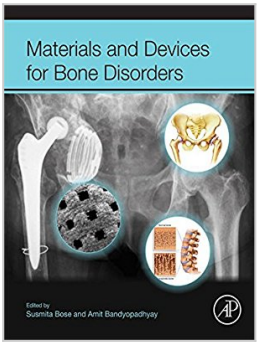

Materials and Devices for Bone Disorders

From Academic Press

Materials and Devices for Bone Disorders From Academic Press

Materials for Bone Disorders is written by a cross-disciplinary team of research scientists, engineers, and clinicians and bridges the gap between materials science and bone disorders, providing integrated coverage of biomaterials and their applications. The bioceramics, biopolymers, composites, and metallic materials used in the treatment of bone disorders are introduced, as are their interactions with cells, biomolecules, and body tissues. The main types of bone disorder and disease are covered including osteoporosis, spinal injury, load bearing joint diseases, bone cancer, and forms of cranio-maxillofacial disorders.

Bone disorders are common across all ages. Various forms of bone disorders can change the lifestyle of otherwise normal and healthy people. With the development of novel materials, many forms of bone disorders are becoming manageable, allowing people to lead a fairly normal life. Specific consideration is given to areas where recent advances are enabling new treatments, such as the use of resorbable ceramics in bone tissue engineering and drug delivery, newer polymer-based implants in load-bearing contexts, and engineering biomaterials surfaces including modifying surface chemistry. Ethical and regulatory issues are also explored.

- Explores biomaterials for bone repair and related applications in orthopedics and dentistry in a clinical context
- Introduces biomaterials applications in the context of specific diseases, bone disorders, and theraputic contexts
- Includes input from a world-class team of research scientists, engineers, and clinicians
- Covers the main types of bone disorder and disease including osteoporosis, spinal injury, load bearing joint diseases, bone cancer, and forms of cranio-maxillofacial disorders

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Editorial Review

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Susmita Bose is a Professor in the School of Mechanical and Materials Engineering, an affiliate professor in the Department of Chemistry at Washington State University (WSU). In 2004, Dr. Bose received the prestigious Presidential Early Career Award for Scientist and Engineers (PECASE, the highest honor given to a young scientist by the US President at the White House) award from the National Science Foundation. Dr. Bose was named as a “Kavli fellow” by the National Academy of Sciences. In 2009, she received the prestigious Schwartzwalder-Professional Achievement in Ceramic Engineering (PACE) Award, and in 2014 Richard M. Fulrath Award, which is an international award given to one academician in the US annually (below age 45), from the American Ceramic Society. Dr. Bose is editorial board member for several international journals, including Acta Biomaterialia , Journal of the American Ceramic Society, Journal of Materials Chemistry B, International Journal of Nanomedicine and Additive Manufacturing. Dr. Bose has published over 200 technical papers with ~ 5000 citations, “h” index 40. Dr. Bose is a fellow of the American Institute for Medical and Biological Engineering (AIMBE) and the American Ceramic Society (ACerS).

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