Special Issue

Sustainable Biofuel and Biochemical Production from Lignocellulosic Biomass

Message from the Guest Editors

The terms *lignocellulosic materials* and *lignocellulosic biomass* refer to plant biomass that can originate from various sources. Lignocellulose makes up about 60% of the biomass produced by plants on Earth, and there are numerous possibilities for its biotechnological applications. Lignocellulose consists of cellulose, hemicellulose, and lignin, which can be broken down into simpler components through different pretreatment methods. This conversion turns the biomass into a valuable feedstock for various biotechnological processes. The resulting biofuels (e.g., bioethanol) and biochemicals offer a more sustainable and environmentally friendly option, reducing greenhouse gas emissions and dependence on non-renewable resources. It is essential to develop new efficient processes in which these materials can be used as renewable raw materials while simultaneously creating opportunities for the production of high-value products. Thus, lignocellulose can become the foundation of production processes that are justified from both ecological and economic standpoints.

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