Special Issue

Natural Biopolymers for Biomedical Applications

Message from the Guest Editor

The search for sustainable alternatives to petroleum-derived products has accelerated research into the biosynthesis, design, and characterization of materials from natural resources. Biosynthetic approaches, particularly microbial fermentation and enzymatic catalysis, enable the conversion of natural feedstocks into bioplastics, nanocellulose, bioceramics, and bioactive compounds. Equally important is the role of advanced characterization techniques—ranging from spectroscopy and microscopy to thermal and surface analysis—in assessing morphology, crystallinity, porosity, and stability. These insights bridge the gap between biosynthesis and practical applications in fields such as drug delivery and tissue engineering. By integrating biotechnology, chemistry, and materials science, the development of natural-resource-based materials aligns closely with the principles of a circular economy and global sustainability goals. This Special Issue aims to highlight recent progress in biosynthetic strategies, innovative design approaches, and rigorous characterization methods, showcasing how renewable resources can inspire multifunctional systems for a greener and more resilient future.

Guest Editor

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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

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