

1. Record Nr.	UNINA9910958119803321
Titolo	Biological barriers to cellulosic ethanol // Ernest V. Burkheisser, editor
Pubbl/distr/stampa	New York, : Nova Science Publishers, c2010
ISBN	1-61122-448-9
Edizione	[1st ed.]
Descrizione fisica	1 online resource (265 p.)
Collana	Renewable energy : research, development and policies series
Altri autori (Persone)	BurkheisserErnest V
Disciplina	662/.88
Soggetti	Cellulose - Biotechnology Biomass energy
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 and index.
Nota di contenuto	<p>""BIOLOGICAL BARRIERSTO CELLULOSIC ETHANOL""; ""BIOLOGICAL BARRIERS TO CELLULOSIC ETHANOL""; ""TABLE OF CONTENTS""; ""PREFACE""; ""INTRODUCTION""; ""JOINT WORKSHOP CHALLENGES BIOFUEL SCIENCE ANDTECHNOLOGY COMMUNITIES""; ""AMERICAa€?S ENERGY CHALLENGES""; ""The Promise of Biofuels""; ""A GROWING MANDATE FOR BIOFUELS: POLICY,LEGISLATIVE, AND OTHER DRIVERS""; ""BENEFITS OF BIOFUELS""; ""National Energy Security Benefits""; ""Economic Benefits""; ""Environmental Benefits""; ""Climate Change""; ""Other Environmental Benefits""; ""FEASIBILITY OF BIOFUELS""; ""Land Availability""</p> <p>""A BILLION-TON ANNUAL SUPPLY OF BIOMASS: SUMMARY OFPOTENTIAL FOREST AND AGRICULTURAL RESOURCES""""Agricultural Sustainability of Biomass Production""; ""Today a€? Fuel Ethanol Production from Corn Grain (Starch Ethanol)""; ""Tomorrow a€? Biorefinery Concept to Produce Fuel Ethanol from CellulosicBiomass""; ""Ethical, Legal, and Social Issues (ELSI)""; ""EERE OBP PLATFORM FOR INTEGRATED BIOREFINERIES""; ""ETHICAL, LEGAL, AND SOCIAL ISSUES FOR WIDESPREADDEVELOPMENT OF CELLULOSIC BIOFUELS""; ""DOE OFFICE OF SCIENCE PROGRAMS""</p> <p>""BIOMASS TO BIOFUELS WORKSHOP: CREATING A COMMONRESEARCH AGENDA TO OVERCOME TECHNOLOGY BARRIERS""""CITED REFERENCES""; ""BACKGROUND READING""; ""TECHNICAL STRATEGY: DEVELOPMENTOF A VIABLE CELLULOSIC BIOMASSTO BIOFUEL INDUSTRY""; ""RESEARCH PHASE (WITHIN 5 YEARS)""; ""Feedstock Use</p>

and Optimization"; "Deconstruction"; "Fermentation and Recovery";
 "TECHNOLOGY DEPLOYMENT PHASE (WITHIN 10 YEARS)";
 "Feedstocks"; "Deconstruction"; "Fermentation and Recovery";
 "SYSTEMS INTEGRATION PHASE (WITHIN 15 YEARS)"; "Integration and Consolidation"
 "SYSTEMS BIOLOGY TO OVERCOME BARRIERS TO CELLULOSE ETHANOL"
 "LIGNOCELLULOSIC BIOMASS CHARACTERISTICS";
 "Makeup, Structure, and Processability"; "IMAGE ANALYSIS OF BIOENERGY PLANT CELL SURFACES AT THE OBP BIOMASS SURFACE CHARACTERIZATION LAB (BSCL)"; "STRUCTURE AND ASSEMBLY OF CELL WALLS"; "OPTIMIZING LIGNIN COMPOSITION FOR MORE EFFICIENT BIOETHANOL PRODUCTION"; "FACTORS IN RECALCITRANCE OF LIGNOCELLULOSE PROCESSING TO SUGARS"; "Plant Architecture";
 "Cell-Wall Architecture"; "Molecular Structure"; "OPTIMIZING HEMICELLULOSE ACETYLATION IN CELL WALLS"
 "Hemicellulose Acetylation Degradation Products Are Toxic to Microbes"
 "OPTIMIZATION OF PLANT CELL WALLS"; "Understanding Cell-Wall Structure and Function"; "Control of Lignin Synthesis and Structure"; "IMPROVED METHODS, TOOLS, AND TECHNOLOGIES";
 "Technical Milestones"; "Within 5 years"; "Within 10 years"; "Within 15 years"; "CITED REFERENCES"; "FEEDSTOCKS FOR BIOFUELS"; "THE ARGUMENT FOR PERENNIAL BIOMASS CROPS"; "CREATION OF A NEW GENERATION OF LIGNOCELLULOSIC ENERGY CROPS"; "Maximizing Biomass Productivity"; "Domestication of Energy Crops"
 "ENHANCING POPLAR TRAITS FOR ENERGY APPLICATIONS"

Sommario/riassunto

Defines barriers and challenges to a rapid expansion of cellulosic-ethanol production and determine ways to speed solutions through concerted application of modern biology tools as part of a joint research agenda.