

Special Issue

Transforming Waste into Value: Advances in Polymer Upcycling Chemistry for a Sustainable Future

Message from the Guest Editor

Polymer upcycling is a powerful tool for converting discarded plastics into high-value materials and chemicals, thus addressing the increasing environmental challenges presented by plastic pollution. While conventional recycling often results in material downcycling, upcycling offers the opportunity to enhance the performance, extend the lifecycle, and unlock new functionalities of materials through targeted chemical transformations. This Special Issue aims to highlight recent breakthroughs in polymer upcycling chemistry, including catalytic depolymerization, selective bond activation, and innovative monomer recovery techniques. These advances not only serve to mitigate plastic pollution but also create pathways for sustainable manufacturing, carbon footprint reduction, and integration into circular economy models. The featured studies will cover applications in materials science, energy storage, biomedicine, and commodity chemicals, underscoring the multidisciplinary impact of this rapidly evolving field. By reimagining plastic waste as a resource, polymer upcycling chemistry can facilitate the move towards a more resilient and sustainable materials future.

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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