Coal Fly Ash Beneficiation - Treatment of Acid Mine Drainage with Coal Fly Ash

The present book deals with various, very significant topics of coal fly ash beneficiation, such as treatment of acid mine drainage with coal fly ash, toxic metal adsorption using coal fly ash, recovery of metals from coal fly ash and phytoreclamation of abandoned acid mine drainage site after treatment with coal fly ash, the status of research in coal fly ash utilization and applications and some other related topics in this growing and increasingly important research area. Overall, coal fly ash beneficiation has come to assume an important role in most areas of waste management research today. Continued growth and emphasis on scientific research is expected in all areas of waste management and conversion of waste to wealth technologies.

Recovery of Byproducts from Acid Mine Drainage Treatment

Recent developments have provided the opportunity to recover valuable materials from AMD treatment; this is a sustainable approach that allows to reduce waste while generating incomes that balance the cost of the treatment. This book provides insights to innovative and affordable routes for AMD valorisation that can certainly motivate the mining industry to effectively manage their wastes and minimize environmental impact while generating jobs opportunities.

Acid Mine Drainage - From Waste to Resources

Acid Mine Drainage (AMD) is essentially the flow of water polluted with metals and other substances from existing/old mining areas and is considered as one of the sources of pollution. A wide range of technologies are available for preventing AMD generation and/or treating the AMD before discharge, but there is a shift towards recovery of industrially useful materials and products from AMD. Acid Mine Drainage: From Waste to Resources explores novel methods developed for the reuse and/or recovery of industrially useful materials from AMD including discussing generation, prediction, prevention, and remediation processes. It includes legislation and policy framework governing AMD and its environmental/health impacts. Provides a detailed overview of the mining operations and discusses the geochemical and hydrogeological context of acid mine drainage AMD formation, prediction and impact Presents holistic approach to AMD generation, prediction, prevention, and remediation processes Exclusive material on recycling and recovery of industrially useful materials from AMD Gives detailed overview of the legislation and policy regulatory framework governing the management of AMD Analyses the effects of AMD on the environment and health This volume is aimed at researchers and professionals in metallurgical engineering, chemical engineering, environmental engineering, and mining engineering.

Hard Rock Mine Reclamation - From Prediction to Management of Acid Mine Drainage
Hard rock mines have significant effects on the territories where they operate, through both infrastructure construction as well as resource use. Due to their extractive activities, these mines store large quantities of wastes at the surface, which can be both physically and chemically unstable. Reclamation aims to return a mine site to a satisfactory state, meaning that the site should not threaten human health or security, should not generate in the long term any contaminant that could significantly affect the surrounding environment, and should be aesthetically acceptable to communities. This book focuses on the reclamation of waste storage areas, which constitute the main source of pollution during and after mine operations, and especially issues with acid mine drainage and neutral contaminated drainage. Features: Provides fundamental information and describes practical methods to reclaim mine-waste facilities Compares the different methods and illustrates their application at sites through case studies Identifies new reclamation issues and proposes solutions to address them Presents existing and new technologies to reclaim mine waste disposal areas from hard rock mines in different climatic conditions Integrates reclamation into mine operations and long term performance of techniques used through an interdisciplinary approach With mine site reclamation a young and still emerging science, the training needs for professionals and students working in this field are huge. This book is written from an engineering point of view and in it the authors identify new reclamation issues and propose well-tested as well as innovative approaches to addressing them. Students in graduate programs focused on mines and the environment as well as professionals already working in departments related to mine site reclamation will find this book to be a valuable and essential resource.

Bio-Geotechnologies for Mine Site Rehabilitation

Bio-Geotechnologies for Mine Site Rehabilitation deals with the biological, physical, chemical, and engineering approaches necessary for the reclamation of mine waste. As mining has negative effects on natural resources and deteriorates the quality of the surrounding environment, this book provides coverage across different types of mining industries, which are currently creating industrial deserts overloaded with technogenic waste. The book offers cost-effective strategies and approaches for contaminated sites, along with remediation and rehabilitation methods for contaminated soils and waste dumps. It is an essential resource for students and academics, but is also ideal for applied professionals in environmental geology, mineral geologists, biotechnologists and policymakers. Deals with global and holistic approaches of abandoned mine land rehabilitation Includes mine waste rehabilitation case studies from around the world Covers integrated technologies, such as bioremediation of metalliferous soil Provide strategies for sustainable ecosystems on mine spoil dumps Offers novel methods for the remediation of acid mine drainage

Acid Mine Drainage: The problem and is solutions

Environmental Studies of Mineral Deposits in Alaska

Short articles summarize environmental geochemical studies of metallic mineral deposits in Alaska, including massive sulfide, gold, mercury, chromium, and uranium mines and deposits. The studies report metal and acid concentrations in samples collected around such mines and
deposits, and evaluate environmental effects of the deposits. The articles are written in a style intended to reach a general audience.

**Design Manual - Neutralization of Acid Mine Drainage**

**Acid Mine Drainage in South Africa - Development Actors, Policy Impacts, and Broader Implications**

This SpringerBrief focuses on Acid Mine Drainage (AMD) in the three basins in the Witwatersrand, South Africa. It provides a background to AMD and its impacts from a social science perspective. The South African government and non-governmental organizations’ response to AMD is assessed, as well the socio-economic and developmental effects of AMD. This volume, which is based on the author’s Master’s dissertation at UNISA, involves interviews with a range of experts in the field from government departments, environmental organisations (activists), the private sector (mining), tourism sector and the agricultural sector. The book discusses existing policy documents on AMD and provides recommendations in response to the many socio-economic impacts which have not been fully addressed. A literature review on the global context of AMD is provided. South Africa’s water systems are already severely harmed by climate change, different forms of pollution, and poorly managed sanitation systems. For these reasons, the country is becoming increasingly water-stressed and therefore, water will continue to become much scarcer in the future. As a result of AMD’s continued impact on South Africa’s water systems, as a technical or scientific matter as well as the policy implications for the mining sector, water security and socio-economic sustainability has become a highly contested issue.

**Management and Mitigation of Acid Mine Drainage in South Africa - Input for Mineral Beneficiation in Africa**

South Africa is facing the increasing challenge of acid mine drainage (AMD) whose genesis is the country’s mining history, which paid limited attention to post-mining mine site management. In mineral resource-rich Africa, this has emerged as one of the most daunting challenges of our time. South Africa has been bold in its approach to mitigating this problem, although the challenge is multi-faceted. On a positive note, substantial research has been conducted to confront the challenge. However, thus far, the research has been largely fragmented. This book builds on the work that has been done, but also provides a refreshing multi-disciplinary approach that is useful in addressing the AMD challenges that South Africa and the continent face. Whilst addressing the problem as a scientific and engineering challenge, the book also exposes the economic, policy and legal challenges involved in addressing the problem. The book concludes, quite uniquely, that AMD is an opportunity that can be used by South Africa and Africa to solve problems, such as acute water shortage, as well as mineral recovery operations.

**New Sensor Aids Rare Earth Extraction from Acid Mine Drainage**

Rare earth elements appear in more than 200 consumer products. The race is on to source these elements from abundant and environmentally damaging mining waste.
Sensor developed to detect REE terbium
Scientists at Pennsylvania State University have developed a new sensor that detects rare earth element terbium, EOS reported. The sensor could help miners find terbium in tailings. "It’s a pretty ...

Legislative Energy Committee learns about benefits of extracting rare earth elements from acid mine drainage
17—MORGANTOWN — The Legislature's Joint Standing Committee on Energy got a look on Tuesday at a West Virginia project to extract valuable rare-earth elements (REEs) from acid ... mine drainage, ...

Reinventing coal country: Reclaiming America’s abandoned mine lands
Such acid mine drainage is a widespread consequence of ... “and we really need support on the ground for community-driven solutions.” Back in Swoyersville, PA, a public/private partnership ...

Functional analysis of natural microbial consortia using community proteomics
Proteogenomics has been used to analyse an acid mine drainage community ... Escherichia coli grown in high salt versus low salt solutions). An AMD biofilm was the first ecosystem for which ...

New Century hopes to start cleaning up Mount Lyell's legacy
It said the acid and metalliferous drainage would continue to contaminate the river system for centuries unless remedial action was taken. "The only solution ... The mine has been on care and ...

Biden administration move could block Minnesota copper mine
The Obama administration tried to kill the Twin Metals project when it launched a similar process in its final weeks, citing the potential threat to the Boundary Waters from acid mine drainage ...

Excelsior Mining Provides Update on Current ESG Initiatives
There is no possibility of acid mine drainage or other residual effects often attributed to traditional mining methods. Social Gunnison's environmental attributes are a key reason the project has ...

Final Cleanup Cost of Old Vermont Copper Mine 4 Times Plan
In 2001 the EPA designated the abandoned 250-acre copper mine a Superfund site. Acid- and metal-contaminated ... the Copperas Brook and designed a drainage system that has reduced what comes ...

Opinion: BC needs Alaska partners in its remediation planning for Tulsequah Chief Mine
Lying roughly 10 miles east of the Alaska-Canada border, the Tulsequah Chief mine has had a long and troubling history. Abandoned in 1957, it has been leaching acid rock drainage into the Taku ...

acid mine drainage solutions[*]acid mine drainage remediation options a review[*]acid mine drainage treatment options[*]acid mine drainage - long term solution (adults)[*]possible solutions to acid mine drainage[*]how can acid mine drainage be prevented[*]what are the causes of acid mine drainage[*]how to fix acid mine drainage[*]is acid mine drainage harmful to humans