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Descrizione fisica	1 online resource (XXII, 338 p. 204 illus., 129 illus. in color.)
Disciplina	610.28
Soggetti	Biomaterials Biomedical engineering Ceramics Glass Composite materials Polymers Metals Medicine Biomedical Engineering and Bioengineering Ceramics, Glass, Composites, Natural Materials Polymer Sciences Metallic Materials Biomedicine, general
Lingua di pubblicazione	Inglese
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Nota di contenuto	Introduction -- Properties of Solids -- Metals -- Ceramics -- Polymers as Biomaterials -- Carbon Derived Materials -- Building Blocks of The Human Body -- Composites as Biomaterials -- Fundamentals of Human Biology and Anatomy -- Tissue-Biomaterial Interactions -- Biocompatibility -- Hemocompatibility -- Sterilization of Biomaterials -- Soft Tissue Applications -- Hard Tissue Implants -- Blood Interfacing Applications -- Controlled Release Systems -- Tissue Engineering and Regenerative Medicine -- Nano and Microarchitecture of Biomaterial Surfaces.
Sommario/riassunto	This text for advanced undergraduate and graduate students covers the fundamental relationships between the structure and properties of

materials and biological tissues. The successful integration of material and biological properties, shape, and architecture to engineer a wide range of optimized designs for specific functions is the ultimate aim of a biomaterials scientist. Relevant examples illustrate the intrinsic and tailored properties of metal, ceramic, polymeric, carbon-derived, composite, and naturally derived biomaterials. Fundamentals of Biomaterials is written in a single voice, ensuring clarity and continuity of the text and content. As a result, the reader will be gradually familiarized with the field, starting with materials and their properties and eventually leading to critical interactions with the host environment. Classical and novel examples illuminate topics from basic material properties to tissue engineering, nanobiomaterials, and guided tissue regeneration. This comprehensive and engaging text: integrates materials and biological properties to understand biomaterials function and design provides the basics of biological tissue components and hierarchy includes recent topics from tissue engineering and guided tissue regeneration to nanoarchitecture of biomaterials and their surfaces contains perspectives/case studies from widely-recognized experts in the field features chapter-ending summaries to help readers to identify the key, take-home messages.
