



fermentation



Special Issue Reprint

Upstream Bioprocesses to Biomass-Based Platform Chemicals and Derivatives

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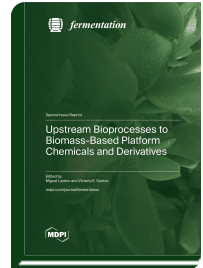
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In a global situation marked by the need to find new material and energy resources, as well as novel processes and procedures that improve the efficiency of the use of any resource, plant biomass has been shown to be an excellent set of raw materials for obtaining products that can compete with and ultimately replace chemical products from the petrochemical industry. The main characteristic of plant biomass is its renewability, in clear contrast to fossil sources. In fact, the capacity of terrestrial and marine plants to fix inorganic matter, including carbon dioxide, through photosynthesis, makes it possible to generate enormous quantities of matter, this so-called plant biomass (about 187 million tons of this biomass is created annually). The implementation of new products and processes from this biomass will avoid stresses to the food and feed markets, while potentially substituting materials, chemicals and, in part, energy vectors from fossil resources. However, its structure is refractory to transformation and requires numerous physical, chemical, and biological or biocatalytic treatments to facilitate its transformation into platform chemicals or organic industrial intermediates and, ultimately, into the numerous chemicals and materials demanded by society. This Special Issue collects several papers devoted to the processes and operations that, with the help of enzymes, microorganisms, and higher organisms, allow for the access and transformation of biomass into chemical intermediates or platform chemicals.



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