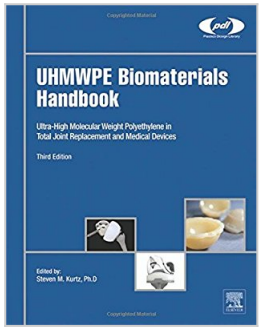

UHMWPE Biomaterials Handbook, Third Edition: Ultra High Molecular Weight Polyethylene in Total Joint Replacement and Medical Devices (Plastics Design Library)

By Steven M. Kurtz Ph.D.

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UHMWPE Biomaterials Handbook, Third Edition, describes the science, development, properties, and application of ultra-high molecular weight polyethylene (UHMWPE) used in artificial joints. UHMWPE is now the material of choice for joint replacements, and is increasingly being used in fibers for sutures. This book is a one-stop reference for information on this advanced material, covering both introductory topics and the most advanced developments.

The third edition adds six new chapters on a range of topics, including the latest in anti-oxidant technologies for stabilizing HXLPE and up-to-date systematic reviews of the clinical literature for HXLPE in hips and knees. The book chronicles the rise and fall of all-metal hip implants, as well as the increased use of ceramic biomaterials and UHMWPE for this application. This book also brings orthopedic researchers and practitioners up to date on the stabilization of UHMWPE with antioxidants, as well as the choices of antioxidant available for practitioners.

The book also thoroughly assesses the clinical performance of HXLPE, as well as alternative bearings in knee replacement and UHMWPE articulations with polyether ether ketone (PEEK).

Written and edited by the top experts in the field of UHMWPE, this is the only state-of-the-art reference for professionals, researchers, and clinicians working with this material.

- The only complete reference for professionals, researchers, and clinicians working with ultra-high molecular weight polyethylene biomaterials technologies for joint replacement and implants
- New edition includes six new chapters on a wide range of topics, including the clinical performance of highly crosslinked polyethylene (HXLPE) in hip and

knee replacement, an overview of antioxidant stabilization for UHMWPE, and the medical applications of UHMWPE fibers
- State-of-the-art coverage of the latest UHMWPE technology, orthopedic applications, biomaterial characterization, and engineering aspects from recognized leaders in the field

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Editorial Review

About the Author
Dr. Kurtz has been researching ultra-high molecular weight polyehtylene(UHMWPE) for use in orthopedics for over 10 years. He has published dozens of papers and several book chapters related to UHMWPE used in joint replacement. He has pioneered the development of new test methods for the material in orthopedics. Dr. Kurtz has authored national and international standards for medical upgrade UHMWPE.

As a principle engineer at Exponent, an international engineering and scientific consulting company, his research on UHMWPE is supported by several major orthopedic manufacturers. He has funding from the National Institutes for Health to stdy UHMWPE changes after implanatation in the body, as well as to develop new computer-based tools to predict the performance of new UHMWPE materials.

Dr. Kurtz is the Director of an orthopedic implant retrieval program in Philadelphia which is affiliated with Drexel University and Thomas Jefferson University. He teaches classes on the performance of orthopedic polymers (including UHMWPE) at Drexel, Temple, and Princeton Universities.

Users Review

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