Geo Environmental Design Practice in Fly Ash Disposal & Utilization

Journal of Scientific & Industrial Research

Magazine of Concrete Research

The use of concrete and mortar containing coal fly ash, blast furnace slag, and other dispersed technogenic materials is one of the major areas of potential resource savings and improving the environmental efficiency and sustainability of construction. Improving Concrete and Mortar using Modified Ash and Slag Cements presents the results of a study of high-tech concrete on composite Portland cement and slag Portland cement. It explains the possibility of significantly improving the properties of cements and concrete with the introduction of superplasticizers and hardening activators. Features: Describes how additives can reduce costs and lead to more environmentally sustainable production Explains the possibility of obtaining high-tech concrete with a high content of ash, slag, and clinker kiln dust Presents the possibility of significant reductions of the most energy-intensive component of cements Examines the calculated dependences for predicting the technical properties of concrete saturated with dispersed technogenic products Explains the methods of calculating the composition of concrete with specified properties of low-clinker cements Suitable for civil and structural engineers as well as for specialists working in the field of concrete technology, students of civil engineering, and researchers of new construction technologies, this book allows readers to understand new and sustainable ways to improve the properties of concrete and mortar by utilizing additives.

List of Bureau of Mines Publications and Articles with Subject and Author Index

Committees and Commissions in India, 1947-73: 1947-54

Monthly Catalog of United States Government Publications, Cumulative Index Comprises summary recommendations and limitations of public inquiry commissions appointed by the Govt. of India.

Foams

Recycled Aggregate in Concrete This volume comprises select papers presented during
TRANSOILCOLD 2019. It covers the challenges and problems faced by engineers, designers, contractors, and infrastructure owners during planning and building of transport infrastructure in Arctic and cold regions. The contents of this book will be of use to researchers and professional engineers alike.

Annual Report

Proceedings of SECON’19

The Indian Concrete Journal The Handbook of Sustainable Concrete and Industrial Waste Management summarizes key research trends in recycling and reusing concrete and industrial waste to reduce their environmental impact. This volume also includes important contributions in collaboration with the CRI-TEST Innovation Lab, Naples – Acerra. Part one discusses eco-friendly innovative cement and concrete and reviews key substitute materials. Part two analyzes the use of industrial waste as aggregates and the mechanical properties of concrete containing waste materials. Part three discusses differences between innovative binders, focusing on alkali-activated and geopolymer concrete. Part four provides a thorough overview of the life cycle assessment (LCA) of concrete containing industrial wastes and the impacts related to the logistics of wastes, the production of the concrete, and the management of industrial wastes. By providing research examples, case studies, and practical strategies, this book is a state-of-the-art reference for researchers working in construction materials, civil or structural engineering, and engineers working in the industry. Offers a systematic and comprehensive source of information on the latest developments in sustainable concrete; Analyzes different types of sustainable concrete and innovative binders from chemical, physical, and mechanical points of view; Includes real case studies showing application of the LCA methodology.

Transportation Soil Engineering in Cold Regions, Volume 2 These proceedings present a selection of papers presented at the 3rd International Conference on Materials Mechanics and Management 2017 (IMMM 2017), which was jointly organized by the Departments of Civil Engineering, Mechanical Engineering and Architecture of College of Engineering Trivandrum. Developments in the fields of materials, mechanics and management have paved the way for overall improvements in all aspects of human life. The quest for meeting the requirements of the rapidly increasing population has led to revolutionary construction and production technologies aiming at optimum management and use of natural resources. The objective of this conference was to bring together experts from academic institutions, industries, research organizations and professionals for sharing of knowledge, expertise and experience in the emerging trends related to Civil Engineering, Mechanical Engineering and Architecture. IMMM 2017 provided opportunities for young researchers to actively engage in research discussions, new research interests, research ethics and professional development.

Handbook of Alkali-Activated Cements, Mortars and Concretes

Committees And Commissions In India Vol. 1 : 1947-54

Biopolymers and Biotech Admixtures for Eco-Efficient Construction Materials

Concrete Technology (Theory and Practice), 8e This book gathers peer-reviewed contributions presented at the 3rd National Conference on Structural Engineering and Construction Management (SECON’19), held in Angamaly, Kerala, India, on 15-16 May 2019. The meeting served as a fertile platform for discussion, sharing sound knowledge and introducing novel ideas on issues related to sustainable construction and design for the future. The respective contributions address various aspects of numerical modeling and simulation in structural engineering, structural dynamics and earthquake engineering, advanced analysis and design of foundations, BIM, building energy management, and technical project management. Accordingly, the book offers a valuable, up-to-date tool and essential overview of the subject for scientists and practitioners alike, and will inspire further investigations and research.
Report Advances in Bio-Based Fibres: Moving Towards a Green Society describes many novel natural fibers, their specific synthesis and characterization methods, their environmental sustainability values, their compatibility with polymer composites, and a wide range of innovative commercial engineering applications. As bio-based fiber polymer composites possess excellent mechanical, electrical and thermal properties, along with highly sustainable properties, they are an important technology for manufacturers and materials scientists seeking to improve the sustainability of their industries. This cutting-edge book draws on the latest industry practice and academic research to provide advice on technologies with applications in industries, including packaging, automotive, aerospace, biomedical and structural engineering. Provides technical data on advanced material properties, including electrical and rheological. Gives a comprehensive guide to appraising and applying this technology to improve sustainability, including lifecycle assessment and recyclability. Includes advice on the latest modeling techniques for designing with these materials.

Recent Advances in Materials, Mechanics and Management Concrete Technology: Theory and Practice gives students of Civil Engineering a thorough understanding of all aspects of concrete technology from first principles. It covers types of Cement, Admixtures, Concrete strength, durability and testing with reference to national standards.

Handbook of Sustainable Concrete and Industrial Waste Management This volume comprises select papers presented during TRANSOILCOLD 2019. It covers the challenges and problems faced by engineers, designers, contractors, and infrastructure owners during planning and building of transport infrastructure in Arctic and cold regions. The contents of this book will be of use to researchers and professional engineers alike.

Developments in the Formulation and Reinforcement of Concrete This book provides an updated state-of-the-art review on new developments in alkali-activation. The main binder of concrete, Portland cement, represents almost 80% of the total CO2 emissions of concrete which are about 6 to 7% of the planet's total CO2 emissions. This is particularly serious in the current context of climate change and it could get even worse because the demand for Portland cement is expected to increase by almost 200% by 2050 from 2010 levels, reaching 6000 million tons/year. Alkali-activated binders represent an alternative to Portland cement having higher durability and a lower CO2 footprint. Reviews the chemistry, mix design, manufacture and properties of alkali-activated cement-based concrete binders. Considers performance in adverse environmental conditions. Offers equal emphasis on the science behind the technology and its use in civil engineering.

Housing, Building, and Planning Concrete is the most used man-made material in the world since its invention. The widespread use of this material has led to continuous developments such as ultra-high strength concrete and self-compacting concrete. Recycled Aggregate in Concrete: Use of Industrial, Construction and Demolition Waste focuses on the recent development which the use of various types of recycled waste materials as aggregate in the production of various types of concrete. By drawing together information and data from various fields and sources, Recycled Aggregate in Concrete: Use of Industrial, Construction and Demolition Waste provides full coverage of this subject. Divided into two parts, a compilation of varied literature data related to the use of various types of industrial waste as aggregates in concrete is followed by a discussion of the use of construction and demolition waste as aggregate in concrete. The properties of the aggregates and their effect on various concrete properties are presented, and the quantitative procedure to estimate the properties of concrete containing construction and demolition waste as aggregates is explained. Current codes and practices developed in various countries to use construction and demolition waste as aggregates in concrete and issues related to the sustainability of cement and concrete production are also discussed. The comprehensive information presented in Recycled Aggregate in Concrete: Use of Industrial, Construction and Demolition Waste will be helpful to graduate students, researchers and concrete technologists. The collected data will also be an essential reference for practicing engineers who face problems concerning the use of these materials in concrete production.

International Action in Asia and the Far East
Proceedings of SECON'21 This book gathers peer-reviewed contributions presented at the International Conference on Structural Engineering and Construction Management (SECON'21), held on 12-15 May 2021. The meeting served as a fertile platform for discussion, sharing sound knowledge and introducing novel ideas on issues related to sustainable construction and design for the future. The respective contributions address various aspects of numerical modeling and simulation in structural engineering, structural dynamics and earthquake engineering, advanced analysis and design of foundations, BIM, building energy management, and technical project management. Accordingly, the book offers a valuable, up-to-date tool and essential overview of the subject for scientists and practitioners alike, and will inspire further investigations and research.

Bibliography of Scientific Publications of South and South East Asia

Advances in Bio-Based Fiber Construction Materials is a comprehensive textbook covering all raw materials and products related to the construction processes, and not only those applied to building structures. The book is organized to help readers achieve competent knowledge about construction materials. At the beginning of the book the author offers the general concepts, definitions, and standards adopted worldwide for these materials to be used along the book. The central part of the text covers the primary construction materials required to manufacture concrete and mortars, the most relevant construction materials in the last century. Expressly, concrete and mortar are treated in detail in dedicated chapters per component. In addition, the author addresses other relevant materials in construction such as ceramic materials, metals and alloys, bituminous materials, and geosynthetic materials. Finally, since the construction industry is one of the largest single waste producing sector in the world, the last chapter outlines the main types and characteristics of construction and demolition waste (e.g. recycled aggregates). The book appeals to students but also professionals interested in construction materials and construction and civil engineering.

Geotechnical Applications

Indian and Foreign Review Developments in the Formulation and Reinforcement of Concrete, Second Edition, presents the latest developments on topics covered in the first edition. In addition, it includes new chapters on supplementary cementitious materials, mass concrete, the sustainably of concrete, service life prediction, limestone cements, the corrosion of steel in concrete, alkali-aggregate reactions, and concrete as a multiscale material. The book's chapters introduce the reader to some of the most important issues facing today's concrete industry. With its distinguished editor and international team of contributors, users will find this to be a must-have reference for civil and structural engineers. Summarizes a wealth of recent research on structural concrete, including material microstructure, concrete types, and variation and construction techniques Emphasizes concrete mixture design and applications in civil and structural engineering Reviews modern concrete materials and novel construction systems, such as the precast industry and structures requiring high-performance concrete

Indian Books in Print

Industrial Labour in India

Preliminary Publication

Monthly Catalog of United States Government Publications Foams are ubiquitous in human life and can be found in a variety of products and materials, such as sodas and sponges. There are liquid foams and solid foams, both of which have distinct properties useful for various applications. This book reviews, researches, and summarizes the potential uses of foam fluids and porous foams in engineering, medicine, and other industries. Chapters discuss different types of foams including multiphase foams, cellular foams, and ceramic foams as well as foam-generating mechanisms and techniques.

Improving Concrete and Mortar using Modified Ash and Slag Cements
Sustainable Construction Materials

The Structural Integrity of Recycled Aggregate Concrete Produced with Fillers and Pozzolans presents a review on the use of by-products, fillers and pozzolanic materials in the development of concrete, with an emphasis on structural integrity. The volume is broken down into key sections, including a review of the types of materials that are used as latent hydraulic supplements, fillers and pozzolans for making recycled aggregate concrete, rheology and hydration phenomenon, the mechanical and microscale nature of concrete, and the impact of fillers and pozzolans on the workability of concrete with case studies. Durability and strength development are also discussed. The final section looks at issues such as performance effect, LCA, environmental impact, sustainability and cost benefit analysis. With detailed case studies throughout, this volume will provide useful information for all stakeholders involved in the built environment, including materials scientists, civil engineers, builders, architects and policymakers. Identifies several potential by-products, fillers and pozzolans for the development of durable concrete Acts as a guidebook for constructors and researchers working in the broad field of material science, engineering and in-situ application Presents the durability properties of concrete made of by-products, fillers and pozzolans

Proceedings Since 1930 more than 100,000 new chemical compounds have been developed and insufficient information exists on the health assessment of 95 percent of these chemicals in which a relevant percentage are used in construction products. For instance Portland cement concrete, the most used material on the Planet (10,000 million tons/year that in the next 40 years will increase around 100 %) currently used in around 15% of total concrete production contains chemicals used to modify their properties, either in the fresh or hardened state. Biopolymers are materials that are developed from natural resources. They reduce dependence on fossil fuels and reduce carbon dioxide emissions. There is a worldwide demand to replace petroleum-based materials with renewable resources. Currently bio-admixtures represent just a small fraction of the chemical admixtures market (around 20%) but with environmental awareness for constituents in construction materials generally growing (the Construction Products Regulation is being enforced in Europe since 2013), the trend towards bio-admixtures is expected to continue. This book provides an updated state-of-the-art review on biopolymers and their influence and use as admixtures in the development of eco-efficient construction materials. Provides essential knowledge for researchers and producers working on the development of biopolymer-modified construction materials Discusses the various types of biopolymers currently available, their different production techniques, their use as bio-admixtures in concretes and mortars and applications in other areas of civil engineering such as soil stability, wood preservation, adhesives and coatings All contributions are made from leading researchers, who have intensive involvement in the design and use of biopolymers in construction materials

Journal of the American Concrete Institute This book comprises select proceedings of the annual conference of the Indian Geotechnical Society. The conference brings together research and case histories on various aspects of geotechnical engineering and geoenvironmental engineering. The book presents papers on geotechnical applications and case histories, covering topics such as (i) shallow and deep foundations; (ii) stability of earth and earth retaining structures; (iii) rock engineering, tunneling, and underground constructions; (iv) forensic investigations and case histories; (v) reliability in geotechnical engineering; and (vi) special topics such as offshore geotechnics, remote sensing and GIS, geotechnical education, codes, and standards. The contents of this book will be of interest to researchers and practicing engineers alike.

Construction Materials
Journal of the Institution of Engineers (India).

Transportation Soil Engineering in Cold Regions, Volume 1 This book is the fourth, in the series of five, on sustainable construction materials and like the previous three, it is also different to the norm. Its uniqueness lies in using the newly developed, Analytical Systemisation Method, in building the data-matrix sourced from 751 publications, contributed by 1402 authors from 513 institutions in 51 countries, from 1970 to 2017, on the subject of processed waste glass (glass cullet) as a construction material, and systematically analysing, evaluating and modelling this information for use of glass cullet as cement, aggregate or filler in concrete, ceramics, geotechnics and road pavement applications. Environmental issues, case studies and standards are also discussed. The work establishes what is already known and can be used to further progress the use of sustainable construction materials. It can also help to avoid repetitive research and save valuable resources. The book is structured in an incisive and easy to digest manner and is particularly suited for researchers, academics, design engineers, specifiers, contractors, and government bodies dealing with construction works. Provides an extensive source of valuable database information, supported by an exhaustive list of globally-based published literature over the last 40-50 years Offer an analysis, evaluation, repackaging and modeling of existing knowledge on sustainable construction practices Provides a wealth of knowledge for use in many sectors relating to the construction profession

Report

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