



Electroactive Polymer (EAP) Actuators as Artificial Muscles: Reality, Potential, and Challenges, Second Edition (SPIE Press Monograph Vol. PM136)

By Yoseph Bar-Cohen

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In concept and execution, this book covers the field of EAP with careful attention to all its key aspects and full infrastructure, including the available materials, analytical models, processing techniques, and characterization methods. In this second edition the reader is brought current on promising advances in EAP that have occurred in electric EAP, electroactive polymer gels, ionomeric polymer-metal composites, carbon nanotube actuators, and more.

Contents

- Preface
- EAP History, Current Status, and Infrastructure
- Natural Muscle as a Biological System
- Metrics of Natural Muscle Function
- Electric EAP
- Electroactive Polymer Gels
- Ionomeric Polymer-Metal Composites
- Conductive Polymers
- Carbon Nanotube Actuators: Synthesis, Properties, and Performance
- Molecular Scale Electroactive Polymers
- Computational Chemistry

- Modeling and Analysis of Chemistry and Electromechanics
- Electromechanical Models for Optimal Design and Effective Behavior of Electroactive Polymers
- Modeling IPMC for Design of Actuation Mechanisms
- Processing and Fabrication Techniques
- Methods of Testing and Characterization
- Application of Dielectric Elastomer EAP Actuators
- Biologically Inspired Robots
- Applications of EAP to the Entertainment Industry
- Haptic Interfaces Using Electroheological Fluids
- Shape Control of Precision Gossamer Apertures
- EAP Applications, Potential, and Challenges
- Index

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Review

"...a delightful book dealing with one of the hottest topics in biomedical engineering...It is thorough in every way...." --*Steven S. Saliterman, MD, FACP, Chief of Medicine Methodist Hospital; Department of Biomedical Engineering, University of Minnesota*

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