Record Nr. UNINA9910298632003321 Advances in Metallic Biomaterials: Processing and Applications // **Titolo** edited by Mitsuo Niinomi, Takayuki Narushima, Masaaki Nakai Pubbl/distr/stampa Berlin, Heidelberg:,: Springer Berlin Heidelberg:,: Imprint: Springer, 2015 **ISBN** 3-662-46842-5 Edizione [1st ed. 2015.] Descrizione fisica 1 online resource (285 p.) Collana Springer Series in Biomaterials Science and Engineering, , 2195-0644; Disciplina 610.28 Soggetti Biomedical materials Biomedical engineering Metals **Orthopedics Biomaterials** Biomedical Engineering and Bioengineering Metallic Materials Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Description based upon print version of record. Note generali Nota di bibliografia Includes bibliographical references. Nota di contenuto Part I Processing Techniques -- Additive Manufacturing Technology for Orthopedic Implants -- Metal Injection Molding (MIM) Processing --Application of Smart Hot Forging Technique in Producing Biomedical Co-Cr-Mo Artificial Implants -- Electroforming as a New Method for Fabricating Degradable Pure Iron Stent -- Part II Surface Modification --Bioactive Ceramic Coatings -- Bio functionalization of Metals with Polymers -- Adhesive Strength of Bioactive Surface Layer -- Surface Improvement for Biocompatibility of Biomedical Ti alloy by Dealloying in Metallic Melt -- Functionally Graded Metallic Biomaterials -- Part III Applications -- Metallic Biomaterials in Orthopaedic Surgery -- Metallic Biomaterials in Orthopaedic Surgery -- Dental Metallic Materials. Sommario/riassunto This book covers the latest advances in processing techniques for producing metallic biomaterial implants. It also discusses recent developments in surface modifications using bioactive ceramics and blood-compatible polymers, as well as the adhesive strength of

bioactive surface layers, before introducing the practical applications of metallic biomaterials in the fields of surgery and dentistry. As such, the book provides an essential reference guide for researchers, graduate students and clinicians working in the fields of materials, surgery, dentistry, and mechanics. Mitsuo Niinomi, PhD, D.D.Sc., is a Professor at the Institute for Materials Research, Tohoku University, Japan Takayuki Narushima, PhD, is a Professor at the Department of Materials Processing, Tohoku University, Japan Masaaki Nakai, PhD, is an Associate Professor at the Institute for Materials Research, Tohoku University, Japan.