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Nota di contenuto	From the Contents: Introduction to the EAP Field -- Overview and classification of EAPs -- History of EAPs -- Polymer Gels -- Polymer gels as EAPs: fundamentals -- Ionic Polymer-metal Composites -- IPMCs as EAPs: fundamentals -- Conducting polymers as EAPs: fundamentals and materials -- Conducting polymers as EAPs: device configurations -- Electroresponsive Carbon Based Materials -- Electrochemically-driven carbon based materials: fundamentals and device configurations -- Piezoelectric and Electrostrictive Polymers.-

Sommario/riassunto

This book provides a comprehensive and clearly structured introduction to the broad field of transducers and artificial muscles based on electromechanically active polymers (EAP), the goal being to present basic concepts and established knowledge in an accessible form. Its tutorial style and structure make this book an easy-to-use reference guide for students, researchers and practitioners alike. Different sections cover all categories of EAP materials, with separate chapters addressing the fundamentals, materials, device configurations, models, and applications, as well as operative guidelines on how to get started in experimentation with electromechanically active polymers. The functional and structural properties of EAP transducers are described and explained, and their broad range of applications in optics, acoustics, haptics, fluidics, automotive systems, robotics, orthotics, medical tools, artificial organs and energy harvesting is illustrated. Prepared under the aegis of the 'European Scientific Network for Artificial Muscles', the book is the product of extensive collaborative efforts led by European researchers and involving respected experts from around the globe.
