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Special Issue Reprint

Advanced Stimuli-Responsive Polymer Composites

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This Reprint compiles original research articles from the Special Issue of *Polymers* titled "Advanced Stimuli-Responsive Polymer Composites", highlighting the rapid progress in polymer-based materials that actively respond to external stimuli such as temperature, pH, light, or mechanical stress. These "smart" composites enable novel applications in soft robotics, biomedicine, sensing, and adaptive surfaces.

The Special Issue aimed to bridge polymer chemistry, materials science, and engineering, with a focus on understanding stimuli–response mechanisms and translating them into functional materials. Contributions included thermo-chromic polymer mixtures, bio-hydrogels with photonic nano-chains, hybrid dielectric systems, and liquid crystalline elastomer composites. Both experimental and computational approaches were used to investigate how micro- and nanostructures determine macroscopic behavior under dynamic conditions.

This collection is intended for researchers in polymer science and responsive materials design. By presenting interdisciplinary insights—from synthesis and processing to in situ characterization and device integration—it offers a concise yet diverse overview of current advances.

I thank all contributing authors, anonymous reviewers, and the *Polymers* editorial team. This Reprint aims to stimulate future research and collaboration in this exciting and fast-moving field.

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