

Special Issue

Biochar and the Circular Bioeconomy: Innovations in Biomass Utilisation

Message from the Guest Editors

The transition to a circular bioeconomy presents an unprecedented opportunity to reshape how biomass is utilised for sustainable resource management and climate resilience. Biochar—an increasingly versatile material derived from biomass pyrolysis—has emerged as a critical enabler in this transition, offering solutions for carbon sequestration, soil enhancement, water purification, energy production, and beyond. This Special Issue invites contributions exploring innovative roles of biochar in advancing circular bioeconomy principles. We seek contributions that address biochar's applications across sectors, as well as its integration into circular value chains, lifecycle impacts, policy frameworks, and technological advancements. Topics of interest include, but are not limited to, the following:

- Advanced biochar production methods and system integration.
- Biochar applications in soil health, carbon capture, and nutrient cycling.
- Biochar in waste valorisation, water treatment, and industrial use.
- Techno-economic and life cycle assessments of biochar pathways.
- Policy, governance, and business models enabling biochar-based circular solutions.

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Deadline for manuscript submissions

20 September 2026



Biomass

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CiteScore 4.2
Tracked for Impact Factor



mdpi.com/si/241083

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