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Metallographic and Ceramographic Methods for Revealing Microstructure
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ASM Handbook. Volume 9. Metallography and Microstructures
Forming and Forging
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Advances in Laser Materials Processing
ASM Handbook
Metallography and Microstructures

Metal Casting Processes, Techniques and Design
Practices and Procedures for Nonferrous Alloys
Color Metallography
Atlas of Microstructures of Industrial Alloys
Fundamentals of Solidification
ASM Handbook
Ancient Metals
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Smithells Metals Reference Book
Metallographer's Guide
Practical Guide to Image Analysis
Practice and Procedures for Irons and Steels
Metals Handbook
Engineered Materials Handbook, Desk Edition
ASM Materials Engineering Dictionary
A Technical Guide, 2nd Edition

STARK ELLISON

Alloy Phase Diagrams Elsevier
Nine international specialists contribute information about the use of image analysis procedures to evaluate microstructural features. Coverage includes an historical overview of how quantitative image analysis developed; the evolution of current television computer-based analysis systems; the scien
Nickel, Cobalt, and Their Alloys Woodhead Publishing
Volume 3 provides a complete explanation of phase diagrams and their significance and covers solid solutions; thermodynamics; isomorphous, eutectic, peritectic, and monotectic alloy systems; solid-state transformations; and intermediate phases. The volume includes 1083 binary systems, 1095 binary diagrams, 115 ternary systems, and 406 ternary diagrams. -- publisher.
Zinc and Its Alloys Lulu.com
This book is a comprehensive guide to the compositions, properties, processing, performance, and applications of nickel, cobalt, and their alloys. It includes all of the essential information contained in the ASM Handbook series, as well as new or updated

coverage in many areas in the nickel, cobalt, and related industries.

Critical Metals Handbook ASM International

Advances in Laser Materials Processing: Technology, Research and Application, Second Edition, provides a revised, updated and expanded overview of the area, covering fundamental theory, technology and methods, traditional and emerging applications and potential future directions. The book begins with an overview of the technology and challenges to applying the technology in manufacturing. Parts Two thru Seven focus on essential techniques and process, including cutting, welding, annealing, hardening and peening, surface treatments, coating and materials deposition. The final part of the book considers the mathematical modeling and control of laser processes. Throughout, chapters review the scientific theory underpinning applications, offer full appraisals of the processes described and review potential future trends. A comprehensive practitioner guide and reference work explaining state-of-the-art laser processing technologies in manufacturing and other disciplines Explores challenges, potential, and future directions through the continuous development of new, application-specific lasers in materials processing Provides revised, expanded and updated coverage

Complete Casting Handbook ASM International

Complete Casting Handbook is the result of a long-awaited update, consolidation and expansion of expert John Campbell's market-leading casting books into one essential resource for metallurgists and foundry professionals who design, specify or manufacture metal castings. The first single-volume guide to cover modern principles and processes in such breadth and depth whilst retaining a clear, practical focus, it includes: A logical, two-part structure, breaking the contents down into casting metallurgy and casting manufacture Established, must-have information, such as Campbell's '10 Rules' for successful casting manufacture New chapters on filling system design, melting, molding, and controlled solidification techniques, plus extended coverage of a new approach to casting metallurgy Providing in-depth casting knowledge and process know-how, from the noteworthy career of an industry-leading authority, Complete Casting Handbook delivers the expert advice needed to help you make successful and profitable castings. Long-awaited update, consolidation and expansion of expert John Campbell's market-leading casting books into one essential handbook Separated into two parts, casting metallurgy and casting manufacture, with extended coverage of casting alloys and new chapters on filling system design, melting, moulding and controlled solidification techniques to compliment the renowned Campbell '10 Rules' Delivers the expert advice that engineers need to make successful and profitable casting decisions

Metallography, Principles and Practice Amer Welding Society

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

Microstructure and Metallurgy ASM International

The effect of corrosion in the oil industry leads to the failure of parts. This failure results in shutting down the plant to clean the facility. The annual cost of corrosion to the oil and gas industry in the United States alone is estimated at $27 billion (According to NACE International)—leading some to estimate the global annual cost to the oil and gas industry as exceeding $60 billion. In addition, corrosion commonly causes serious environmental problems, such as spills and releases. An essential resource for all those who are involved in the corrosion management of oil and gas infrastructure, Corrosion Control in the Oil and Gas Industry provides engineers and designers with the tools and methods to design and implement comprehensive corrosion-management programs for oil and gas infrastructures. The book addresses all segments of the industry, including production, transmission, storage, refining and distribution. Selects cost-effective methods to control corrosion Quantitatively measures and estimates corrosion rates Treats oil and gas infrastructures as systems in order to avoid the impacts that changes to one segment if a corrosion management program may have on others Provides a gateway to more than 1,000 industry best practices and international standards

Titanium and its Alloys Butterworth-Heinemann

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.

ASM handbook ASM International

Describes the metallography and microstructure of ancient metals with several case studies included. The first volume in this series is devoted to the alloys of copper with silver, lead, tin, zinc,

antimony and arsenic.
Metallographic and Ceramographic Methods for Revealing Microstructure ASM International
Designed to support the need of engineering, management, and other professionals for information on titanium by providing an overview of the major topics, this book provides a concise summary of the most useful information required to understand titanium and its alloys. The author provides a review of the significant features of the metallurgy and application of titanium and its alloys. All technical aspects of the use of titanium are covered, with sufficient metals property data for most users. Because of its unique density, corrosion resistance, and relative strength advantages over competing materials such as aluminum, steels, and superalloys, titanium has found a niche in many industries. Much of this use has occurred through military research, and subsequent applications in aircraft, of gas turbine engines, although more recent use features replacement joints, golf clubs, and bicycles.Contents include: A primer on titanium and its alloys, Introduction to selection of titanium alloys, Understanding titanium's metallurgy and mill products, Forging and forming, Castings, Powder metallurgy, Heat treating, Joining technology and practice, Machining, Cleaning and finishing, Structure/processing/property relationships, Corrosion resistance, Advanced alloys and future directions, Appendices: Summary table of titanium alloys, Titanium alloy datasheets, Cross-reference to titanium alloys, Listing of selected specification and standardization organizations, Selected manufacturers, suppliers, services, Corrosion data, Machining data.
Heat-Resistant Materials John Wiley & Sons
Solidification phenomena play an important role in many of the processes used in fields ranging from production engineering to solid-state physics. The broad range of applications of solidification models - from the large tonnages of continuously cast products, through superalloy precision castings, to high-purity single crystals - means that a book such as the present one must cater for the requirements of a very wide range of readers.
ASM Specialty Handbook Trans Tech Publications Ltd
The proceedings of the 12th National Scientific Conference Ti-2015 contains 35 peer-reviewed articles from 16 Polish scientific centres which cover a wide range of basic and applied aspects of the research, modelling, processing and application of titanium and its alloys. The conference Titanium and its alloys is biannual national conference that has been held in Poland since 1990. It is an occasion to bring together scientists and practitioners, exchange their knowledge and experiences. The aim of the proceedings is to develop and promote the use of titanium in technology and medicine. The presented contributions cover these main topics: - Forming the structure and microstructure of titanium materials as well as their physical, chemical and mechanical properties - Surface engineering, advanced technologies of surface and thermo-plastic treatment
Heat Treater's Guide 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.

ASM Handbook ASM International

Mankind is using a greater variety of metals in greaterquantities than ever before. As a result there is increasing globalconcern over the long-term availability of secure and adequatesupplies of the metals needed by society. Critical metals, whichare those of growing economic importance that might be susceptibleto future scarcity, are a particular worry. For many of thesewe have little information on how they are concentrated in theEarth’s crust, how to extract them from their ores, and howto use, recycle and dispose of them effectively and safely. Published with the British Geological Survey, the CriticalMetals Handbook brings together a wealth of knowledge oncritical metals and provides a foundation for improving the futuresecurity and sustainability of critical metal supplies. Written byinternational experts, it provides a unique source of authoritativeinformation on diverse aspects of the critical metals, includinggeology, deposits, processing, applications, recycling,environmental issues and markets. It is aimed at a broadnon-specialist audience, including professionals and academicsworking in the exploration and mining sectors, in mining financeand investment, and in mineral processing and manufacturing. Itwill also be a valuable reference for policy makers concerned withresource management, land-use planning, eco-efficiency, recyclingand related fields.

ASM Handbook ASM International

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.

Brazing Handbook 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).

Technology, Research and Applications Elsevier

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. Volume 9. Metallography and Microstructures Getty Publications

A comprehensive reference on the properties, selection, processing, and applications of the most widely used nonmetallic engineering materials. Section 1, General Information and Data, contains information applicable both to polymers and to ceramics and glasses. It includes an illustrated glossary, a collection of engineering tables and data, and a guide to materials selection. Sections 2 through 7 focus on polymeric materials--plastics, elastomers, polymer-matrix composites, adhesives, and sealants--with the information largely updated and expanded from the first three volumes of the Engineered Materials Handbook. Ceramics and glasses are covered in Sections 8 through 12, also with updated and expanded information. Annotation copyright by Book News, Inc., Portland, OR

Forming and Forging ASM International

Optical microscopy is one of the most valuable--but under utilized--tools for analyzing fiber reinforced polymer matrix composites. This hands-on instructional book covers everything: sample preparation, microscopic techniques, and applications. The power of optical microscopy to study the microstructure of these heterogeneous, anisotropic materials is illustrated with over 180 full color images.

ASM Handbook: Fatigue and fracture ASM International

Materials covered include carbon, alloy and stainless steels; alloy cast irons; high-alloy cast steels; superalloys; titanium and titanium alloys; refractory metals and alloys; nickel-chromium and nickel-thoria alloys; structural intermetallics; structural ceramics, cermets, and cemented carbides; and carbon-composites.

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