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2023-04-29

SANAA FORD

Fatigue and Fracture ASM International

This book presents the select proceedings of the International Conference on Functional Material, Manufacturing and Performances (ICFMMP) 2019. The book covers broad aspects of several topics involved in the metrology and measurement of engineering surfaces and their implementation in automotive, bio-manufacturing, chemicals, electronics, energy, construction materials, and other engineering applications. The contents focus on cutting-edge instruments, methods and standards in the field of metrology and mechanical properties of advanced materials. Given the scope of the topics, this book can be useful for students, researchers and professionals interested in the measurement of surfaces, and the applications thereof.

Stainless Steels for Design Engineers ASM International

The completely revised Second Edition of Metallurgy for the Non-Metallurgist provides a solid understanding of the basic principles and current practices of metallurgy. This major new edition is for anyone who uses, makes, buys or tests metal products. For both beginners and others seeking a basic refresher, the new Second Edition of the popular Metallurgy for the Non-Metallurgist gives an all-new modern view on the basic principles and practices of metallurgy. This new edition is extensively updated with broader coverage of topics, new and improved illustrations, and more explanation of basic concepts. Why are cast irons so suitable for casting? Do some nonferrous alloys respond to heat treatment like steels? Why is corrosion so pernicious? These are questions that can be answered in this updated reference with many new illustrations, examples, and descriptions of basic metallurgy.

Alloying ASM International

If you are involved with machining or metalworking or you specify materials for industrial components, this book is an absolute must. It gives you detailed and comprehensive information about the selection, processing, and properties of materials for machining and metalworking applications. They include wrought and powder metallurgy tool steels, cobalt base alloys, cemented carbides, cermets, ceramics, and ultra-hard materials. You'll find specific guidelines for optimizing machining productivity through the proper selection of cutting tool materials plus expanded coverage on the use of coatings to extend cutting tool and die life. There is also valuable information on alternative heat treatments for improving the toughness of tool and die steels. All new material on the correlation of heat treatment microstructures and properties of tool steels is supplemented with dozens of photomicrographs. Information on special tooling considerations for demanding applications such as isothermal forging, die casting of metal matrix composites, and molding of corrosive plastics is also included. And you'll learn about alternatives to ferrous materials for metalworking applications such as carbides, cermets, ceramics, and nonferrous metals like aluminum, nickel, and copper base alloys.

ASM Handbook Springer Nature

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.

Gear Materials, Properties, and Manufacture 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).

Molybdenum Steels Springer Nature

The current state of understanding of emerging iron alloys and high-alloy ferrous systems, in comparison with some conventional steels, is compiled in this single volume to further their development. While most of the conventional steels are produced routinely today, many advanced high strength steels and iron-based alloys are still in the laboratory stage. The iron-based emerging alloys can yield high levels of mechanical and physical properties due to their new alloy concepts and novel microstructures leading to multiple benefits of their use in terms of sustainability and environmental impact. This book contains introductory chapters that present the requisite background knowledge on thermodynamics, phase diagrams, and processing routes used for the ferrous alloys to enable the readers a smooth understanding of the main chapters. Then, an overview of the conventional microalloyed steels and advanced high strength steels is given to present the benchmark of the existing steels and ferrous alloys manifesting their current state-of-the-art in terms of physical metallurgy and engineering applications. Subsequent chapters detail novel, emerging ferrous alloys and high-alloy ferrous systems. Summarizes the state-of-the-art of emerging iron-based alloys and the new processing and physical metallurgy-related developments of high-alloy iron systems; Explores new iron-based systems driven by the need for new properties, enhanced performance, sustainable processes and educed environmental impact; Compiles cutting-edge research on the progress of materials science of iron-based systems, from physical metallurgy to engineering applications, and possible avenues for future research.

Abrasive Erosion And Corrosion Of Hydraulic Machinery Elsevier

"This book emphasizes the physical and practical aspects of fatigue and fracture. It covers mechanical properties of materials, differences between

ductile and brittle fractures, fracture mechanics, the basics of fatigue, structural joints, high temperature failures, wear, environmentally-induced failures, and steps in the failure analysis process."--publishers website.

Advances in Metrology and Measurement of Engineering Surfaces ASM International

How can I use my HPLC/UHPLC equipment in an optimal way, where are the limitations of the technique? These questions are discussed in detail in the sequel of the successful "HPLC Expert" in twelve chapters written by experts in the respective fields. The topics encompass - complementary to the first volume - typical HPLC users' problems and questions such as gradient optimization and hyphenated techniques (LC-MS). An important key aspect of the book is UHPLC: For which analytical problem is it essential, what should be considered? Besides presentation of latest developments directly from the main manufacturers, also UHPLC users and independent service engineers impart their knowledge. Consistent with the target groups, the level is advanced, but the emphasis is on practical applications.

Distortion in Tool Steels ASM International

This book gives a systematic exposition of abrasive erosion and corrosion of hydraulic machinery in both theory and engineering practice, and is the first comprehensive volume to cover this area in depth.All the important subjects are discussed including fundamentals, calculation, analysis and numerical simulation of liquid-solid flow design, erosion-resistant materials, interaction between cavitation and abrasive erosion, and corrosion of hydraulic machinery.

ASM Specialty Handbook Asm International

Designed as a basic and introductory reference, this book not only addresses stainless steels in the light of their resistance to corrosion for which they are more commonly recognised, but also explains the wide range of other useful properties attributable to the various and specific categories of these alloys. This book is a concise, easy-to-read introduction to one of the most widely used industrial materials. Each chapter explains an important concept related to the selection, application, processing and use of stainless steels. This book is indexed and includes appendices: (1) Identification of Stainless Steels in Service (2) Toxicity of Stainless Steel (3) Table of Equivalent Designations (this is not intended to be complete, but includes the more commonly used stainless steels and the most widely used designation systems). First published in 1965 and updated in 1986, this third edition is a completely new text.

Steels John Wiley & Sons

Book Description: The Dictionary of Metals is the authoritative reference work for terms and definitions of metals and terms relating to metals. It also includes a considerable amount of history starting with the seven metals of antiquity. Each of the metallic elements has a discussion that includes the discoverer and date, the naming of the metal and its meaning, the major applications, the significance of the discovery, and physical properties.

Includes a timeline of important events in the history of metals and metallurgy.

High-Performance Ferrous Alloys McGraw-Hill Companies

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.

Powder Metallurgy Stainless Steels ASM International

High Interstitial Stainless Austenitic Steels is of interest to all engineers and resaerchers working with stainless steel, either at universities or R&D departments in Industry. The new applications described appeal to design engineers while procees engineers find interesting challenges. These novel steels enter more and more industrial applications. Their development is presented by this book in its entirety, starting from the electronic scale of components. This makes it particularly attractive to Materials Scientists and Metal Physicists.

Nickel, Cobalt, and Their Alloys ASM International

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.

Titanium and Titanium Alloys ASM International

All of the critical technical aspects of gear materials technology are addressed in this new reference work. Gear Materials, Properties, and Manufacture is intended for gear metallurgists and materials specialists, manufacturing engineers, lubrication technologists, and analysts concerned with gear failures who seek a better understanding of gear performance and gear life. This volume complements other gear texts that emphasize the design, geometry, and theory of gears. The coverage begins with an overview of the various types of gears used, important gear terminology, applied stresses and strength requirements associated with gears, and lubrication and wear. This is followed by in-depth treatment of metallic (ferrous and nonferrous alloys) and plastic gear materials. Emphasis is on the properties of carburized steels, the material of choice for high-performance power transmission gearing.

Fastener Design Manual Springer Science & Business Media

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.

Dictionary of Metals World Scientific

This book presents an up-to-date overview on the main classes of metallic materials currently used in aeronautical structures and propulsion engines and discusses other materials of potential interest for structural aerospace applications. The coverage encompasses light alloys such as aluminum-, magnesium-, and titanium-based alloys, including titanium aluminides; steels; superalloys; oxide dispersion strengthened alloys; refractory alloys; and related systems such as laminate composites. In each chapter, materials properties and relevant technological aspects, including processing, are presented. Individual chapters focus on coatings for gas turbine engines and hot corrosion of alloys and coatings. Readers will also find consideration of applications in aerospace-related fields. The book takes full account of the impact of energy saving and environmental issues on materials development, reflecting the major shifts that have occurred in the motivations guiding research efforts into the development of new materials systems. *Aerospace Alloys* will be a valuable reference for graduate students on materials science and engineering courses and will also provide useful information for engineers working in the aerospace, metallurgical, and energy production industries.

Stainless Steels ASM International

This handbook is an in-depth guide to the practical aspects of materials and corrosion engineering in the energy and chemical industries. The book covers materials, corrosion, welding, heat treatment, coating, test and inspection, and mechanical design and integrity. A central focus is placed on industrial requirements, including codes, standards, regulations, and specifications that practicing material and corrosion engineers and technicians face in all roles and in all areas of responsibility. The comprehensive resource provides expert guidance on general corrosion mechanisms and recommends materials for the control and prevention of corrosion damage, and offers readers industry-tested best practices, rationales, and case

studies.

Handbook of Engineering Practice of Materials and Corrosion CRC Press

"Advanced Steels: The Recent Scenario in Steel Science and Technology" contains more than 50 articles selected from the proceedings of the International Conference on Advanced Steels (ICAS) held during 9-11, Nov, 2010 in Guilin, China. This book covers almost all important aspects of steels from physical metallurgy, steel grades, processing and fabrication, simulation, to properties and applications. The book is intended for researchers and postgraduate students in the field of steels, metallurgy and materials science. Prof. Yuqing Weng is an academician of Chinese Academy of Engineering and the president of The Chinese Society for Metals. Prof. Han Dong is the vice president of Central Iron & Steel Research Institute and the director of National Engineering Research Center of Advanced Steel Technology, China. Prof. Yong Gan is an academician of Chinese Academy of Engineering, the vice president of Chinese Academy of Engineering and the president of Central Iron & Steel Research Institute, China.

The HPLC Expert II ASM International

If you are involved with machining or metalworking or you specify materials for industrial components, this book is an absolute must. It gives you detailed and comprehensive information about the selection, processing, and properties of materials for machining and metalworking applications. They include wrought and powder metallurgy tool steels, cobalt base alloys, cemented carbides, cermets, ceramics, and ultra-hard materials. You'll find specific guidelines for optimizing machining productivity through the proper selection of cutting tool materials plus expanded coverage on the use of coatings to extend cutting tool and die life. There is also valuable information on alternative heat treatments for improving the toughness of tool and die steels. All new material on the correlation of heat treatment microstructures and properties of tool steels is supplemented with dozens of photomicrographs. Information on special tooling considerations for demanding applications such as isothermal forging, die casting of metal matrix composites, and molding of corrosive plastics is also included. And you'll learn about alternatives to ferrous materials for metalworking applications such as carbides, cermets, ceramics, and nonferrous metals like aluminum, nickel, and copper base alloys.