

Special Issue

Mechanical Behavior of Polymer Materials and Its Applications

Message from the Guest Editor

The mechanical behavior of polymer materials is a cornerstone of advanced materials science, crucial for designing polymers used in structural, biomedical, aerospace, automotive, and defense industries.

Polymers show diverse mechanical responses—from viscoelasticity to shape memory and fracture mechanics—depending on molecular structure, processing, and environment.

This Special Issue offers a platform for advances in understanding, modeling, and applying mechanical behavior in solid polymers. Emphasis is on integrating theoretical, experimental, and computational methods to reveal the physics behind polymer deformation, failure, and time-dependent behavior across scales—from molecular to macroscopic.

Contributions on constitutive modeling, fracture and fatigue, molecular orientation, advanced mechanical testing, and finite element simulations are encouraged. Studies on practical applications like shape memory polymers and structural engineering components are also welcomed.

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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