

Monolithic Refractories A Comprehensive Handbook

The aim of each volume of this series Guides to Information Sources is to reduce the time which needs to be spent on patient searching and to recommend the best starting point and sources most likely to yield the desired information. The criteria for selection provide a way into a subject to those new to the field and assists in identifying major new or possibly unexplored sources to those who already have some acquaintance with it. The series attempts to achieve evaluation through a careful selection of sources and through the comments provided on those sources.

This book provides a basic understanding of refractories. This includes the fundamentals of refractory technology supported by phase diagrams as well as detailing the prominent applications of these essential industrial materials. This book covers all the facets of refractory technology, starting from classification, properties, standard specifications, details of the conventional shaped refractories, including relevant phase diagrams & application areas and also the details of unshaped refractories including various classifications, bonding, additives and their applications.

Smart Nanoconcretes and Cement-Based Materials: Properties, Modelling and Applications explores the fundamental concepts and applications of smart nanoconcretes with self-healing, self-cleaning, photocatalytic, antibacterial, piezoelectrical, heating and conducting properties and how they are used in modern high-rise buildings, hydraulic engineering, highways, tunnels and bridges. This book is an important reference source for materials scientists and civil engineers who are looking to enhance the properties of smart nanomaterials to create stronger, more durable concrete. Explores the mechanisms through which active agents are released from nanocontainers inside concrete Shows how embedded smart nanosensors, including carbon cement-based smart sensors and micro/nano strain-sensors, are used to increase concrete performance Discusses the major challenges of integrating smart nanomaterials into concrete composites

Second section

UNITECR '05

Comprehensive index

Advanced Materials Forum V

Fluid Catalytic Cracking Handbook

Principles, Types, Properties and Applications

This index eliminates that need to search through multiple back-of-the-book indexes to find where a subject is addressed. The A-to-Z listing will help users find important handbook content in volumes where they may not have thought to look.

Surface Tension Forces in Gas Pressurized VDC Casting 195 P.W. Baker and J.F. Grandfield A Total Business Cost Approach 205 Brett T. Aisen and Lachlan J. Massey Optimising Pit Recoveries on 6XXX Extrusion Billet 213 David Latter CAST HOUSE SAFETY Casthouse Safety in 2001 223 John E. Jacoby Improving Safety Performance in an Aluminium Casthouse 233 Barry Taylor CONTINUOUS CASTING An Assessment of the Design of a Gautschi Mould Using Finite Element Analysis 247 Philip Clausen and Geoff Whan Horizontal Direct Chilled (HDC) Casting Technology for Aluminium and Requirements to Metal Cleanliness 253 Franz Niedermair Aspects of Heat Transfer During Production of Remelt Ingot Using Chain

Casters 263 J.F. Grandfield, T.T. Nguyen, G. Redden and J.A. Taylor Twin-Belt Casting Technology Update (abstract only) 273 W. Szczypiorski Improving Horizontal Direct Chill Casting 275 Ali A. Dawood HEAT TREATMENT Effect of Homogenisation Temperature and Time on Billet Microstructure and Extruded Properties of Alloy 6061 287 M.J. Couper, M. Cooksey and B. Rinderer Effect of Homogenization on Small Diameter Billets - An Extruder's Experience 297 Hua-Tian Tan and Callistus Hing-Chih Lee Control of Wire Rod Physical Properties Like Ultimate Tensile Strength and Elongation by Close Monitoring of Rolling Energy Input 305 S.D. Chouharia, P.S. Gambhir and M. Dash MAGNESIUM CASTING Aluminium and Magnesium: Equipment and Process Comparison 319 Paul McGlade and Nigel Ricketts RECYCLING Recycling of Contaminated Aluminium Scrap - A Responsible Approach 331 Richard J. Evans REFRACTORY Cast House Refractories - Selection & Evaluation 343 Robert C. Flann PROCESS CONTROL Advances in On-Site Alloy Analysis and Identification (abstract only) 357 Keith Watson Automation Primer for Supervisors and Operators 359 Peter R. Whiteley Author

Process flow description. FCC Feed Characterization. FCC Catalysts. Chemistry of FCC reactions. Unit monitoring and control. Products and economics. Project management and hardware design. Troubleshooting. Emerging trends in fluidized catalytic cracking. Appendixes: Total correlations. n-d-M correlations. API correlations. ASTM to TBP conversion. Definitions of fluidization terms. Glossary. Index.

Journal of the Ceramic Society of Japan
Feuerfeste Werkstoffe
Monolithic Refractories
Proceedings of the Unified International Technical Conference on Refractories (UNITECR 2013)
Transactions of the Iron and Steel Institute of Japan
Enabling New Designs

This resource covers all areas of interest for the practicing engineer as well as for the student at various levels and educational institutions. It features the work of authors from all over the world who have contributed their expertise and support the globally working engineer in finding a solution for today's mechanical engineering problems. Each subject is discussed in detail and supported by numerous figures and tables.

This collection comprises 232 peer-reviewed papers, grouped into chapters according to materials-type, applications, characterization or simulation: Chapter 1: biomaterials and integration of materials into biological systems (14 papers); Chapter 2: ceramics (12 papers); Chapter 3:

composite materials (18 papers); Chapter 4: electronic, magnetic and photonic materials (25 papers); Chapter 5: metals and alloys (31 papers); Chapter 6: nanoscaled materials (11 papers); Chapter 7: polymers (17 papers); Chapter 8: materials for energy production, transport and storage (9 papers); Chapter 9: powder materials and powder technology processes (7 papers); Chapter 10: surface modification, thin films, coatings, and corrosion (22 papers); Chapter 11: simulation and modelling of materials and structures (16 papers); Chapter 12: aggregate, petrous and cementitious materials (22 papers); Chapter 13: recycling, eco-friendly materials and processes (12 papers); Chapter 14: fracture, fatigue, creep and wear (12 papers); Chapter 15: sensors and inspection techniques (4 papers). This collection presents papers from the 150th Annual Meeting & Exhibition of The Minerals, Metals & Materials Society.

Transactions

Handbook of Industrial Refractories Technology

TMS 2021 150th Annual Meeting & Exhibition Supplemental Proceedings

Grundlagen, Werkstoffe, Verfahrenstechnik

Information Sources in Metallic Materials

A Comprehensive Handbook

This book (a companion to Science of Whitewares, focuses on the pre-firing issues of raw materials, polymeric additives, characterization, processing, and forming. Provides an in-depth understanding of the raw minerals used to manufacture whitewares including minerology and characterization, followed by the systems that are the keys to improved yields in the manufacturing process.

Encompasses the entire range of industrial refractory materials and forms: properties and their measurement, applications, manufacturing, installation and maintenance techniques, quality assurance, and statistical process control.

This collection of over 200 papers from the 9th Biennial Worldwide Congress on Refractories is broad-ranging and diverse in perspective. Topics include steelmaking refractories, castable technology, global refractories education and technology and industrial applications. Numerous papers are from representatives from major international steel companies.

Proceedings of the Unified International Technical Conference on Refractories, November 8-11, 2005, Orlando, Florida, USA, 9th Biennial Worldwide Congress on Refractories

Japan Company Handbook

Ceramic Source

Materials Handbook

Refractories for the Cement Industry

The Handbook of Advanced Materials

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

Monolithic Refractories A Comprehensive Handbook World Scientific
The book provides, in a compact format, basic knowledge and practically oriented information on specific properties of refractory materials, on their testing and inspection, and on interpretation of test results. Tables and illustrations are used to clarify fundamental concepts on a comparative basis. This pocket format manual provides an overview of the diverse range of modern refractories and their application-relevant properties. Its main feature is a series of practice-derived articles by well-known authors in the field on the various material groups and their characteristic property data. The content has deliberately been kept concise and instructive, abstracting and more detailed works are referenced.

Aluminium Cast House Technology (Seventh Australasian Conference)
Fundamentals and Applications

An Expert Guide to the Practical Operation, Design, and Optimization of FCC Units

American Book Publishing Record

A Concise Desktop Reference

Refractories Handbook

This book provides process engineers with all of the information necessary for installation, maintenance and management of refractory in a cement industry. It describes how to characterize the refractory material and select refractories for various equipments in the cement plant. The author explains refractory installation, in general, and the rotary kiln specifically, as it is distinct from static furnaces used in metallurgical or process industries. It also details the chemical and physical factors that influence refractory performance and has discussed the mechanism of degradation of refractories with special emphasis on thermo-chemical and thermo-mechanical aspects. The heat transfer calculation and energy loss from the equipment surfaces has been addressed. A chapter in the book is dedicated for the management of refractory quality and the installation quality at the site. Maximizes reader understanding of the operating conditions in different equipments and how those are related to selection of refractories; Details the process variables and their influences on the performance of the refractories; Elucidates subtle points of refractory installation to ensure optimal performance; Presents heat transfer calculations and quality management protocols of refractory installation. Reinforces the concepts with many illustrations and tables.

The unique and practical Materials Handbook (third edition) provides quick and easy access to the physical and chemical properties of very many classes of materials. Its coverage has been expanded to include whole new families of materials such as minor metals, ferroalloys, nuclear materials, food, natural oils, fats, resins, and waxes. Many of the existing families—notably the metals, gases, liquids, minerals, rocks, soils, polymers, and fuels—are broadened and refined with new material and up-to-date information. Several of the larger tables of data are expanded and new ones added. Particular emphasis is placed on the properties of common industrial materials in each class. After a chapter introducing some general properties of materials, each of twenty-five classes of materials receives attention in its own chapter. The health and safety issues connected with the use and handling of industrial materials are included. Detailed appendices provide additional information on subjects as diverse as crystallography, spectroscopy, thermochemical data, analytical chemistry, corrosion resistance, and economic data for industrial and hazardous materials. Specific further reading sections and a general bibliography round out this comprehensive guide. The index and tabular format of the book makes light work of extracting what the reader needs to know from the wealth of factual information within these covers. Dr. François Cardarelli has spent many years compiling and editing materials data. His professional expertise and experience combine to make this handbook an indispensable reference tool for scientists and engineers working in numerous fields ranging from chemical to nuclear engineering. Particular emphasis is placed on the properties of common industrial materials in each class. After a chapter introducing some general properties of materials, materials are classified as follows: ferrous metals and their alloys; ferroalloys; common nonferrous metals; less common metals; minor metals; semiconductors and superconductors; magnetic materials; insulators and dielectrics; miscellaneous electrical materials; ceramics, refractories and glasses; polymers and elastomers; minerals, ores and gemstones; rocks and meteorites; soils and fertilizers; construction materials; timbers and woods; fuels, propellants and explosives; composite materials; gases; liquids; food, oils, resin and waxes; nuclear materials. food materials

This comprehensive reference details the technical, chemical, and mechanical aspects of high-temperature refractory composite materials for step-by-step guidance on the selection of the appropriate system for specific manufacturing processes. The book surveys a wide range of lining system geometries and material combinations and covers a broad

Engineered Materials Handbook, Desk Edition

Refractory Technology

ISI International

Refractory Materials

Handbook of Photovoltaic Science and Engineering

The world's experts on alumina are united in this effort to provide a comprehensive reference on the science and technology of alumina chemicals. Fifty-seven authors, representing 34 industrial firms, government agencies and universities, contributed to this book. This book covers the entire gamut of subjects relating to alumina from fundamental chemistry and material properties to applications and future uses. It includes a glossary and brief biographies of each author, detailing their experiences with alumina.

In this valuable handbook, various monolithic refractories currently in use are described in detail, with particular attention paid to their chemical and physical behaviors during manufacturing, installation, and the duty cycle. Critical aspects of reactions involved within the refractory body as it approaches the used temperature within the processing environment are addressed from the practitioner's point of view. To ensure optimum performance, the application, installation, and design of

refractory components are described in detail. In short, the book contains a comprehensive discussion on monolithic refractories concerning their formulation, manufacture, and use. The information is most current, with suitable tables and figures. Also, historical perspectives on the evolution of the refractory industry are provided. This book is primarily designed to serve as a handbook for practicing ceramic engineers, scientists, raw material suppliers, and research and development personnel in the refractory manufacturing industry and industries associated with high temperature material processing. It may also be used in courses for ceramic engineering students specializing in refractories. Contents: Raw Materials Castable Refractories Pumpable Castables Plastic Refractories Ramming Mixes Gunning Mixes Mortars Coatings Dry Vibratable Wear

Mechanisms Manufacturing Application Designs Evaluation and Tests Lining
Readership: Professionals dealing with refractories — raw material suppliers, manufacturers and users. keywords: Alumina; Silica; Mullite; Colloidal

Silica; Trough; Tundish; Castable; Pumpable; Ramming Mix; Gunning Mix

The most comprehensive, authoritative and widely cited reference on photovoltaic solar energy Fully revised and updated, the Handbook of Photovoltaic Science and Engineering, Second Edition incorporates the substantial technological advances and research developments in photovoltaics since its previous release. All topics relating to the photovoltaic (PV) industry are discussed with contributions by distinguished international experts in the field. Significant new coverage includes: three completely new chapters and six chapters with new authors device structures, processing, and manufacturing options for the three major thin film PV technologies high performance approaches for multijunction, concentrator, and space applications new types of organic polymer and dye-sensitized solar cells economic analysis of various policy options to stimulate PV growth including effect of public and private investment Detailed treatment covers: scientific basis of the photovoltaic effect and solar cell operation the production of solar silicon and of silicon-based solar cells and modules how choice of semiconductor materials and their production influence costs and performance making measurements on solar cells and modules and how to relate results under standardised test conditions to real outdoor performance photovoltaic system installation and operation of components such as inverters and batteries. architectural applications of building-integrated PV Each chapter is structured to be partially accessible to beginners while providing detailed information of the physics and technology for experts. Encompassing a review of past work and the fundamentals in solar electric science, this is a leading reference and invaluable resource for all practitioners, consultants, researchers and students in the PV industry.

ASM Handbook

Springer Handbook of Mechanical Engineering

Industrial Ceramics

(Refractories '87 Tokyo)

Blast Furnace and Steel Plant

Pocket Manual ; Design, Properties, Testing

Proceedings containing 231 manuscripts that were submitted and approved for the 13th biennial worldwide refractories

congress recognized as the Unified International Technical Conference on Refractories(UNITECR), held September 10-13, 2013.

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.

Written to educate readers about recent advances in the area of new materials used in making products. Materials and their properties usually limit the component designer. * Presents information about all of these advanced materials that enable products to be designed in a new way * Provides a cost effective way for the design engineer to become acquainted with new materials * The material expert benefits by being aware of the latest development in all these areas so he/she can focus on further improvements

2nd International Conference on Refractories

Science and Technology Handbook

Alumina Chemicals

Properties, Modelling and Applications

Science of Whitewares II

Technische Keramik