1. Record Nr. UNINA9910716815903321

Autore	Mendez Gregory O.
Titolo	Surface-water and ground-water quality in the Yucaipa area, San Bernardino and Riverside counties, California, 1996-98 / / by Gregory O. Mendez, Wesley R. Danskin, and Carmen A. Burton ; prepared in cooperation with the San Bernardino Valley Municipal Water District
Pubbl/distr/stampa	Sacramento, California : , : U.S. Geological Survey, , 2001
Descrizione fisica	1 online resource (v, 42 pages) : illustrations (some color), color maps
Collana	Water-resources investigations report ; ; 00-4269
Soggetti	Groundwater - Quality - California - Riverside County Groundwater - Quality - California - San Bernardino County Water quality - California - Riverside County Water quality - California - San Bernardino County Artificial groundwater recharge - California - Yucaipa Region Artificial groundwater recharge Groundwater - Quality Water quality Water - California - Yucaipa Region
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	"5020-74."
Nota di bibliografia	Includes bibliographical references (pages 34-35).

2. Record Nr. UNINA9910166644903321

Autore	Blake Simmons
Titolo	Biomass Modification, Characterization and Process Monitoring Analytics to Support Biofuel and Biomaterial Production
Pubbl/distr/stampa	Frontiers Media SA, 2016
Descrizione fisica	1 online resource (156 p.)
Collana	Frontiers Research Topics
Soggetti	Biotechnology
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia

Sommario/riassunto

The conversion of lignocellulosic biomass into renewable fuels and other commodities has provided an appealing alternative towards supplanting global dependence on fossil fuels. The suitability of multitudes of plants for deconstruction to useful precursor molecules and products is currently being evaluated. These studies have probed a variety of phenotypic traits, including cellulose, non-cellulosic polysaccharide, lignin, and lignin monomer composition, glucose and xylose production following enzymatic hydrolysis, and an assessment of lignin-carbohydrate and lignin-lignin linkages, to name a few. These quintessential traits can provide an assessment of biomass recalcitrance, enabling researchers to devise appropriate deconstruction strategies. Plants with high polysaccharide and lower lignin contents have been shown to breakdown to monomeric sugars more readily. Not all plants contain ideal proportions of the various cell wall constituents, however. The capabilities of biotechnology can alleviate this conundrum by tailoring the chemical composition of plants to be more favorable for conversion to sugars, fuels, etc. Increases in the total biomass yield, cellulose content, or conversion efficiency through, for example, a reduction in lignin content, are pathways being evaluated to genetically improve plants for use in manufacturing biofuels and bio-based chemicals. Although plants have been previously domesticated for food and fiber production, the collection of phenotypic traits prerequisite for biofuel production may

necessitate new genetic breeding schemes. Given the plethora of potential plants available for exploration, rapid analytical methods are needed to more efficiently screen through the bulk of samples to hone in on which feedstocks contain the desired chemistry for subsequent conversion to valuable, renewable commodities. The standard methods for analyzing biomass and related intermediates and finished products are laborious, potentially toxic, and/or destructive. They may also necessitate a complex data analysis, significantly increasing the experimental time and add unwanted delays in process monitoring, where delays can incur in significant costs. Advances in thermochemical and spectroscopic techniques have enabled the screening of thousands of plants for different phenotypes, such as cell-wall cellulose, non-cellulosic polysaccharide, and lignin composition, lignin monomer composition, or monomeric sugar release. Some instrumental methods have been coupled with multivariate analysis, providing elegant chemometric predictive models enabling the accelerated identification of potential feedstocks. In addition to the use of high-throughput analytical methods for the characterization of feedstocks based on phenotypic metrics, rapid instrumental techniques have been developed for the real-time monitoring of diverse processes, such as the efficacy of a specific pretreatment strategy, or the formation of end products, such as biofuels and biomaterials. Real-time process monitoring techniques are needed for all stages of the feedstocks-to-biofuels conversion process in order to maximize efficiency and lower costs by monitoring and optimizing performance. These approaches allow researchers to adjust experimental conditions during, rather than at the conclusion, of a process, thereby decreasing overhead expenses. This Frontiers Research Topic explores options for the modification of biomass composition and the conversion of these feedstocks into to biofuels or biomaterials and the related innovations in methods for the analysis of the composition of plant biomass, and advances in assessing up- and downstream processes in real-time. Finally, a review of the computational models available for techno-economic modeling and lifecycle analysis will be presented.