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Conclusions; References; 2 Bio-Responsive Hydrogels for Biomedical Applications; 2.1 Introduction; 2.2 Chemical Hydrogels; 2.3 Physical Hydrogels; 2.4 Defining Bio-Responsive Hydrogels
2.5 Bio-Responsive Chemical Hydrogels2.5.1 Actuation Based on Changing the Cross-Linking Density; 2.5.2 Actuation Based on Changes in Electrostatic Interactions; 2.5.3 Actuation Based on Conformational Changes; 2.6 Bio-Responsive Physical Hydrogels; 2.6.1 Enzyme-Responsive Physical Hydrogels; 2.7 Electroactive Chemical Hydrogels; 2.8 Conclusion; References; 3 Stimuli-Responsive and 'Active' Polymers in Drug Delivery; 3.1 Introduction; 3.2 Drug Delivery: Examples, Challenges and Opportunities for Polymers; 3.2.1 Oral Drug Delivery Systems; 3.2.2 Parenteral Drug Delivery
3.2.3 Topical and Transdermal Drug Delivery3.2.4 Delivery Challenges for Biomolecular Drugs and Cell Therapeutics; 3.2.5 Peptides and Proteins; 3.2.6 Nucleic Acids; 3.2.7 Cell Delivery; 3.3 Emerging State-of-the-Art Mechanisms in Polymer Controlled Release Systems; 3.3.1 Technologies for Controlled Drug Release; 3.3.2 Polymer-Drug Conjugates; 3.3.3 Polymer-Protein Conjugates; 3.3.4 Polymer-Nucleic Acid Conjugates; 3.3.5 Polymer-Nucleic Acid Complexes; 3.4 Responsive or 'Smart' Polymers in Drug Delivery; 3.4.1 Soluble Smart Polymers; 3.4.2 Responsive Polymer-Drug Conjugates
3.4.3 Responsive Polymer-Protein Conjugates3.4.4 Responsive Polymers for DNA Delivery; 3.5 Recent Highlights of Actuated Polymers for Drug Delivery Applications; 3.6 Conclusions and Future Outlook; References; 4 Thermally Driven Hydrogel Actuator for Controllable Flow Rate Pump in Long-Term Drug Delivery; 4.1 Introduction; 4.2 Materials and Methods; 4.3 Hydrogel Actuator; 4.3.1 Thermo-Mechanical Gel Dynamics; 4.3.2 Experimental Results; 4.4 Pump Functioning; 4.5 Conclusion; References; SECTION II IONIC POLYMER-METAL COMPOSITES (IPMC); 5 IPMC Actuators: Fundamentals; 5.1 Introduction 5.2 Fabrication

Sommario/riassunto

Giving fundamental information on one of the most promising families of smart materials, electroactive polymers (EAP) this exciting new titles focuses on the several biomedical applications made possible by these types of materials and their related actuation technologies. Each chapter provides a description of the specific EAP material and device configuration used, material processing, device assembling and testing, along with a description of the biomedical application. Edited by well-respected academics in the field of electroactive polymers with contributions from renowned international

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	Commercial Uses; Grid-like Street Networks; Traffic Calming; Closely Spaced Shade Trees; Little Dead Space; Nearby Parks and Other Public Spaces; Small-Scale Buildings (or Articulated Larger Ones); Pedestrian-Scale Lighting; Attractive Transit Facilities; 5 Checklist of Worthwhile Additions; Landmarks; Street Walls; Functional Street Furniture; Coherent, Small-Scale Signage Special PavementPublic Art; Water Features; Outdoor Dining; Underground Utilities; 6 Conclusion; Summary; References
Sommario/riassunto	"Explaining how to design spaces for pedestrians while also accommodating transit needs, this book is an excellent reference for students, public sector planners and officials, and private sector designers and developers seeking to make places more pedestrian- and transit-friendly. Written by a noted expert on pedestrian design and planning, this handbook contains examples of zoning codes from different localities"--