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Titolo	Spine technology handbook [[electronic resource] /] / Steven M. Kurtz, Avram Allan Edidin (eds.)
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Nota di contenuto	Front cover; Title page; Copyright page; Table of contents; Contributors; Preface; 1: The Basic Tools and Terminology of Spine Treatment; 1.1 Introduction; 1.2 Which Way Is Up?; 1.3 The Spine; 1.4 Overview of the Handbook; 1.5 Acknowledgments; 1.6 References; 2: Synthetic Biomaterials for Spinal Applications; 2.1 Introduction; 2.2 Mechanical Properties and Mechanical Testing; 2.3 Metals and Metal Alloys; 2.4 Ceramics; 2.5 Polymers; 2.6 Composites; 2.7 Biological Effects; 2.8 Biocompatibility Testing; 2.9 Summary and Conclusions; 2.10 References 3: Structure and Properties of Soft Tissues in the Spine3.1 Introduction; 3.2 Intervertebral Discs; 3.3 Intervertebral Disc Aging and Degeneration; 3.4 Ligaments; 3.5 Spinal Cord; 3.6 Conclusions; 3.7 References; 3.8 Review Questions; 4: Biomechanics of Vertebral Bone; 4.1 Introduction; 4.2 Trabecular Bone; 4.3 Mechanical Behavior of the Vertebral Body; 4.4 Noninvasive Vertebral Strength Assessment; 4.5 Acknowledgments; 4.6 References; 5: Musculature Actuation and Biomechanics of the Spine; 5.1 Spine Muscles; 5.2 Spinal Loading

Estimation Techniques; 5.3 Spinal Loads During Various Activities
5.4 References
6: Spine Disorders: Implications for Bioengineers; 6.1 Introduction; 6.2 Scoliosis; 6.3 Osteoporosis; 6.4 Cancer: Metastatic Spine Tumor; 6.5 Rheumatoid Arthritis; 6.6 Trauma: Whiplash Injury; 6.7 References; 7: Historical Review of Spinal Instrumentation for Fusion: Rods, Plates, Screws, and Cages; 7.1 Thoraco Lumbar and Lumbo-Sacral; 7.2 Anterior Instrumentation; 7.3 Intervertebral Body Cages: Cervical and Lumbar; 7.4 Cervical; 7.5 Summary; 7.6 Acknowledgments; 7.7 References; 8: Clinical Performance of Rods, Plates, Screws, and Cages; 8.1 Introduction
8.2 Anterior Applications
8.3 Posterior Systems: Rods and Screws; 8.4 Intervertebral Body Devices: Cages; 8.5 Conclusions; 8.6 Acknowledgments; 8.7 References; 9: Biologics to Promote Spinal Fusion; 9.1 Introduction; 9.2 Osteoinductive Bone Graft Substitutes; 9.3 Bone Morphogenetic Proteins; 9.4 Demineralized Bone Matrix; 9.5 DBM: Pre-clinical Studies; 9.6 DBM: Clinical Investigations; 9.7 rhBMP-7 (rhOP-1): Preclinical Studies; 9.8 rhBMP-7 (rhOP-1): Clinical Investigations; 9.9 rhBMP-2 (INFUSE): Pre-clinical Studies; 9.10 rhBMP-2 (INFUSE): Clinical Investigations; 9.11 Calcium Sulfate
9.12 Hydroxyapatite
9.13 Tricalcium Phosphates; 9.14 Biphasic Calcium Phosphate (BCP); 9.15 Calcium Phosphate/Collagen Composite Matrices; 9.16 Conclusions; 9.17 References; 10: Nucleus Replacement of the Intervertebral Disc; 10.1 Introduction; 10.2 Intervertebral Disc; 10.3 Degenerative Disc Disease: Etiology; 10.4 Current Treatments for Degenerative Disc Disease; 10.5 Total Disc Replacement; 10.6 Nucleus Pulposus Replacement; 10.7 Historical Design Perspective; 10.8 Recent Design Concepts; 10.9 Future Directions; 10.10 References; 11: Total Disc Arthroplasty; 11.1 Introduction
11.2 Pioneers of Total Disc Arthroplasty

Sommario/riassunto

Over the past decade, there has been rapid growth in bioengineering applications in the field of spine implants. This book explains the technical foundation for understanding and expanding the field of spine implants, reviews the major established technologies related to spine implants, and provides reference material for developing and commercializing new spine implants. The editors, who have a track record of collaboration and editing technical books, provide a unified approach to this topic in the most comprehensive and useful book to date. Related website provides the latest info

2. Record Nr.	UNINA9910707439303321
Autore	Adkins H. E., Jr.
Titolo	Spent fuel transportation package response to the Baltimore tunnel fire scenario : draft report for comment / / prepared by H.E. Adkins, Jr., J.M. Cuta, B.J. Koeppel
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