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Nota di contenuto	Clinical Applications of UHMWPE -- Highly Crosslinked UHMWPE -- Oxidation Mechanisms of UHMWPE -- Stablization of Highly Crosslinked UHMWPE -- Natural Polyphnol Stabilized Highly Crosslinked -- High Temperature Melted, Crosslinked, and Stabilized UHMWPE -- Effect of Biomolecules on Wear and Oxidation of UHMWPE Components -- Drug-loaded UHMWPE to Inhibit Wear Particle-induced Osteolysis—Processing, Characterizing and Biological Evaluation -- Biomechanics in Artificial Joints -- Tribology in Artificial Joints -- Perspective of Next Generation Polymer Materials for Joint Implants.
Sommario/riassunto	This book presents a comprehensive, state-of-the-art review of the

latest progresses in UHMWPE biomaterials, which has been critical for the performance and longevity of joint implants. Oriented by clinical challenges to UHMWPE-based joint implants, it introduces the processing, crosslinking, structural manipulation, oxidation mechanism, stabilization, drug delivery, and wear, as well as clinical performance, biomechanics, and simulated studies of joint implant based on UHMWPE with low wear, which are aimed to tackle or minimize the adverse effect related to wear and wear debris. These contributions provide fundamentals of chemistry and physics of UHMWPEs to help understand the clinical performances of UHMWPE based joint implants. Perspectives to next generation UHMWPE to meet the unmet challenges in clinical use are included.