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| Titolo | Stimuli-Responsive Interfaces : Fabrication and Application / / edited by Takeshi Kawai, Mineo Hashizume |
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| Edizione | [1st ed. 2017.] |
| Descrizione fisica | 1 online resource (VIII, 313 p. 193 illus., 122 illus. in color.) |
| Disciplina | 620.44 |
| Soggetti | Materials—Surfaces<br>Thin films<br>Chemistry, Physical and theoretical<br>Polymers<br>Nanotechnology<br>Nanochemistry<br>Surfaces and Interfaces, Thin Films<br>Physical Chemistry<br>Polymer Sciences |
| Lingua di pubblicazione | Inglese |
| Formato | Materiale a stampa |
| Livello bibliografico | Monografia |
| Nota di bibliografia | Includes bibliographical references at the end of each chapters. |
| Nota di contenuto | Introduction -- Photo-Induced Demulsification -- Stimuli-Responsible Viscoelastic Surfactant Solutions -- Stimuli-Responsive Charge-Free Reverse Micelles in Non-Aqueous Media.-Stimuli-Responsive Self-Healing Viscoelastic Gels.-Stimuli-Responsive Soft-Template Functions of Novel Amphiphiles Having Amidoamine Groups -- Photoresponsive Gold Clusters -- Stimuli-Responsive Structure Control of Self-Assembled Gold Nanoparticles -- Supramolecular Control of Amphiphile-Capped Coordination Nano-Architecture -- Langmuir and Langmuir-Blodgett Monolayers Having Photo-Responsibilities -- Stimuli-Responsive Polymer Micelles -- Design of Biomimetic Interfaces at the Dendrimer Periphery and Their Applications -- Stimuli-Responsive Polymer Materials for Creation of Biointerfaces -- Stimuli-Responsive Adhesion for 3D Fabrication of Hydrogels -- Media-Responsive Swelling and Material Release Properties of Polysaccharide Composite Films -- Stimuli-Responsive Thin Films Composed of |

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| | Photochromic Compounds to Construct Surface Relief -- Electric Field-Induced Arrangement of Colloidal Materials in Microfluidic Devices. |
| Sommario/riassunto | This book introduces recent progress in stimuli-responsive interfaces constructed on colloidal materials such as micelles and vesicles and on solid material surfaces. There is discussion of the effect of stimuli such as light, heat, pH, and electric field on changes in the morphology of the molecules at the interfaces and that of colloidal materials. The changes in the properties, such as gelation ability, dispersibility, and emulsification ability, of the resultant bulk materials containing these colloidal materials or those of the solid material are also covered. In addition, design criteria for high sensitivity, quick responsiveness, and high reversibility are presented. In each author’s original system, the correlations between molecular-level responses and bulk functional responses are described as well. This book serves as an excellent guide to designing and fabricating novel, functional, eco-friendly stimuli-responsive interfaces and related materials. |