Biorefinery Technologies: Global Markets

Description:

- A complete techno-economic and environmental analysis of industrial biorefineries, which have been identified as the most promising route to the creation of a domestic bio-based industry
- Analyses of global market trends, with data from 2014 to 2016, and projections of compound annual growth rates (CAGRs) through 2021.
- Coverage of all biomass fractionation and conversion technologies
- Forecasts for biomass conversion processes and equipment to produce fuels, power, and chemicals from biomass
- Identification of feedstocks, chemical products, and transportation fuels
- Evaluations of the prospects for biorefineries built on different "platforms," such as the "sugar platform," based on fermentation of sugars extracted from biomass feedstocks, versus the "syngas platform," based on thermochemical conversion processes
- Detailed patent analysis and a research-and-development update
- Company profiles of major players in the industry.

Scope of the Report:

The report starts with an overview that provides the background of the industry and reports on market trends. It also indicates the importance of the industry and the ways in which biorefinery technologies fit into the global economy. It also quantifies staffing and salary, professions, carriers, occupations, new product development and market penetration. It then presents the relative percentage contribution of each of the identified platforms with forecasts to 2021.

Chapter Four quantifies the demand for the physicochemical technology platform, including processes (e.g., pressing, pretreatment, milling, separation, distillation) that do not change the chemical structure of the biomass components, but perform a size reduction or a separation of feedstock components and chemical processes (e.g., hydrolysis, transesterification, hydrogenation, oxidation, pulping) in which a chemical change in the substrate occurs.

Chapter Five quantifies the demand for the biological technology platform, including industrial microbiological processes such as anaerobic digestion, anaerobic fermentation, enzymatic conversion that occur under mild operating conditions (e.g., lower temperature and pressure) using microorganisms or enzymes.

Chapter Six quantifies the demand for the thermochemical technology platform, including pyrolysis; gasification, hydrothermal upgrading and combustion, including processes in which feedstock undergoes extreme conditions (e.g., high temperature and/or pressure, with or without a catalytic means).

Chapter Seven identifies and quantifies the demand for the hybrid technology platform including biological transformation (fermentation) of biomass gasification-derived syngas to alcohols, thermochemical catalytic transformation of biochemical platform-produced sugars (and perhaps other solubilized carbon species) to hydrocarbon biofuels and thermochemical catalytic transformation of biochemical platform produced alcohols such as ethanol or butanol into hydrocarbon biofuels.

Chapter Eight presents the development of advanced biorefinery technologies and process developments and includes an evaluation of major patents and company shares.

Chapter Nine describes the biorefinery technology industry structure. It considers a number of influencing
factors, including macro factors that affect the global economy and the agricultural economy in particular, and industry-specific factors such as the public acceptance of biorefinery products.

Consideration has also been given to the development of the industry over the period since 2013 and the forces that have led to its ongoing restructuring. It also assesses the rise of bio-based companies; outsourcing; adding value through improved formulations, drop-ins and additives; and the streamlining of product portfolios.

Chapter Ten discusses the macroeconomic aspects and energy perspective and geographical diversification of the major international trends.

Chapter Eleven analyzes the future of the regulation and legislation of the biorefinery industry.

The report concludes with a chapter that contains comprehensive profiles of the relevant companies involved in biorefinery technologies, including biorefinery technology integrators that currently have assets that can be deployed to transform biomass feedstocks.

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