

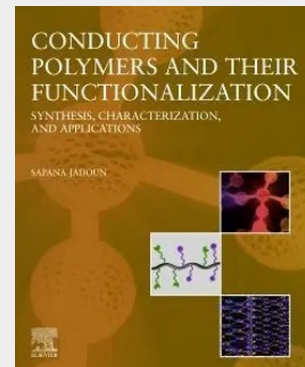
## Conducting Polymers and Their Functionalization

Synthesis, Characterization, and Applications

Conducting Polymers and their Functionalization: Synthesis, Characterization, and Applications offers a comprehensive guide on the synthesis techniques, characterization methods, functionalization approaches, and diverse applications of conducting polymers. The book begins with an overview of different types of conductive polymers, their electrical properties, and conductivity mechanisms. It then progresses to strategies for functionalization, including chemical, doping, hybridization, copolymerization, and post-polymerization modifications. Further sections explore various chemical synthesis approaches, detailing their resulting properties and discussing the advantages and disadvantages of each technique. Case studies on potential applications are also included to enhance the learning process. The book features a dedicated chapter on the applications of functionalized conducting polymers in several fields, from water treatment to bioelectronics, environmental sensing, imaging, and optoelectronics. As a valuable resource to researchers, polymers scientists, engineers, and advanced students working with conductive polymers, the book covers present challenges and future research directions, highlighting potential applications of functionalized conducting polymers.

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