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## **Lignocellulosic biomass utilization toward biorefinery: technologies, products and perspectives**

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Lignocellulosic biomass wastes (LBW) are generated and accumulated in large amounts around the world every year. The disposal of large amounts of such wastes in the nature may cause environmental problems, affecting the quality of the soil, lakes and rivers. In order to avoid these problems, efforts have been directed to use LBW in a biorefinery to maximize the reutilization of these wastes with minimal or none production of residual matter. Through biorefinery, the biomass is submitted to different conversion processes that may include biological, physical and chemical technologies to produce fuels, power, heat, food, feed, and value-added chemicals. The products that can be obtained as well as the technologies that can be used for biomass disruption and

conversion vary according to the characteristics of the LBW, such as the physical properties and chemical composition in terms of cellulose, hemicellulose, lignin and protein contents [1]. By producing multiple products through a biorefinery, the value of the biomass feedstock is maximized, which can be of particular interest in countries with abundance of these wastes and also in the underdeveloped countries that can explore better their resources and waste materials. In the future, a significant increase in the implementation of biorefinery processes for biomass valorisation is expected motivated by the desire in reducing the impact and toxicity of these wastes to the environment and at the same time to produce compounds of industrial interest from competitive technologies based on the use of low-cost raw materials. The creation of more jobs is another positive and important aspect related to the implementation of these processes on industrial scale.

### Reference

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