

Special Issue

Biorefining and Circularity Towards Absolute Sustainability: Design, Modelling, and Optimization of Emerging Technologies and Flagship Biorefineries

Message from the Guest Editors

Here's a reduced version of your text, not exceeding 1000 characters: The rising demand for energy, materials, and chemicals, coupled with climate change and resource depletion, underscores the need for sustainable solutions. Biorefineries offer a promising approach, evolving from biomass conversion to broader sustainable practices. By leveraging renewable feedstocks (e.g., biomass, captured CO₂) and efficient strategies, biorefineries can drive a circular bioeconomy, reduce emissions and deforestation, minimize waste, and enhance resource recovery. This Special Issue invites research on biorefinery design, modeling, and optimization, focusing on innovative concepts and technologies that support the transition to a sustainable bioeconomy and mitigate environmental impacts. **Topics include:**

- Renewable feedstock conversion into fine and bulk chemicals.
- Biofuels and bioenergy (e.g., biodiesel, SAF, biochar).
- Biofertilizers (e.g., inoculants).
- CO₂ capture and utilization in biorefineries.

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I encourage you to contribute a research or comprehensive review article for consideration for publication in *Sustainability*, an international Open Access journal which provides an advanced forum for research findings in areas related to sustainability and sustainable development. *Sustainability* publishes original research articles, review articles and communications. I am confident you will find the journal contributes to enhancing understanding of sustainability and fostering initiatives and applications of sustainability-based measures and activities.

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