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Advances in Comminution

Edited by S. Komar Kawatra

Advances in Comminution focuses on the dilemma of needing to grind materials to finer sizes while maintaining reasonable energy costs. Because the selection and sizing of stirred mills for regrinding and ultrafine-grinding applications do not lend themselves to conventional methodologies, new approaches are being developed. Activity has been directed toward improving ore characterization to predict AG/SAG mill energy requirements, as well as developing improved models and instrumentation for the optimization and control of comminution circuits. Instrumentation, modeling, and control functions in particular have benefited from rapidly advancing computer technology. These advances will minimize energy waste and provide the increased energy efficiency needed to maintain ongoing success.

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Advances in Gravity Concentration

Edited by R.Q. Honaker and W.R. Forrest

This compilation focuses on state-of-the-art developments and future trends in gravity concentration technologies. Leading experts discuss recent developments in the design, optimization, and control of gravity-based separation processes and their associated applications. *Advances in Gravity Concentration* is divided into three sections: fundamentals, coal applications, and noncoal applications. The fundamentals section reviews developments in the knowledge of particle characterization, particle-setting kinetics, slurry rheology, and overall process modeling. Chapters examine novel technological and circuitry advances in coal and noncoal applications and discuss technologies incorporating other physical forces, such as those associated with surface chemistry properties and their relative efficiencies.

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Edited by R. Dimitrakopoulos

In an ever-changing world of uncertain markets, mismatches between demand and reserve base growth, new emerging technologies, and new technical problems and their solutions, this book represents a contribution to old and new dimensions of a most intricate, complex, challenging, and critically important technical part of mining ventures and the industry. These and other issues add complexity and uncertainty to the already challenging domains of orebody modelling and strategic mine planning, which are arguably the backbone of our industry. This volume comprises 43 papers under the following topics: Modelling and Planning in the New World; Modelling Orebodies and Applications; Mining Optimisation and Case Studies; Large-Scale Integrated Applications; Uncertainty Models and Recoverable Reserves; Optimisation Is Moving Underground; and The New World and Strategic Innovation.

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This edition incorporates new and updated material, including the rapidly changing technologies in the aggregates industry. It includes expanded coverage of developments in sustainability, production technology, safety, transportation, design, technology standards, and industry trends, just to name a few.

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Beneficiation of Phosphate Ore

By S. Komar Kawatra and J.T. Carlson

Phosphate rock is an important mineral commodity used in the production of phosphoric acid. The majority of phosphoric acid is produced by the wet process in which phosphate rock is reacted with sulfuric acid to produce phosphoric acid and gypsum (calcium sulfate dihydrate). The wet process demands a phosphate rock feed that meets certain specifications to produce phosphoric acid efficiently and economically.

Beneficiation of Phosphate Ore thoroughly explains the methods used in beneficiation of different types of phosphate ores for use in the wet process. The mineralogical properties of the two major types of phosphate deposits, sedimentary and igneous, are described along with the processing methods. The benefits and disadvantages of each process are also discussed.

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Beneficiation of Phosphates: New Thought, New Technology, New Development

Edited by Patrick Zhang, Jan Miller, and Hassan El-Shall

Fueled by climbing food prices, the demand for fertilizers is on the rise. The phosphate industry is responding aggressively by bringing significant projects online across the globe. But meeting this unprecedented demand comes with a host of challenges: environmental lawsuits have put a stop to one of the largest phosphate mines in the world; other operations are closing because of the depletion of phosphate reserve; the increasing proportion of high organic and high dolomite ores has caused beneficiation costs to skyrocket; there is a growing urgency for the sustainable development and recycling of phosphate resources.

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Blasting Principles for Open Pit Mining

By William Hustrulid

Blasting Principles for Open Pit Mining covers the engineering and the scientific aspects of blasting, with special attention to open pit mining. Serving as a textbook and reference for practicing mining, civil, and construction engineers involved in surface rock excavation, Volume 1 (*General Design Concepts*) identifies and explains the basic engineering concepts that make up a blast design. Volume 2 (*Theoretical Foundations*) provides additional depth and understanding.

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Canadian & American Mines Handbook 2014–2015

This handbook provides concise snapshots of more than 3,000 U.S. and Canadian mining companies, mines, and associated organizations such as smelters, refineries, and industry associations. The most comprehensive mining company directory on the market for the past 81 years, the *Canadian & American Mines Handbook* lists company profit/loss statements, authorized capital, dividends, assets, and more.

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NEW!



Challenges in Fine Coal Processing, Dewatering, and Disposal

Edited by Mark S. Klima, Barbara J. Arnold, and Peter J. Bethell

New sources of energy, increased environmental awareness, and more stringent regulations are changing the way coal is found, extracted, and used. As a result, fine coal cleaning, dewatering, and refuse disposal are now at a major crossroads. The increased level of fines and near-density material in the inferior seams being mined today necessitate the development of more efficient fine coal cleaning devices. This, in turn, requires improvements in traditional dewatering techniques to address the need for acceptable moisture levels in plant products. Moreover, the larger volume of fine refuse being generated, coupled with harsher disposal regulations, require upgraded treatment options.

This book includes general knowledge and in-depth discussions on the current challenges facing the industry, techniques for designing more efficient plants, and new cleaning and dewatering technologies. The book is a practical, yet cutting-edge resource for plant designers, engineers, and other practitioners, and for university students and faculty.

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The Chemistry of Gold Extraction, 2nd edition

By John O. Marsden and C. Iain House

The Chemistry of Gold Extraction provides the broad knowledge base required by those working in the gold extraction and gold processing industries. This book bridges the gap between research and industry by emphasizing the practical applications of chemical principles and techniques. It includes in-depth discussions on historical developments; ore deposits and process mineralogy; process selection; principles of gold hydrometallurgy; oxidative pretreatment; leaching; solution purification and concentration; recovery; surface chemical methods; refining; effluent treatment; and industrial applications.

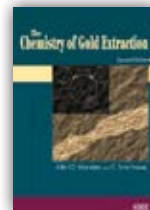
A valuable asset for all professionals involved in the precious metals industries, *The Chemistry of Gold Extraction* will be particularly useful to engineers and scientists (including extractive metallurgists, mineral/metallurgical engineers, electrochemists, chemical engineers, mineral technologists, mining engineers, and material scientists); plant operators and managers; academics; educators; and students working in the production, research, or consulting capacities of gold extraction.

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The Circulating Load: Practical Mineral Processing Plant Design by an Old-Time Ore Dresser

By Robert S. Shoemaker

This how-to guide is loaded with innovative ideas and practical solutions to some of the most troublesome mineral processing challenges. From mess-free flooring and inventive crusher and conveyor designs to time-saving quality-control techniques, *The Circulating Load* captures fresh approaches to age-old problems that can inhibit mill operating performance. Part engineering, part common sense, this treasure trove of tips and tricks presents smarter methods of minerals processing management.

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La Carga Circulante: Guía Práctica para el Diseño de Plantas de Concentración de Minerales por un Veterano en la Especialidad

By Robert S. Shoemaker, Translation by Mario E. Watkins

This is the Spanish version of the popular SME book, *The Circulating Load: Practical Mineral Processing Plant Design* by an Old-Time Ore Dresser

Esta guía es un compendio de ideas innovativas y soluciones prácticas a algunos de los problemas que comúnmente enfrentan los diseñadores y los operadores de plantas de concentración de minerales. Desde el diseño de pisos fáciles de mantener limpios y seguros para transitar a inventivos detalles para diseño de sistemas de trituración, transporte, y técnicas que facilitan el control de operaciones, esta referencia incluye prácticos enfoques a viejos problemas que pueden inhibir el buen rendimiento de una planta de concentración.

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Coal Mine Ground Control, 3rd edition

By Syd S. Peng

This is the complete and authoritative reference on U.S. coal mining methods. Authored by expert Syd S. Peng, this book covers all areas of coal mine ground control: rock properties and in situ stresses; geological conditions that form the rock strata, their anomalies, and geophysical methods employed to detect the anomalies; roof bolts and roof bolting systems; pillar design; recent myths of high horizontal stresses; longwall mining; multiple seam mining; bumps, occurrence, mechanisms, and control; entry stability problems; theories and methods of underground and surface instrumentation; material models; surface subsidence; and highwall stability.

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Published by Syd S. Peng

2008 / Hardbound / 764 pages / 5 lbs

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Coal Preparation, 5th edition

Edited by Joseph W. Leonard III

By popular demand, the fifth edition of *Coal Preparation* is now available as an eBook. This classic 1,154-page reference comprehensively covers the industry, with chapters on chemical/physical properties and marketing; preliminary design consideration; coal preparation costs; pre-preparation; size reduction; sizing; concentration; dewatering; post-preparation/storage and loading; process control; plant waste and environmental considerations; sampling and analysis; and utilization.

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Concrete for Underground Structures

Edited by Robert J.F. Goodfellow

Concrete is a vital component of almost every underground construction project. Because it significantly impacts both the durability and cost of a project, owners, designers, and contractors are constantly challenged with designing and placing the concrete to meet their quality standards in the most cost-effective way.

The first resource of its kind, this practical nuts-and-bolts handbook provides an industry voice as well as recommendations for areas of concrete application. You will get valuable insights into current best practices for all aspects of the design and construction of underground structural concrete.

Internationally respected authors examine three key applications: cast-in-place concrete, precast concrete segmental linings, and shotcrete. Each chapter addresses the differences between aboveground and underground use. The various types of concrete admixtures are also discussed, and sample specifications for each are included.

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Controlling Exposure to Diesel Emissions in Underground Mines

By Aleksandar D. Bugarski, Samuel J. Janisko, Emanuele G. Cauda, James D. Noll, and Steven E. Mischler

The use of diesel-powered equipment in underground mining operations provides many benefits to the industry. It also presents many challenges to the health and safety of workers, as it is a significant source of submicrometer aerosols and noxious gases.

This book was developed to assist the coal and metal/nonmetal underground mining industries in their efforts to reduce the exposure of workers to aerosols and gases from diesel-powered equipment. It includes information collected by researchers at the National Institute for Occupational Safety and Health/Office of Mine Safety and Health Research (NIOSH/OMSHR).

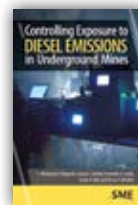
The book includes comprehensive, mine-specific programs for use by mechanics, mine ventilation engineers, industrial hygienists, mine managers, union health and safety representatives, and personnel responsible for the acquisition of diesel vehicles, engines, exhaust aftertreatment systems, fuels, and lubricants.

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Copper Leaching, Solvent Extraction, and Electrowinning Technology

Edited by Gerald V. Jergensen II

This book recognizes the growing role of solvent extraction and electrowinning technology—an efficient and cost-effective process for extracting copper—in the global copper business. These proceedings document the status of the SX-EW business, representing a substantial body of historical, scientific, engineering, and commercial information on the technology's growth and application. The book includes the following sections: Business and Technology of SX-EW, Theory and Practice of Copper Leaching, Theory and Practice of Tankhouse Operations, and Theory and Practice of Solvent Extraction.

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Crystalline Silica

In practical language, *Crystalline Silica* addresses what crystalline silica is, where it is found and used, and how it is identified. In addition, the book discusses the regulatory decisions yielding new interest in this ubiquitous substance and presents an overview of the techniques used to determine its presence and abundance. A list of selected readings and supplemental resources and a glossary of terms beyond the scope of this publication round out the text.

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De Re Metallica

By Georgius Agricola

Originally published in 1556, Agricola's groundbreaking *De Re Metallica* was the first mining book based on field research and observation. For almost 200 years, it remained the only authoritative work in this area, and by modern times it had become one of the most highly respected scientific classics on the subject. The oft-referenced book's original Latin text prevented its wider use until 1912, when future president Herbert Clark Hoover and his wife translated *De Re Metallica*. Printed in a limited edition, the work was quickly acquired by book collectors, historians, and medievalists who found much to be learned from its pages. The book contains an unprecedented wealth of material on alluvial mining, alchemy, silver refining, smelting, surveying, timbering, nitric acid making, and hundreds of other phases in the medieval art of metallurgy.

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Design-Build Subsurface Projects, 2nd edition

Edited by Gary S. Brierley, David H. Corkum, and David J. Hatem

With its opportunities for cost containment and substantial risk transfer, design-build is increasingly becoming the delivery method of choice for owners with challenging funding limitations. But deciding to use the design-build system for underground projects is one thing; successfully implementing it is quite another.

Design-Build Subsurface Projects can bridge that gap. This cutting-edge book provides a straightforward, comprehensive look at how to make design-build work on complicated projects involving tunnels, highways, dams, and deep foundations. The authors represent a "who's who" of subsurface construction experts. Drawing on their wealth of practical experience, they spell out a list of common sense best practices that can be used by today's project owners and designers.

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Designing the Coal Preparation Plant of the Future

Edited by Barbara J. Arnold, Mark S. Klima, and Peter J. Bethell

Most coal preparation books focus on theory or day-to-day issues and operations. *Designing the Coal Preparation Plant of the Future* provides a unique, thought-provoking look at the industry from a different point of view—that of the preparation plant designer or engineer. How can we design more effective plants and what will plants look like in the future? What are the new techniques for designing plant layouts, monitoring performance, and building in preventive maintenance? What challenges face the industry, and how can operators capitalize on opportunities to maximize yield, reduce costs, and improve efficiency?

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Diamond Deposits: Origin, Exploration, and History of Discovery

By Edward I. Erlich and W. Dan Hausel

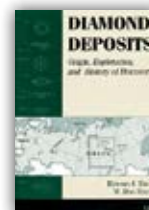
The material found in *Diamond Deposits* provides a foundation for discussing some of the most fundamental problems of theoretical geology, such as the timing of geological events and the development of cratonic areas. Written for geologists and diamond prospectors, this book provides a general overview of diamond exploration and exploitation. The text covers how to find, recognize, and evaluate the potential of diamond deposits. The book offers examples of these processes by reviewing the history of important diamond discoveries in the western United States and Russia. *Diamond Deposits* primarily focuses on the geology of common diamond host rocks, including kimberlite and lamproite. It also reviews the occurrence of some unconventional host rocks that have produced notable diamond discoveries.

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Diccionario de Minería

An English-Spanish / Spanish-English Mining Dictionary
By Maria Isabel Sillano and Jorge Pérez Rojas

This dictionary provides clear English-to-Spanish and Spanish-to-English translations of more than 4,500 mining and geology terms shown in context. Its unique, visual approach lends itself to quick and accessible translation. Use the alphabetical lists to search for terms and learn their Spanish or English equivalents. In addition to translations, each entry includes a number in square brackets that corresponds to one of 15 process-specific sections. These full-color sections allow you to view translated terms in context. Descriptive graphs, diagrams, and photos further enhance the translations. Translation has never been easier or more interesting.

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Dictionary of Mining, Mineral, and Related Terms, 2nd edition

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By F.-W. Wellmer, M. Dalheimer, and M. Wagner

Economic Evaluations in Exploration is ideal for the economic geologist who deals with the evaluation of deposits at an early stage of development. It offers rules for quick-and-easy calculations based on the application of approximate data. It provides a complete set of rules and methods to enable performance of a quick initial evaluation of the deposit without the support of specialists or computers. All rules for calculations are illustrated with examples, mistakes, and pitfalls the authors encountered during their careers. The case histories, exercises, metal prices and terminology, especially concerning reserves and resources, have been fully updated in this second edition.

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Environmental Considerations in Energy Production

Edited by John R. Craynon

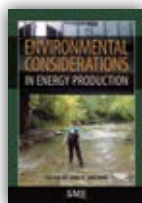
Environmental Considerations in Energy Production contains submissions by energy professionals from around the world who discuss a wide range of topics on energy production, including coal mining, oil and gas production, and electrical power generation, as well as the impacts on society and the environment. The papers present existing and emerging issues, best practices and techniques, and appropriate and innovative solutions to meet the present and future challenges of energy production. These proceedings contain complete papers and abstracts for presentations where a full paper was not warranted. The abstracts are included as a resource to readers who may be interested in contacting those presenters.

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Equipment Management: Key to Equipment Reliability and Productivity in Mining, 2nd edition

By Paul D. Tomlinson

Maintenance has typically been regarded as a "necessary evil" rather than a vital contributor to effective mining operations. Today's enlightened mining managers acknowledge the urgent need for a new approach. An integrated and accessible companywide strategy is essential to succeeding in today's fiercely competitive, high-stakes marketplace.

Equipment Management explains how to make that strategy come alive. Essential reading for mining professionals, this book explains how to create an environment and a culture that allow maintenance to thrive. Author Paul D. Tomlinson draws on more than 35 years of direct, worldwide maintenance-management consulting experience in the design, implementation, and evaluation of maintenance programs for heavy industry. He explains how an equipment management strategy successfully focuses the efforts of all mining departments on the essential task of delivering consistently reliable production equipment, guaranteeing a profitable operation.

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Equipment Management Workbook

By Paul D. Tomlinson

The *Equipment Management Workbook* is a companion to the highly acclaimed *Equipment Management: Key to Equipment Reliability and Productivity in Mining*. The workbook's step-by-step approach focuses on the most critical aspects of a successful maintenance management program. Each chapter challenges the reader to recall the real-world experiences and recommendations from the text. Tomlinson's textbook and workbook comprise a how-to guide that enables mining organizations to implement a comprehensive equipment management strategy that ensures equipment reliability, as well as workforce productivity.

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Evaluating Mineral Projects: Applications and Misconceptions

By Thomas F. Torries

Designed to complement traditional engineering texts, this book emphasizes mineral project evaluation concepts rather than computational details. *Evaluating Mineral Projects* describes the various economic evaluation techniques employed (including conventional cost analysis, discounted cash flow, and option analysis), their uses, and their relationships with geological, technological, and financial assessments. Torries also discusses the strengths and weaknesses of commonly practiced evaluation methods. This book explains the practical difficulties with conducting an analysis and correctly interpreting the results, as well as alternative techniques.

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Extracting the Science: A Century of Mining Research

Edited by Jürgen Brune

Extracting the Science: A Century of Mining Research is an authoritative compilation of research and a description of technological achievements written especially for mine operators, researchers, faculty, and students of mining education programs, as well as regulators and enforcement agencies—indeed, anyone concerned with improving the health and safety of mine workers while enhancing mine productivity.

You will learn the latest information on preventing catastrophic events, such as fires and major roof or slope failures; providing adequate ventilation to dilute explosive or toxic gases and dusts; avoiding hearing loss; offering emergency communication and life support for miners trapped underground; developing training materials and guidelines for improving safety, health, and productivity in mines; and a host of other critical topics.

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Froth Flotation: A Century of Innovation

Edited by Maurice C. Fuerstenau,
Graeme Jameson, and Roe-Hoan Yoon

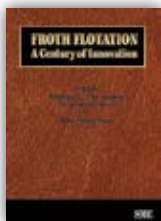
This thorough volume describes state-of-the-art research and practice in mineral froth flotation as known and practiced a century after its introduction. Recognized experts provide in-depth coverage on the historical aspects of flotation; flotation fundamentals; flotation chemistry; flotation cells, modeling, and simulation; and flotation plant practice.

Froth Flotation is an invaluable reference for industry professionals, researchers, and graduate students. A supplemental CD includes presentations from the Centenary of Flotation Symposium managed by the Australasian Institute of Mining and Metallurgy.

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Functional Fillers and Nanoscale Minerals: New Markets/New Horizons

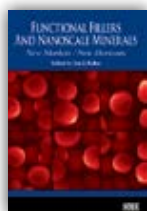
Edited by Jon J. Kellar

Mineral additives are widespread in industrial manufacturing processes. Mineral fillers are used to extend raw materials and cut costs. Minerals and associated inorganics have been increasingly used for their functionality and other mineral-specific qualities. Likewise, the emergence of nanoscale minerals parallels the global pursuit of nanotechnology. These minerals play an important role in the low-cost, high-performance application of nanotechnology.

Functional Fillers and Nanoscale Minerals is intended for mineral suppliers, industrial users of mineral fillers, and those concerned with new trends in mineral processing and nanotechnology. Contributions by leading international researchers highlight the emerging markets and applications of functional fillers and nanoscale minerals.

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Fundamentals of Aqueous Metallurgy

By Kenneth N. Han

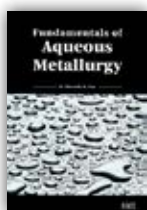
Intended for college and graduate-level instruction, this book presents the fundamentals of aqueous metallurgy and its applications in mineral processing operations. The text presents the physicochemical principles of various water-based processes, including interfacial phenomena, hydrometallurgy, and metallurgical kinetics.

A valuable reference for those studying mineral processing, resource recovery, and the corrosion of metals and alloys, *Fundamentals of Aqueous Metallurgy* also serves environmental and chemical engineers, chemists, and mineral processing engineers responsible for mineral processing plant design and operations. To enhance learning and provide practical experience, each chapter closes with a series of homework problems based on the concepts presented. Solutions to the problems, including full explanations, are provided in the back of the book.

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Geological Methods in Mineral Exploration and Mining, 2nd edition

By Roger Marjoribanks

This practical step-by-step guide describes the key geological field techniques needed by today's exploration geologists involved in the search for metallic deposits. The techniques described are fundamental to the collection, storage, and presentation of geological data and their use to locate ore.

Geological Methods in Mineral Exploration and Mining explains the various tasks that the exploration geologist is asked to perform in the sequence in which they might be employed in an actual exploration project. Hints and tips are given. The steps are illustrated with numerous examples drawn from real projects. The book emphasizes traditional skills and shows how they can be combined effectively with modern technological approaches.

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Geology: Basics for Engineers

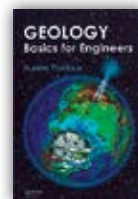
By Aureule Parriaux

Geology: Basics for Engineers examines Earth's physical and chemical characteristics, the nature and the properties of rocks and unconsolidated deposits/sediments, the action of water, and how the earth is transformed by various phenomena at different scales of time and space. The book shows the engineer how to take geological conditions into account in projects and how to intelligently exploit a wide range of natural resources, reduce geological hazards, and manage subsurface pollution.

Through a problem-based learning approach, this instructional text imparts knowledge and practical experience to engineering students as well as experts in the fields of civil engineering, environmental engineering, earth sciences, land and urban planning, and architecture. A supplemental DVD presents solutions to the problems presented and animations illustrating additional features of the living Earth.

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The Georgia Kaolins: Geology and Utilization

By Jessica Elzea Kogel, Sam M. Pickering Jr., Evgenya Shelobolina, Tim Chowns, Jun Yuan, and David M. Avant Jr.

The Georgia Kaolins looks at the various disciplines involved in kaolin production, including geology, mining, mineralogy, geochemistry, and microbiology. It gives industry practitioners a better understanding of this versatile material in order to improve exploration, processing, and product quality. The text presents an excellent overview of the types and grades of kaolin, their mineralogy, and how these qualities relate to various commercial applications, and processing techniques employed to remove impurities and improve kaolin quality.

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Geotechnical Baseline Reports for Construction: Suggested Guidelines

By Randall J. Essex

Geotechnical Baseline Reports for Construction examines the role of the geotechnical baseline report (GBR) as a means of allocating and managing the risks associated with subsurface construction. The guidelines identify the rationale for using GBRs as risk-management tools, the organization and content of a GBR, and the importance and benefit of ensuring compatibility between the GBR and other contract documents. The book also addresses owners' perspectives and the importance of involving experienced professionals in GBR preparation and review.

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Geotechnical Design for Sublevel Open Stopping

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Edited by Ernesto Villaescusa

Geotechnical Design for Sublevel Open Stopping details the design and operation of sublevel open stopping, including variants such as bench stopping. The book discusses increases in sublevel spacing due to advances in the drilling of longer and more accurate production holes as well as advances in explosive types, charges, and initiation systems. Improvement in slot rising through vertical crate retreat, inverse drop rise, and raise boring are considered. Rock mass characterization is covered in detail because increases in sublevel spacing have preordained that larger, unsupported stope walls must stand without collapsing. Methodologies to design optimum open spans and pillars are described as are rock reinforcement of development access and stop walls, and fill masses to support the resulting stope voids. The text also reviews the sequencing of stopping blocks to minimize in situ stress concentrations and examines dilution control action plans and techniques to back-analyze and optimize stope wall performance. It features numerous case studies from the world-renowned Mount Isa Mines and examples from underground mines in Western Australia.

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By Syd S. Peng

Ground Control Failures contains a storehouse of color photos investigating 50 case studies about topics such as pillar failures, roof falls, cutters, roof bolting failures, floor heave, multiple-seam mining, flooding, abandoned mine workings, and longwalls from coal producing areas in the United States, Canada, and Mexico.

Each case study identifies the year, the mining and geological conditions encountered, a summarized history, current ground control problems, and recommended solutions and results. Detailed event illustrations demonstrate the varying forms that change over time and the different degrees of failure severity that can occur in a mine's structure.

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Grouting Equipment Manual: Selection, Operation, Maintenance, and Repair

By Donald C. Hegebarth

Grouting Equipment Manual introduces various types of equipment employed in pressure grouting applications performed in geotechnical works and examines the operating principles and maintenance issues relative to each equipment type.

Pressure grouting encompasses a wide variety of applications and operations, including dam foundation grouting, soil stabilization and permeation, consolidation and compaction grouting (except low mobility), water cutoff and structural stabilization in rock tunnels, deep foundations via drilled piers, underwater concrete, structural concrete repairs, raising of settled slabs and structures, rock and soil anchors, and machine foundations and bases. The applications for pressure grouting operations are almost limitless, as the equipment can be employed anywhere fluid grout can be used.

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Guidelines for Evaluating Water in Pit Slope Stability

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Edited by Geoff Beale and John Read

This book offers slope design practitioners a road map that will help them decide how to investigate and treat water pressures in pit slopes.

Guidelines for Evaluating Water in Pit Slope Stability includes six sections that outline the latest technology and best practice procedures for hydrogeological investigations. The sections cover the framework used to assess the effect of water in slope stability; how water pressures are measured and tested in the field; how a conceptual hydrogeological model is prepared; how water pressures are modeled numerically; how slope depressurization systems are implemented; and how the performance of a slope depressurization program is monitored and reconciled with the design.

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Guidelines for Open Pit Slope Design

Edited by John Read and Peter Stacey

Guidelines for Open Pit Slope Design is a comprehensive, four-color account of the open pit slope design process. Created as an outcome of the Large Open Pit Project—an international research and technology transfer project on the stability of rock slopes in open pit mines—this compendium presents guidelines for required slope design processes and the tools available to slope design practitioners.

This book links innovative mining geomechanics research on the strength of closely jointed rock masses to the most recent advances in numerical modeling, creating more effective ways for predicting rock slope reliability in open pit mines. It identifies the key elements of slope design, the required levels of effort, and the acceptance criteria needed to adhere to best practices in pit slope investigation, design, implementation, and performance monitoring.

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Handbook of Coal Analysis

By James G. Speight

Handbook of Coal Analysis provides readers with everything they need to know about testing and analyzing coal. It explains the meaning of test results, and how these results can predict coal behavior and its corresponding environmental impact during use. The thorough coverage of coal analysis includes detailed information on necessary standard tests and procedures; explanation of coal behavior relative to its use alongside the corresponding environmental issues; and coverage of nomenclature, terminology, sampling, accuracy, and precision of analysis.

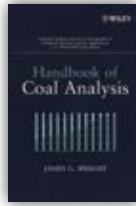
Step-by-step test method protocols are included for proximate and ultimate analysis, mineral matter, and physical, electrical, thermal, mechanical, spectroscopic, and solvent properties.

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History of Flotation

By Alban Lynch, Greg Harbort, and Mike Nelson

When the improbable process of flotation transformed the nonferrous mining industry—100 years ago, no one could have predicted that floating highly specific gravity particles on water would become one of the world's greatest technologies.

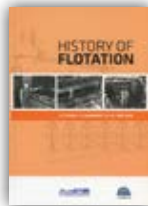
This book chronicles the early days of flotation and the evolution of this technology, as well as the engineers, managers, and financiers who supported flotation experimentation and development. Flotation practitioners will enjoy learning about the history of flotation machines, the ingenuity applied to this process, and the competitive tensions between manufacturers.

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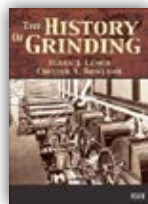
Chapters cover size reduction from the Stone Age to the Space Age; the science of grinding and the scientists behind it; hand stones, water wheels, windmills, and beyond; stamp mills and crushers; roller mills; tumbling mills; fine-grinding mills; classifiers; explosive rock breakage; and size reduction in the 21st century. The book includes photos and illustrations gleaned from numerous sources, as well as a glossary, reference list, and complete index.

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Today's mining professionals must meet the ever-increasing challenges of larger, more efficient, and safer ore handling systems. New technological developments have ushered in a host of different transport solutions. These advancements can dramatically impact the financial requirements for new projects, thus shaping design decisions. *Hoist & Haul 2010* provides the most current and cutting-edge insights into these important issues. From ore handling at the point of extraction to stockpiling on the surface, dozens of case histories document the latest trends in shaft hoisting, incline and drift hoisting, conveying, hydraulic hoisting, rail haulage, tramming, and truck haulage.

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This resource tackles advances in primary and secondary resource recovery with sections on environmental hydrometallurgy, research and industrial applications, base and precious metals, and leaching. Case histories from around the world provide a hands-on look at how industry leaders continue to solve problems and set new standards. Experts share insights on minerals biotechnology, plant design and operation, the challenges of plant startups, and solutions for reducing energy consumption in all aspects of unit operations.

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Edited by Jessica Elzea Kogel, Nikhil C. Trivedi, James M. Barker, and Stanley T. Krukowski

This widely read international reference is one of the most authoritative sources for timely information on industrial minerals and rocks, the markets they serve, and their many uses. Changes in the global economy have greatly impacted the mining, processing, and marketing of industrial minerals. Additionally, new technologies and customer-based globalization have driven fast-paced innovation in processing, packaging, transporting, and end use. *Industrial Minerals & Rocks* examines these important and diverse changes and their complex ramifications.

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By Jean-Michel (JM) Rendu

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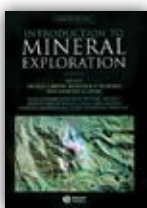
Introduction to Mineral Exploration, 2nd edition

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Introduction to Mineral Exploration provides a comprehensive overview of all aspects of mineral exploration. It covers the nature of mineral exploration and considers other factors essential to successful exploration—from target evaluation to feasibility studies for extraction and production. The book includes six detailed case studies, selected for the range of problems addressed and the issues they introduce to the mineral explorationist. This is essential reading for upper-level undergraduates studying ore geology, mineral exploration, mining geology, coal exploration, or industrial minerals, and a trusted reference for professional geologists.

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Introduction to Tunnel Construction

By David Chapman, Nicole Metje, and Alfred Stärk

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Introductory Mining Engineering presents the latest information on such technologies as remote sensing, GPS, geophysical surveying, and mineral deposit evaluation, as well as continuous integrated mining operations and autonomous trucks. This edition includes information on landscape restoration, regional planning, wetlands protection, and subsidence mitigation. Chapters discuss coverage of environmental responsibility, regulations, and health and safety issues.

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By Adrian Day

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Management of Mineral Resources: Creating Value in the Mining Business

By Juan P. Camus

The mining industry's strategy for coping with low profitability has primarily focused on controlling production costs. Despite mechanization, automation, and other technical improvements, mining's aggregate profitability still falls far short of that realized by most industries. Author Juan Camus contends that additional technical knowledge is not required, but rather, the implementation of sound management practices that utilize the existing knowledge base more productively.

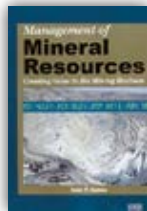
Management of Mineral Resources explores mining management—the process of generating plans and supervising their implementation. This book is concerned with the analysis of some of the internal, controllable factors that influence mining production effectiveness. It combines the best thinking in mining and management, allowing practitioners to devise concrete strategies for generating maximum shareholder value.

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By Paul D. Tomlison

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Topics include overview of mine management; occupational health and safety; environment management; stakeholder relationships; human resources; capital investment and project development; operations management; finance and administration; minerals and markets; and strategic planning. Also included is a CD that covers guidelines for technical economic evaluations of minerals industry projects.

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Edited by James J. Gusek and Linda A. Figueroa

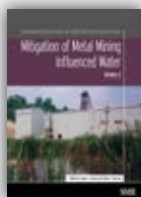
Mitigation of Metal Mining Influenced Water is the series' "how to fix it" volume. You will learn how to reduce mining influenced water concerns by disrupting the geochemical relationship that contributes to the release of metals and/or acidity. Industry experts provide insights into understanding a mine's physical environment and how it can influence waste and drainage quality. The mining and processing situations discussed in the case histories offer insights into planning and design considerations by illustrating what has worked and what has not.

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The mineral exploration and mining industry is a dynamic, diverse, and profitable sector involving a wide range of people in different stages of their professional careers and investments. At the same time, it is an industry based on applied science and technology with a lexicon not widely understood by many of these participants. This book bridges that gap.

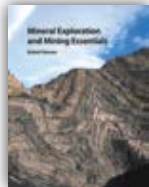
Mineral Exploration and Mining Essentials is an indispensable primer for anyone interested in the mineral exploration and mining industry but lacks experience in the field. Consider this book if you need to make informed mining-related investment decisions; want to better evaluate mineral-development proposals; or are interested in the basics of exploration, discovery, geology, and mining.

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By Barry Wills and Tim Napier-Munn

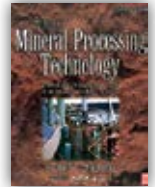
Mineral Processing Technology provides practicing engineers and students of mineral processing, metallurgy, and mining with a comprehensive overview of ore-processing techniques used in modern processing installations. This renowned book clearly explains the principles and practices of mineral processing with real-work examples. It highlights the latest technologies in processing increasingly complex refractory ore, new equipment, and process routes. It also covers the developments and the challenges facing the mineral processor, particularly the environmental concerns involved in improving the efficiency of existing processes and waste management.

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This is an important reference for students of engineering and applied science and geology; practicing engineers, geologists, and scientists; students of economics, social sciences, and related disciplines; professionals in government service in areas such as resources, environment, and sustainability; and non-technical professionals working in the minerals industry or in sectors servicing the minerals industry.

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This guide presents 5127 terms, 637 symbols, 507 references, 236 acronyms, 108 formulas, 68 figures, 47 tables, 58 abbreviations, and 7 shortened forms.

Terms are included from related disciplines, such as chemistry, detonics, fractography, fracture dynamics, mechanics and strength of materials, micro mechanics, geology, geophysics, image analysis, petrology, physics, seismology, and more.

This is an essential reference for engineers and advanced students in mining, geotechnical, geological, tunneling, and construction engineering.

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This compilation represents the scientific and technical achievements for mineral deposits mining intensification based on effective use of modern techniques and technologies. Specific attention is paid to progressive and innovational technologies in the coal industries of leading countries.

Mining of Mineral Deposits focuses the mining of coal and ores, geomechanical processes, labor protection and ventilation, and borehole extraction of minerals. The book covers the results of new equipment introduction; experiments on mutual interaction of roof support elements, protective construction, and near-the-contour rock mass; analytical and calculation methods of geomechanical tasks solution; development of gas hydrates and technologies of underground coal gasification; studies on environment protection; economic aspects; management and marketing in mining production, and other important aspects of mineral deposits exploitation.

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By Victor Rudenko

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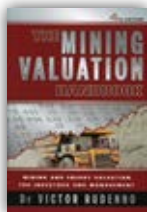
Inside you will find extensive commentary relevant to the mining industry; valuation concepts; worked examples and feasibility studies; the role of resources and reserves; commodity values and forecasting; real option analysis; and extensive commodity profiles.

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By R.P. King, Edited by C.L. Schneider and E.A. King

Quantitative modeling techniques and methods are central to the study and development of process engineering, including mineral processing. Models in mineral processing have been difficult to develop because of the complexity of the unit operations that are used in virtually all mineral recovery systems. The author covers the field of quantitative modeling of mineral processing equipment and uses models to simulate the actual behavior of ore-dressing and coal-washing equipment in industrial practice. Many examples are included to explain the application of some of the commonly used models, most of which described in the book are included in the ModSim software, the plant-wide simulator that is included on the companion CD. The simulator is an important part of the book. Almost all of the models described are not amenable to normal mathematical solutions or easy computation using calculators or spreadsheets. The simulation techniques done with ModSim allow complex problems to be tackled with minimal time and expense.

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Modern American Coal Mining: Methods and Applications

Edited by Christopher J. Bise

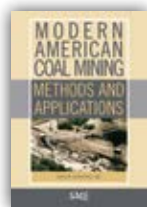
Modern American Coal Mining: Methods and Applications covers a full range of coal mining and coal industry topics, with chapters written by leading coal mining industry professionals and academicians. Highlights from the book include coal resources and distribution, mine design, advances in strata control and power systems, improvements in surface mining, ventilation to reduce fires and explosions, drilling and blasting, staffing requirement ratios, management and preplanning, and coal preparation and reclamation. The text is enhanced with 11 case studies that are representative of underground and surface mines in the United States. Narrative descriptions and appropriate mine plans are presented, with attention given to unique features and situations that are addressed through mine design and construction.

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Open Pit Mine Planning & Design, 3rd edition

By William Hustrulid, Mark Kuchta, and Randall Martin

Open Pit Mine Planning and Design is the most complete and authoritative account of modern open pit mining available.

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Volume 2 includes CSMine and MicroModel, user-friendly mine planning and design software packages developed specifically to illustrate the practical application of the involved principles. This volume also includes tutorials and user's manuals for the software and eight orebody case examples, including drill hole data sets for performing a complete open pit mine evaluation.

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Politics of Mining: What They Don't Teach You in School

Edited by Deepak Malhotra

The mining industry presents many challenges, such as the necessity of working in remote locations with unfamiliar cultures; the business of permitting, environmental protection, and sustainable development; the existence and persistence of negative stereotypes about the business; and the sometimes tricky mechanics of training and transferring technology. In addition, tensions may arise between the competing interests of the various disciplines represented—engineers, attorneys, accountants, and environmentalists often encounter difficulty in speaking a common language. Engineering schools rarely prepare students for these issues, but the *Politics of Mining* does.

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Principles of Mineral Processing

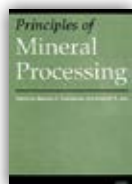
Edited by Maurice C. Fuerstenau and Kenneth N. Han

This comprehensive reference examines all aspects of mineral processing, from raw materials handling to separation strategies to waste product remediation. The book incorporates state-of-the-art developments from the engineering, chemistry, computer science, and environmental science fields and explains how these disciplines contribute to the ultimate goal of economically producing minerals and metals from ores. Chapters cover the following topics: particle characterization; size reduction and liberation; size separation; movement of solids in liquids; gravity concentration; magnetic and electrostatic separation; flotation; liquid-solid separation; metallurgical balances and efficiency; bulk solids handling; hydrometallurgy and solution kinetics; mineral processing wastes and their remediation; and economics of the minerals industry.

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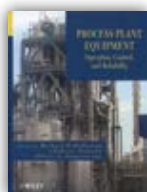
Process Plant Equipment: Operation, Control, and Reliability

Edited by Michael D. Holloway, Chikezie Nwaoha, and Oliver A. Onyewuenyi

With this book as their guide, readers have the information and practical guidelines needed to select, operate, maintain, control, and troubleshoot process plant equipment so that it is efficient, cost-effective, and reliable throughout its lifetime. Following careful explanatory text and instruction, readers will find that they are better able to reduce downtime and unscheduled shutdowns, streamline operations, and maximize the service life of processing equipment.

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Project Management for Mining: Handbook for Delivering Project Success

By Robin J. Hickson and Terry L. Owen

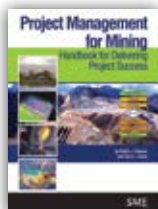
Opening a successful new mine is a vastly complex undertaking entailing several years and millions to billions of dollars. In today's world, when environmental and labor policies, regulatory compliance, and impact on the community must be factored in, you cannot afford to make a mistake. Written by two hands-on, in-the-trenches mining project managers with decades of experience who bring some of the world's most successful, profitable mines into operation on time, within budget, and ethically, *Project Management for Mining* gives you step-by-step instructions in every process you are likely to encounter.

Beginning with a discussion of mining ethics and governance, this clearly written handbook walks you through all the project management steps—defining the scope, performing prefeasibility and feasibility studies, gaining societal acceptance, minimizing the impact and risks, creating workable schedules and budgets, setting in place the project execution plan, assembling the human resources, hiring the contractors, and establishing project controls—and then on into the delivery of the engineering and design, construction, progress reviews, pre-launch commissioning, and ramping up for operation.

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By Gregory M. Anderson and Stephen R. Rosene

Everyone agrees—one serious accident is too many. *Race Against Time* introduces you to a proven process for eliminating such incidents from mining processes, as well as everyday life. The book demonstrates how each of us impacts safety in the mining industry and how our individual commitment can make a real difference in every miner's life. Easy to read, this accessible book provides a blueprint to building a culture of mine safety.

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Edited by Michael DePonio and Chris Dixon

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This book digs deep into every aspect of the business, presenting practical, no-nonsense information about demanding and high-profile projects. It will be useful for engineers, designers, geologists, contractors, and others who want to learn how their colleagues from across the globe are addressing the challenges of the profession.

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Recent Advances in Mineral Processing Plant Design

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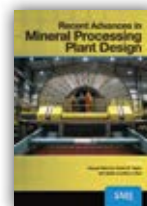
A compilation of engaging and insightful papers from the prestigious 2009 plant design conference, this volume is a sequel to *Mineral Processing Plant Design, Practice, and Control*, an industry standard published in 2002.

You will learn about the role of innovation, how to finance and conduct feasibility studies, and how to reduce your plant's carbon footprint. The book also includes extensive discussions on the latest advances in flotation, extractive metallurgy, crushing and grinding, separation processes, and process developments. Case studies and plenary speakers highlight which process design concepts work well and which do not.

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Recommended Contract Practices for Underground Construction

Edited by William W. Edgerton

Underground construction is more complex than ever, with the growing demand for space, the rapid development of new technologies, and the increased involvement of stakeholders. This book addresses one of the most challenging and frustrating characteristics of underground construction: contract language that fails to account for the unique nature of building underground.

Recommended Contract Practices for Underground Construction represents the first industry-wide effort to improve contract procedures in more than 30 years. This manual is an indispensable resource for contractors, consultants, suppliers, and owners anticipating underground projects. The authors suggest better practices for all project stages that will improve decision making and positively affect contracts. Part 1 focuses on the practices and disciplines that build the foundation for effective contracts during the early project phases. Part 2 discusses best practices for contract provisions, payment mechanisms, and dispute resolution.

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By Binglin Yang

Regulatory Governance & Risk Management is the first book that addresses the diffusion of risk-based governance in the coal mining industry from a health and safety standpoint. Using a diffusion approach and comparisons between Australia and the United States, this book examines mechanisms that both drive and prevent the diffusion of risk-based governance in the coal mining industry.

This is a timely work given the Upper Big Branch coal mine explosion of April 2010. After this disaster, many asked why an enhanced level of enforcement has not prevented catastrophic accidents from occurring and why risk-based governance, which helps other countries achieve better safety performance, has not been practiced in the United States. This book answers these questions and makes recommendations on how to remove barriers in moving toward risk-based governance.

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By Sebnem Duzgun and Nuray Demirel

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Responsible Mining: Case Studies in Managing Social & Environmental Risks in the Developed World

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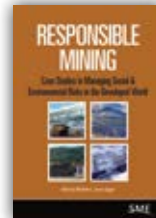
Responsible Mining is your comprehensive guide to addressing social and environmental risks at mines in the developed world.

This book gathers case studies of best practices across the full range of issues. With examples from four continents, you can learn from both your home territory and around the world. Seventy-two leading mine engineers, forestry scientists, conservationists, environmental consultants, sustainability professionals, and geologists from prominent universities, extraction businesses, nongovernmental organizations, and governments have come together within these pages to lead you safely and profitably toward socially, environmentally, and economically beneficial mining practices.

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Rock Slope Stability

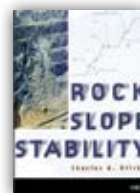
By Charles A. Kliche

Whether you are involved in surface mine design, surface mine production, construction, education, or regulation, this is an important addition to your reference library. *Rock Slope Stability* describes the basic rock slope failure modes and methods of analysis—both kinematic and kinetic techniques. Chapters cover geotechnical and geomechanical analysis practices, hydrology, rock slope stabilization techniques, and geotechnical instrumentation and monitoring. Numerous examples, drawings, and photos enhance the text.

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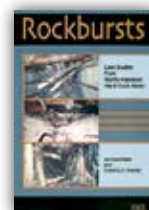
By Wilson Blake and David G.F. Hedley

Rockbursts pose a significant and growing threat to mines—and miners—throughout North America. High stress on brittle rock structures during mining operations can produce sudden, explosive reactions that result in costly mine failures, serious injury, and even death. Through a series of case studies, this book documents the experiences of 15 of the most rockburst-prone mines in the United States and Canada over the last century. The book provides a historical analysis of rockburst activity along with state-of-the-art strategies for anticipating and preventing this dangerous and disruptive phenomenon.

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Separation Technologies for Minerals, Coal, and Earth Resources

Edited by Courtney A. Young and Gerald H. Luttrell

Separation Technologies for Minerals, Coal, and Earth Resources is an authoritative digest of the latest developments in the mineral processing industry. Dozens of authors share their insights on how practitioners can develop earth resources more economically while simultaneously addressing vital factors ranging from sustainability to environmental stewardship.

The book examines coal processing, surface forces and hydrophobicity, process improvements and environmental controls, dewatering and drying, gravity separation, industrial minerals flotation, base metal flotation, flotation equipment and practice, process reagents, magnetic and electrostatic separation, modeling and process control, and resource engineering. Important current issues such as gas hydrates, oil sands, secondary materials, metals and waste, and process waters are also discussed.

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Slope Stability in Surface Mining

Edited by William A. Hustrulid, Michael K. McCarter, and Dirk J.A. Van Zyl

So far, the 21st century has seen mines more than 1,100 meters deep; waste rock embankments 600 meters tall; tailings dams 200 meters high; and heap leach facilities have topped 150 meters.

The push toward higher, deeper, and steeper, combined with the use of larger and more productive equipment, continues to test our tools and capabilities.

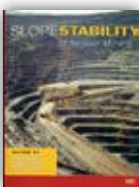
Slope Stability in Surface Mining documents the progressive rise in technical understanding and sophistication in the field. Only by continuously collecting and exchanging information can design concepts, construction methods, monitoring strategies, and reclamation practices keep pace with the times. This text creates a common platform on which to base correct, economical, and safe slope design and construction decisions.

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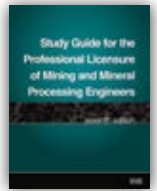
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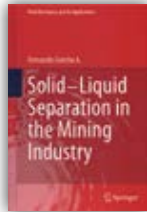
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Edited by J.A. Botin

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Edited by Richard E. Gertsch and Richard L. Bullock

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Technology Innovation in Underground Construction

Edited by Gernot Beer

A primary focus in the technological development of underground engineering is simplifying practical execution and reducing time, cost, and risk in the construction and maintenance of underground facilities such as tunnels and caverns. New tools for designers, instant data access for engineers, virtual prototyping and training for manufacturers, and repair robotic devices for maintenance can accomplish these goals.

Technology Innovation in Underground Construction presents technological innovations in underground design, construction, and operation and comprehensively discusses novelties in ground improvement, simulation, process integration, safety, monitoring, environmental impact, equipment, boring and cutting, personnel training, materials, robotics, and more. The innovations presented result from a large research project involving many players in the field and aimed at advancing underground engineering.

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The World of Mining

By Richard Woldendorp, Jim Wark, Karlheinz Spitz, and John Trudinger

In this truly unique celebration of mining, breathtaking aerial photographs by award-winning photographers Jim Wark and Richard Woldendorp accompany ground-level pictures of mines, mine-side oddities, and mine communities. Informed but breezy narratives by mining experts

John Trudinger and Karlheinz Spitz identify and explain the images.

The World of Mining shows that mining and associated activities can be impressive, attractive, and even spectacular. The book illustrates most, if not all, aspects of mining and mineral processing, in all its varieties, and from different environments throughout the world. It illustrates the colorful history of mining and its importance to the development of civilization as we know it. It depicts the wide range of activities in modern mining, from exploration to mine closure, as well as traditional mining by skilled practitioners using methods adapted to local conditions.

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Underground Mining Methods: Engineering Fundamentals and International Case Studies

Edited by William A. Hustrulid and Richard L. Bullock

Underground Mining Methods has become the standard for practicing mining engineers and students alike, covering mining principles and techniques.

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Underwater Tailing Placement at Island Copper Mine: A Success Story

By George W. Poling, Derek V. Ellis, James W. Murray, Timothy R. Parsons, and Clem A. Pelletier

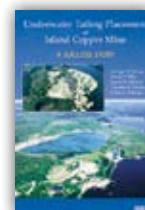
This book documents the use of deep-sea tailing placement at the Island Copper Mine on Canada's Vancouver Island, providing the most extensive study on underwater tailing placement ever conducted. Over the course of 30 years, more than 400 million tons of tailing solids were deposited on the ocean floor with minimal environmental impact.

The study evaluates the relevant issues associated with the implementation of a deep-sea tailing placement program, including engineering, chemical, biological, and environmental considerations.

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Water in Mineral Processing

Edited by Jaroslaw Drelich

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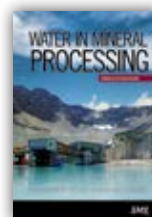
Water in Mineral Processing provides a comprehensive, state-of-the-art examination of this vital issue. A compilation of papers presented at the First International Symposium on Water in Mineral Processing, this book shares the insights of dozens of respected experts from industry and academia.

A significant portion of the content is devoted to saline solutions and processing with sea water. Other chapters explore the latest in water treatment and biological methods, the effect of water quality on minerals processing, and water and tailings management.

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