

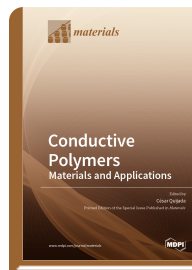
Special Issue Reprint

Conductive Polymers

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The pioneering work by Nobel Prize Laureates Heeger, MacDiarmid, and Shirakawa marked the birth of conductive polymers, a new family of revolutionary organic materials at the boundaries between classic plastics, metals, and semiconductors. Since then, a host of chemically diverse conducting polymeric structures has been devised with fascinating optical, electrical, magnetic, and redox properties that can be tuned using easy chemical/electrochemical doping. In recent decades, the combination and blend of conductive polymers with other materials families (e.g., carbon nanomaterials, metal nanoparticles or oxide nanostructures, common polymers, and resins) fostered the advent of a new generation of hybrid multifunctional composites with enhanced properties and high potential for present and near-future everyday life applications, ranging from photovoltaics, OLEDs, smart windows and garments, plastic batteries for sensors, and intelligent actuators. In this book, we compile some of the latest advances in the field, covering both old issues and new examples emphasizing emerging applications in biomedical science, healthcare, separation science, and water pollution abatement.

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