unequivocal imperative to take immediate and aggressive measures to reduce net greenhouse gas emissions by decreasing fossil fuel consumption and increasing our use of carbon-neutral or carbon-negative fuels as well as improving efficiency of fuel use. Economic growth and development worldwide depend increasingly on secure supplies of reliable, affordable, clean energy. Together with its counterpart societies, was convened the First Pan-American Congress on Plants and BioEnergy, which was held in June, 2008, in Mérida, Mexico. Sponsored by the American Society of Plant Biologists, this congress was designed to initiate Pan-American research collaborations in energy biosciences. At that congress, the organizational committee committed themselves to continue the meeting biennially, resulting in the 2nd Pan-American Congress on Plants and BioEnergy to be held with the endorsement of ASPB, July 6-10, 2010, in São Paulo, Brazil. Whereas the 1st congress covered a broad range of topics that bioenergy impacted, the second congress will focus more on the advances in plant biology: the genetic improvement of energy crop plants, their fit into regional environments, and the development of a sustainable energy agriculture.