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Special Issue Reprint

Polymer-Based Flexible Materials, 3rd Edition

Edited by: Jiangtao Xu and Sihang Zhang

This Special Issue Reprint presents a collection of recent advances in the design, fabrication, and application of polymer-based flexible materials. With the growing demand for wearable electronics, soft robotics, flexible sensors, and biomedical devices, polymer-based systems have emerged as key platforms due to their unique combination of lightweight nature, mechanical compliance, and processability.

This Reprint will bring together contributions that explore the synthesis of novel flexible polymers, the engineering of hierarchical structures, and the integration of functional fillers to achieve tailored mechanical, electrical, and optical properties. Particular emphasis is placed on strategies for enhancing flexibility, stretchability, and durability under deformation, as well as on the development of scalable manufacturing approaches. The Reprint also highlights emerging applications, including but not limited to flexible energy storage and conversion systems, electronic skins, implantable devices, and smart packaging. By compiling these contributions, we aim to provide a comprehensive overview of the current state of the field and to stimulate further innovation in polymer-based flexible materials.



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