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Copper and Copper Alloys
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Metallurgy for the Non-Metallurgist, Second Edition
Fundamentals of Laser Powder Bed Fusion of Metals
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Handbook of Residual Stress and Deformation of Steel
Metals Handbook. Vol. 7
Aluminum and Aluminum Alloys
Science and Technology
Metallography and Microstructure in Ancient and Historic Metals

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ASM Handbook CRC Press
This handbook is a comprehensive guide to the selection and applications of copper and copper alloys, which constitute one of the largest and most diverse families of engineering materials. The handbook includes all of the essential information contained in the ASM Handbook series, as well as important reference information and data from a wide variety of ASM publications and industry sources.
Metals Reference Book ASM International
The 10,000 entries (arranged from A to Z) are supplemeted by hundreds of figures (approximately 700) & tables (more than 150) that clearly demonstrate the principles & concepts behind important manufacturing processes, illustrate the important structures, or provide representative compositional & property data for a wide variety of ferrous & nonferrous materials, plastics, ceramics, composites (resin-metal-carbon-&-cermaic-matrix) & adhesives. "Technical Briefs" provide encyclopedic-type coverage for some 64 key material groups. Each Technical Brief contains a "Recommended Reading" list to guide the user to additional information. Published by ASM International (tm), Materials Park, OH 44073.
Powder Metallurgy. Volume 7 Getty Publications
The 2015 edition of the volume on Powder Metallurgy focuses on conventional powder metallurgy and includes a new section on metal injection molding. The newly developed handbook format is aimed at simplifying the understanding of process and property relationships by treating each metal/alloy family in individual divisions.
Powder Metallurgy Stainless Steels CRC Press
UHMWPE Biomaterials Handbook describes the science, development, properties and application of of ultra-high molecular weight polyethylene (UHMWPE) used in artificial joints. This material is currently used in 1.4 million patients around the world every year for use in the hip, knee, upper extremities, and spine. Since the publication of the 1st edition there have been major advances in the development and clinical adoption of highly crosslinked UHMWPE for hip and knee replacement. There has also been a major international effort to introduce Vitamin E stabilized UHMWPE for patients. The accumulated knowledge on these two classes of materials are a key feature of the 2nd edition, along with an additional 19 additional chapters providing coverage of the key engineering aspects (biomechanical and materials science) and clinical/biological performance of UHMWPE, providing a more complete reference for industrial and academic materials specialists, and for surgeons and clinicians who require an understanding of the biomaterials properties of UHMWPE to work successfully on patient applications. The UHMWPE Handbook is the comprehensive reference for professionals, researchers, and clinicians working with biomaterials technologies for joint replacement New to this edition: 19 new chapters keep readers up to date with this fast moving topic, including a new section on UHMWPE biomaterials; highly crosslinked UHMWPE for hip and knee replacement; Vitamin E stabilized

UHMWPE for patients; clinical performance, tribology an biologic interaction of UHMWPE State-of-the-art coverage of UHMWPE technology, orthopedic applications, biomaterial characterisation and engineering aspects from recognised leaders in the field

An Integrated Approach John Wiley & Sons

Annotation Examines the factors that contribute to overall steel deformation problems. The 27 articles address the effect of materials and processing, the measurement and prediction of residual stress and distortion, and residual stress formation in the shaping of materials, during hardening processes, and during manufacturing processes. Some of the topics are the stability and relaxation behavior of macro and micro residual stresses, stress determination in coatings, the effects of process equipment design, the application of metallo- thermo-mechanic to quenching, inducing compressive stresses through controlled shot peening, and the origin and assessment of residual stresses during welding and brazing. Annotation c. Book News, Inc., Portland, OR (booknews.com)

A Global Survey of Production, Applications and Markets ASTM International

ASM Handbook, Volume 7 is your single source for practical engineering information on sintering practices, tool design, P/M metallography, dimensional control, part design, powders, binders, lubricants, and the processing, properties, and performance of P/M materials in different production technologies and applications. Completely updated and expanded edition in all areas of powder production, sampling, characterization, shaping, consolidation, sintering, quality control, machining, heat treating, and P/M applications. Comprehensive coverage of P/M technologies and applications including warm compaction, injection molding, rapid prototyping, thermal spray forming, reactive sintering, and P/M gears, bearings, high-performance parts, composites, machine parts, electric contacts, magnetic materials, metallic foams, hardfacing powders, automotive parts, and more.

ASM Handbook John Wiley & Sons

This volume is a comprehensive reference on the basic concepts, methodologies, and information sources dealing with materials selection and its integration with engineering design processes. Contents include contributions from 100+ experts involved with design, materials selection, and manufacturing. Addresses metals, ceramics, polymers, and composites and provides many case histories and examples.

Handbook of Metal Injection Molding Elsevier

David A. Scott provides a detailed introduction to the structure and morphology of ancient and historic metallic materials. Much of the scientific research on this important topic has been inaccessible, scattered throughout the international literature, or unpublished; this volume, although not exhaustive in its coverage, fills an important need by assembling much of this information in a single source. Jointly published by the GCI and the J. Paul Getty Museum, the book deals with many practical matters relating to the mounting, preparation, etching, polishing, and microscopy of metallic samples and includes an account of the way in which phase diagrams can be used to assist in structural

interpretation. The text is supplemented by an extensive number of microstructural studies carried out in the laboratory on ancient and historic metals. The student beginning the study of metallic materials and the conservation scientist who wishes to carry out structural studies of metallic objects of art will find this publication quite useful.

ASM Materials Engineering Dictionary ASM International

This third edition of Metal Powders: A Global Survey of Production, Applications and Markets has been completely revised and updated to include information available up to mid-June 2000. The main purpose of the report is to review the manufacture, applications and markets for the metal and alloy powders of most commercial significance. As a result, the bulk of the report deals with ferrous powders (iron and steel, stainless steels and high alloy tool steels). Most of the non-ferrous metals and alloys are also reviewed, including aluminium, copper, nickel, cobalt, and the refractory metals tungsten and molybdenum. For a PDF version of the report please call Tina Enright on +44 (0) 1865 843008 for price details.

Advances in Gear Design and Manufacture Metal Powder Industry

The second edition of the Handbook of Induction Heating reflects the number of substantial advances that have taken place over the last decade in theory, computer modeling, semi-conductor power supplies, and process technology of induction heating and induction heat treating. This edition continues to be a synthesis of information, discoveries, and technical insights that have been accumulated at Inductoheat Inc. With an emphasis on design and implementation, the newest edition of this seminal guide provides numerous case studies, ready-to-use tables, diagrams, rules-of-thumb, simplified formulas, and graphs for working professionals and students.

Gamma Titanium Aluminide Alloys Elsevier

The Handbook of Aluminum: Vol. 1: Physical Metallurgy and Processes covers all aspects of the physical metallurgy, analytical techniques, and processing of aluminium, including hardening, annealing, aging, property prediction, corrosion, residual stress and distortion, welding, casting, forging, molten metal processing, machining, rolling, and extrusion. It also features an extensive, chapter-length consideration of quenching.

Copper and Copper Alloys CRC Press

Metal injection molding combines the most useful characteristics of powder metallurgy and plastic injection molding to facilitate the production of small, complex-shaped metal components with outstanding mechanical properties. The Handbook of metal injection molding provides an authoritative guide to this important technology and its applications. Part one discusses the fundamentals of the metal injection molding process with chapters on topics such as component design, important powder characteristics, compound manufacture, tooling design, molding optimization, debinding, and sintering. Part two provides a detailed review of quality issues, including feedstock characterisation, modeling and simulation, methods to qualify a MIM process, common defects and carbon content control. Special metal injection molding processes are the focus of part three, which provides comprehensive coverage of micro components, two material/two color structures, and

porous metal techniques. Finally, part four explores metal injection molding of particular materials, including stainless steels, titanium and titanium alloys, thermal management alloys, high speed tool steels, heavy alloys, refractory metals, hard metals and soft magnetic alloys. With its distinguished editor and expert team of international contributors, the Handbook of metal injection molding is an essential guide for all those involved in the high-volume manufacture of small precision parts, across a wide range of high-tech industries such as microelectronics, biomedical and aerospace engineering. Provides an authoritative guide to metal injection molding and its applications Discusses the fundamentals of the metal injection molding processes and covers topics such as component design, important powder characteristics, compound manufacture, tooling design, molding optimization, debinding, and sintering Comprehensively examines quality issues such as feedstock characterization, modeling and simulation, common defects and carbon content control

Handbook of Non-Ferrous Metal Powders Elsevier

Text is a completely revised and updated work covering conventional powder metallurgy (press and sinter) as well as an entire new section devoted to metal injection molding, including its applications, and an article on metal injection molding of microcomponents.

ASM Handbook ASM International

The ASM Handbook series contains peer-reviewed, trusted information in every area of materials specialization. The series is the industry's best known and most comprehensive source of information on ferrous and nonferrous metals and materials technology and is packed with more than 30,000 pages of articles, illustrations, tables, graphs, specifications and practical examples for today's engineer. Each complete set purchase includes the brand-new ASM Handbooks, Volumes 4B, 4C, 4D, and the Comprehensive Index, Third Edition.

Corrosion Tests and Standards ASM International

ASM Specialty Handbook® Stainless Steels The best single-volume reference on the metallurgy, selection, processing, performance, and evaluation of stainless steels, incorporating essential information culled from across the ASM Handbook series. Includes additional data and reference information carefully selected and adapted from other authoritative ASM sources.

Materials Selection and Design, Volume XX ASM International

These volumes cover the properties, processing, and applications of metals and nonmetallic engineering materials. They are designed to provide the authoritative information and data necessary for the appropriate selection of materials to meet critical design and performance criteria.

ASM Handbook Set Elsevier

Laser powder bed fusion of metals is a technology that makes use of a laser beam to selectively melt metal powder layer-by-layer in order to fabricate complex geometries in high performance materials. The technology is currently transforming aerospace and biomedical manufacturing and its adoption is widening into other industries as well, including automotive, energy, and traditional manufacturing. With an increase in design freedom brought to bear by additive manufacturing, new opportunities are emerging for designs not possible previously and in material systems that now provide sufficient

performance to be qualified in end-use mission-critical applications. After decades of research and development, laser powder bed fusion is now enabling a new era of digitally driven manufacturing. Fundamentals of Laser Powder Bed Fusion of Metals will provide the fundamental principles in a broad range of topics relating to metal laser powder bed fusion. The target audience includes new users, focusing on graduate and undergraduate students; however, this book can also serve as a reference for experienced users as well, including senior researchers and engineers in industry. The current best practices are discussed in detail, as well as the limitations, challenges, and potential research and commercial opportunities moving forward. Presents laser powder bed fusion fundamentals, as well as their inherent challenges Provides an up-to-date summary of this advancing technology and its potential Provides a comprehensive textbook for universities, as well as a reference for industry Acts as quick-reference guide

Powder Metallurgy ASM International This one-stop reference is a tremendous value and time saver for engineers, designers and researchers. Emerging technologies, including aluminum metal-matrix composites, are combined with all the essential aluminum information from the ASM Handbook series (with updated statistical information).

ASM Handbook ASM International This fully revised edition of Volume 7 of the ASM Handbook series discusses metal powder production and characterization, shaping and consolidation technologies, secondary operations and quality control, and materials systems, properties and applications. It includes new articles on emerging technol.

Ultra High Molecular Weight Polyethylene in Total Joint Replacement and Medical Devices ASM HandbookThe 2015 edition of the volume on Powder Metallurgy focuses on conventional powder metallurgy and includes a new section on metal injection molding. The newly developed handbook format is aimed at simplifying the understanding of process and property relationships by treating each metal/alloy family in individual divisions.ASM Handbook, Volume 7: Powder Metal Technologies and Applications. Vol. 7Powder MetallurgyText is a completely revised and updated work covering conventional powder metallurgy (press and sinter) as well as an entire new section devoted to metal injection molding, including its applications, and an article on metal injection molding of microcomponents.Metals Handbook Volume 7: Powder MetallurgyASM HandbookPowder Metallurgy. Volume 7Volume 7 covers the basic principles and techniques of powder metallurgy (PM) as it applies to specific metal/alloy families. It addresses powder manufacturing and characterization along with compaction, sintering, and full density processing. It also provides information on metal injection molding and conventional press and sinter powder metallurgy as well as materials and processes in current use. The volume opens with an introductory review of the history of powder metallurgy and relevant material standards -- publisher.Metals Handbook. Vol. 7Powder MetallurgyMetals Handbook: Powder metallurgyHandbook of Non-Ferrous Metal PowdersTechnologies and Applications These volumes cover the properties, processing, and applications of metals and nonmetallic engineering materials.

They are designed to provide the authoritative information and data necessary for the appropriate selection of materials to meet critical design and performance criteria.

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