

Special Issue

Mechanics of Polymer-Based Soft Materials

Message from the Guest Editor

Soft materials, including but not limited to polymers, elastomers, gels, rubber-like materials, biological tissues, and soft composites, are driving transformative advances in emerging technologies such as flexible electronics, biomedical devices, soft robotics, and adaptive metastructures. The rapid development of novel soft materials with extraordinary functionalities, coupled with discoveries of unique mechanical behaviors and mechanoresponsive phenomena, has spurred interdisciplinary efforts to establish reliable physical-mechanical models and predictive theories for soft materials and structures. Advances in computational materials science and mechanics, particularly AI-assisted approaches, are revolutionizing nearly all aspects of research on the mechanics of soft materials. This Special Issue aims to highlight cutting-edge experimental, theoretical, and computational advancements in soft material mechanics, emphasizing unresolved challenges in nonlinear mechanics, multi-phase/multi-physics coupling, failure mechanisms, and other critical issues, with a focus on integrating mechanics with materials science, and engineering.

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

Prof. Dr. Alexander Böker

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