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| Descrizione fisica      | 1 online resource (339 p.)  |
| Disciplina              | 620.00420157419   |
| Soggetti                | Bioengineering<br>Biomedical engineering<br>Biomedical materials<br>Biologicals<br>Sterilization<br>Coatings  |
| Lingua di pubblicazione | Inglese   |
| Formato                 | Materiale a stampa  |
| Livello bibliografico   | Monografia  |
| Note generali           | Description based upon print version of record.   |
| Nota di bibliografia    | Includes bibliographical references at the end of each chapters.  |
| Nota di contenuto       | Front Cover; Dedication; Contents; Preface; Acknowledgment; Chapter 1 - Regulatory Requirements for Medical Devices, Including Combinations with Biological Products or Drugs as an Integral Part; Chapter 2 - Terminal Radiation Sterilization of Combination Products; Chapter 3 - Polyelectrolyte Multilayers as Functional Coatings for Controlled Biomolecular Interactions; Chapter 4 - Polyelectrolyte Multilayers as Functional Coatings for Controlled Biomolecular Interactions; Chapter 5 - Surface Characteristics and Biofilms; Chapter 6 - Antimicrobial Implant Coating Chapter 7 - Small-Angle X-Ray Spectroscopy as a Method to Monitor the Three-Dimensional Structure of Immobilized Biomolecules on Medical Device Scaffolds during Production Chapter 8 - Aptamers as Biomimetic Surface Coatings for Blood-Contacting Implants; Chapter 9 - Microneedles and Nanopatches for Transdermal Vaccination; Chapter 10 - Autoantibodies as Biomarkers for Disease Diagnosis; Chapter 11 - Biofunctionalized Wound Dressings for Advanced Wound Care; Chapter 12 - Circulating Tumor Cell Trapping Devices |

**Sommario/riassunto**

Successful biofunctional surface engineering will determine the future of medical devices such as orthopedic implants, stents, catheters, vaccine scaffolds, wound dressings, and extracorporeal circulation devices. Moreover, the biosensor and diagnostic chip technology will evolve rapidly due to the growing medical need for personalized medicine. A major drawback in these technologies is the need for terminally sterilized products. However, novel and safe technologies, including coupling, stabilization, and protection of effector molecules, enable terminal sterilization without functional loss.