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Special Issue Reprint

Innovative and Functionalized Polymers

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This Reprint collects selected contributions from the Special Issue dedicated to innovative and functionalized polymers, offering an updated overview of recent advances in polymer science and engineering. In recent years, significant progress has been achieved in the development of natural and synthetic polymers with enhanced mechanical, thermal, electrical, and surface properties, expanding their potential across multiple high-value applications. Modern strategies for polymer processing and modification include chemical functionalization, incorporation of nano- and micro-scale fillers, fabrication of hybrid and composite systems, and advanced manufacturing techniques that enable precise control over morphology and structural architecture. The possibility of tailoring composition, porosity, interface properties, and three-dimensional organization has paved the way for next-generation materials designed for flexible electronics, sensing technologies, energy systems, soft devices, and biomedical applications. This Reprint highlights interdisciplinary research focused on the design, development, characterization, and practical implementation of advanced polymer-based materials. It provides a comprehensive perspective on current trends and emerging directions in the field, emphasizing multifunctionality, performance optimization, and application-driven innovation.

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