

Special Issue

Synthesis, Characterization and Applications of Bio-Based Polymer Materials

Message from the Guest Editor

This Special Issue focuses on recent advances in the synthesis, characterization, and mechanical performance of bio-based polymer materials, providing a comprehensive overview of their potential and challenges in industrial and consumer applications. Topics covered include novel synthetic strategies for producing polymers from renewable feedstocks, advances in structural and physicochemical characterization techniques, and detailed studies of mechanical, thermal, and rheological properties that determine their applicability. Special emphasis is placed on the correlation between molecular architecture, processing conditions, and the resulting macroscopic properties of these materials. In addition, contributions explore composite and hybrid bio-polymers, additive manufacturing approaches, and aspects of biodegradability and recyclability, highlighting pathways toward circular material design. Collectively, the articles in this issue aim to bridge the gap between fundamental material science and practical engineering solutions, paving the way for next-generation sustainable polymers that combine performance with environmental responsibility.

Guest Editor

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Message from the Editor-in-Chief

Since its foundation in 2009, *Polymers* has developed into an internationally renowned, extremely successful open access journal. The editorial team and the editorial board dedicatedly combine open-access publishing and high-quality rigorous peer reviewing. The performance of the journal has proven this strategy to be well-suited and highly successful. This is reflected in the increasing impact factor of *Polymers*, the most recent one being 4.9.

I would like to invite you to contribute to the success of the journal by sending us your high quality research papers. We would be pleased to welcome you as one of our authors.

Editor-in-Chief

Prof. Dr. Alexander Böker

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