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Titolo	Smart Polymer Nanocomposites : Energy Harvesting, Self-Healing and Shape Memory Applications / / edited by Deepalekshmi Ponnamma, Kishor Kumar Sadasivuni, John-John Cabibihan, Mariam Al-Ali Al-Maadeed
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Nota di contenuto	Polymer Composites: Perspectives for Energy Harvesting, Self-healing and Shape Memory -- Energy harvesting with crystalline polymer composites: cellulose, and PVDF composites -- Energy harvesting using conductive polymer composites -- Application of poly (3-hexylthiophene) P3HT composites for energy harvesting -- Energy harvesting with poly(fluorene-co-thiophene) and perflouro polymer composites -- Elastomer composites in energy harvesting: poly (dimethylsiloxane), polyurethane composites -- Poly--benzyl-L-glutamate, poly(methyl methacrylate) composites and their application for energy harvesting -- Self-healing materials from elastomeric

composites -- Self-healing materials from crystalline polymer composites -- Thermoplastic polymer composites as self-healing materials -- Application of conductive polymer composites as self-healing materials -- Self-healing of biopolymers and their composites -- Shape memory materials from elastomeric composites -- Conductive polymer composites: Perspectives as shape memory materials -- Thermoplastic polymer composites as shape memory materials -- Crystalline polymer composites as shape memory materials.

Sommario/riassunto

This book covers smart polymer nanocomposites with perspectives for application in energy harvesting, as self-healing materials, or shape memory materials. The book is application-oriented and describes different types of polymer nanocomposites, such as elastomeric composites, thermoplastic composites, or conductive polymer composites. It outlines their potential for applications, which would meet some of the most important challenges nowadays: for harvesting energy, as materials with the capacity to self-heal, or as materials memorizing a given shape. The book brings together these different applications for the first time in one single platform. Chapters are ordered both by the type of composites and by the target applications. Readers will thus find a good overview, facilitating a comparison of the different smart materials and their applications. The book will appeal to scientists in the fields of chemistry, material science and engineering, but also to technologists and physicists, from graduate student level to researcher and professional. .