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INDUSTRY"'; "'RESEARCH PHASE (WITHIN 5 YEARS)"'; "'Feedstock Use 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 TOCELLULOASIC ETHANOL"'; "'LIGNOCELLULOASIC BIOMASS CHARACTERISTICS"'; "'Makeup, Structure, and Processability"'; "'IMAGE ANALYSIS OF BIOENERGY PLANT CELL SURFACES AT THEOBP BIOMASS SURFACE CHARACTERIZATION LAB (BSCL)"'; "'STRUCTURE AND ASSEMBLY OF CELL WALLS"'; "'OPTIMIZING LIGNIN COMPOSITION FOR MORE EFFICIENTBIOETHANOL PRODUCTION"'; "'FACTORS IN RECALCITRANCE OF LIGNOCELLULOSEPROCESSING 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 LIGNOCELLULOUSICENERGY CROPS"'; "'Maximizing Biomass Productivity"'; "'Domestication of Energy Crops'"
"'ENHANCING POPLAR TRAITS FOR ENERGY APPLICATIONS'"
