Special Issue

Advances in Self-Healing Polymers

Message from the Guest Editor

Self-healing polymers have emerged as a transformative class of materials capable of autonomously repairing mechanical damage, mimicking biological systems such as human skin or plant tissues. This ability not only enhances material durability but also reduces waste, maintenance costs, and environmental impact, addressing critical challenges in sustainability and resource efficiency.

This Special Issue, Advances in Self-Healing Polymers, will highlight the latest scientific and technological progress in this dynamic field. We invite contributions exploring the following:

- Fundamental mechanisms: New healing chemistries, theoretical modeling, and in situ characterization;
- Material innovations: Hybrid systems, bioinspired designs, and nanocomposites.
- Applications: Energy storage, soft robotics, wearable devices, and sustainable packaging;
- Scalability and commercialization: Industrial processing, cost-benefit analysis, and lifecycle assessments.

By addressing both fundamental and applied challenges, we will accelerate the development of next-generation self-healing materials for a resilient and sustainable 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 4.7.

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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