

Editorial

Advanced Catalysis for Green Fuel Production from Biomass and Wastes

Lucília S. Ribeiro^{1, 2, *}

1. LSRE-LCM – Laboratory of Separation and Reaction Engineering - Laboratory of Catalysis and Materials, Faculty of Engineering, University of Porto, Rua Dr. Roberto Frias, 4200-465 Porto, Portugal; E-Mail: lucilia@fe.up.pt
2. ALiCE – Associate Laboratory in Chemical Engineering, Faculty of Engineering, University of Porto, Rua Dr. Roberto Frias, 4200-465 Porto, Portugal

* **Correspondence:** Lucília S. Ribeiro; E-Mail: lucilia@fe.up.pt

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The limited fossil fuel resources and growing energy demands associated with environmental concerns have led to a significant rise in the search for sustainable alternatives, such as biomass [1-4]. Biomass is nature's most abundant renewable organic carbon resource [5]. Considering its availability, there is a tremendous worldwide potential for fuels and chemical production from biomass, which would be a promising approach to fulfill the demanding global task of diminishing carbon footprint, helping to reduce fossil resource dependency [6]. In this case, the chemicals and fuels produced from biomass are considered green since the carbon dioxide released upon combustion gets captured through photosynthesis [7].

Within this framework, the catalytic conversion of biomass and wastes into green fuels based on the development of sustainable catalytic processes is undoubtedly a hot topic. Furthermore, their conversion into high-value fuels also solves the urgent waste management problem. In this sense,



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catalysis is central to sustainable biomass processing. Therefore, advances in low-cost, eco-friendly, efficient and selective catalysts are paramount in this area.

This Special Issue, “Advanced Catalysis for Green Fuel Production from Biomass and Wastes,” aims to present and disseminate the most recent findings and advancements in this field of study. Thus, we invite submissions in a broad range of subjects, from original research articles reporting the development and synthesis of new catalysts and catalytic processes for the conversion of biomass and wastes, including the techno-economic and life cycle assessment analyses, to review articles that provide comprehensive overviews of the topic. Moreover, short communications and perspective articles are also welcome, offering insights into trends and future directions in this emerging field. Accordingly, this Special Issue aims to compile cutting-edge developments on new catalysts and processes along with theoretical discoveries that enlarge our knowledge of the underlying mechanisms.

In conclusion, as we face the challenges of growing energy demands and environmental degradation, developing advanced sustainable catalytic processes for biomass conversion gains paramount importance. The works in this Special Issue aim to present a significant step toward a future where renewable biomass-derived fuels will be fundamental to our energy economy. So, we are excited about the groundbreaking contributions that will help reach this goal.

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Author Contributions

The author did all the research work for this study.

Competing Interests

The author declares no conflict of interest.

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