Chimney Design By Ansys

OCONNOR NATHAN

Machine Design Springer Nature
This volume contains the papers presented at the 9th International Symposium on Rock Fragmentation by Blasting, held in Granada, Spain, 13-17 August 2009. A state-of-the-art collection of articles on developments in rock blasting and explosives engineering, with contributions on rock characterization, explosives and initiation systems, blast design and monitoring, fragmentation assessment, numerical modeling, vibrations from blasting, environmental and economical aspects of rock blasting, and more. Containing unique knowledge, case studies, ideas and insights, this volume is must-have literature for researchers and practitioners in the field of explosives and blasting.
Digital Technologies and Applications John Wiley & Sons
This book constitutes the referred proceeding of the 1st International Conference on Engineering Solutions Toward Sustainable development (ESSD2023), organized by the Faculty of Engineering, Port Said University and held in Port Said, Egypt, during May 2-3, 2023. The book is devoted to fulfill the need for sustainable development that has never been more urgent. It shows the crucial role of engineering to play in this transition from consumption culture to responsible culture. This book explores the relationship between engineering and sustainability, highlighting the vital role that engineering plays in achieving sustainable development. The book provides a comprehensive guide for engineers, researchers, and experts from different disciplines that are interested in sustainable development. From renewable energy sources to green infrastructure, the book delves into the latest technological advancements providing insights and practical strategies for designing and implementing sustainable solutions. With practical examples and case studies, readers will gain a deep understanding of how engineering principles and practices can be harnessed to develop sustainable solutions that balance economic, social, and environmental needs and to mitigate the negative impacts of human activity on our

planet. The books is very useful for graduate students, researchers, policy planners, decision makers and stakeholders in the field of renewable energy, clean water development, climate actions, smart cities and communities and green infrastructures.
Rock Fragmentation by Blasting Springer Science & Business Media
Engineering Analysis with ANSYS Software, Second Edition, provides a comprehensive introduction to fundamental areas of engineering analysis needed for research or commercial engineering projects. The book introduces the principles of the finite element method, presents an overview of ANSYS technologies, then covers key application areas in detail. This new edition updates the latest version of ANSYS, describes how to use FLUENT for CFD FEA, and includes more worked examples. With detailed step-by-step explanations and sample problems, this book develops the reader's understanding of FEA and their ability to use ANSYS software tools to solve a range of analysis problems. - Uses detailed and clear step-by-step instructions, worked examples and screen-by-screen illustrative problems to reinforce learning - Updates the latest version of ANSYS, using FLUENT instead of FLOWTRAN - Includes instructions for use of WORKBENCH - Features additional worked examples to show engineering analysis in a broader range of practical engineering applications
Mechanical Engineering Technologies and Applications: Volume 2 Springer Nature
This multi-disciplinary book presents the most recent advances in exergy, energy, and environmental issues. Volume 1 focuses on fundamentals in the field and covers current problems, future needs, and prospects in the area of energy and environment from researchers worldwide. Based on some selected lectures from the Eleventh International Exergy, Energy and Environmental Symposium (IEEES-11) and complemented by further invited contributions, this comprehensive set of contributions promote the exchange of new ideas and techniques in energy conversion and conservation in order to exchange best practices in "energetic efficiency." Included are fundamental and historical coverage of the green transportation and sustainable mobility sectors, especially regarding the development of sustainable technologies for thermal comforts and green transportation vehicles. Furthermore, contributions on renewable and sustainable energy sources, strategies for energy production, and the carbon-free society constitute an important part of this book.
Structural Studies, Repairs and Maintenance of Heritage Architecture XI WIT Press
This long-awaited reference guide provides a complete overview of low energy cooling systems for buildings, covering a wide range of existing and emerging sustainable energy technologies in one comprehensive volume. An excellent data source on cooling performance, such as building loads or solar thermal chiller efficiencies, it is essential reading for building services and renewable energy engineers and researchers covering sustainable design. The book is unique in including a large set of experimental results from years of monitoring actual building and energy plants, as well as detailed laboratory and simulation analyses. These demonstrate which systems really work in buildings, what the real costs are and how operation can be optimized – crucial information for planners, builders and architects to gain confidence in applying new technologies in the building sector. Inside you will find valuable insights into: the energy demand of residential and office buildings; facades and summer performance of buildings; passive cooling strategies; geothermal cooling; active thermal cooling technologies, including absorption cooling, desiccant cooling and new developments in low power chillers; sustainable building operation using simulation. Supporting case study material makes this a useful text for senior undergraduate students on renewable and sustainable energy courses. Practical and informative, it is the best up-to-date volume on the important and rapidly growing area of cooling.
Seismic Behaviour and Design of Irregular and Complex Civil Structures Springer Nature
Structural irregularities are one of the most frequent causes of severe damages in buildings, as evidenced by the numerous earthquakes in recent years. This issue is of particular importance, since real structures are almost all irregular. Furthermore, structural irregularities depend on several factors often very difficult to predict. This book is an essential tool for understanding the problem of structural irregularities and provides the most up-to-date review on this topic, covering the aspects of ground rotations, analysis, design, control and monitoring of irregular structures. It includes 24 contributions from authors of 13 countries, giving a complete and international view of the problem.
Microelectronics, Circuits and Systems Bentham Science Publishers
Solar Chimney Power Plants: Numerical Investigations and Experimental Validation summarizes the effect of the geometrical parameters of a solar chimney on the airflow behavior inside a solar chimney power plant. Chapters in this experimental handbook are presented in two parts with the goal of equipping readers with the information necessary to study and determine key factors which affect the performance of the solar chimney power plant. In the first part, the authors present a simulation developed by using computational fluid dynamics (CFD) modeling software ANSYS Fluent to model the airflow. The adopted CFD models include k-ε turbulence model, the DO radiation model and the convection heat flux transfer model. These models have been validated with anterior experimental results. In the second part, the simulated models are then tested with alternate geometric configurations of the solar chimney power plant. The numerical studies allow readers to consider ways to expand on the design optimizing of the solar chimney when constructing a prototype. Geometrical parameters include the height, the diameter of the chimney and the dimensions of the solar collector and their effect on the temperature and air pressure is documented to validate models used for experimental simulations. The handbook also includes a study of an experimental prototype, constructed at ENIS. The researchers have gathered data on the environmental temperature, distribution of the temperature, air velocity and the power output generated by the turbine, the solar radiation and the gap of temperature in the collector of the prototype.
Environmentally-Benign Energy Solutions Springer Science & Business Media
PCM Enhanced Building Envelopes presents the latest research in the field of thermal energy storage technologies that can be applied to solar heating and cooling with the aim of shifting and reducing building energy demand. It discusses both practical and technical issues, as well as the advantages of using common phase change materials (PCMs) in buildings as a more efficient, novel solution for passive solar heating/cooling strategies. The book includes qualitative and quantitative descriptions of the science, technology and practices of PCM-based building envelopes, and reflects recent trends by placing emphasis on energy storage solutions within building walls, floors, ceilings, façades, windows, and shading devices. With the aim of assessing buildings' energy performance, the book provides advanced modeling and simulation tools as a theoretical basis for the analysis of PCM-based building envelopes in terms of heat storage and transfer. This book will be of interest to all those

dealing with building energy analysis such as researchers, academics, students and professionals in the fields of mechanical and civil engineering and architectural design

Engineering Analysis with ANSYS Software Bentham Science Publishers

Structural Design for Fire Safety, 2nd edition Andrew H. Buchanan, University of Canterbury, New Zealand Anthony K. Abu, University of Canterbury, New Zealand A practical and informative guide to structural fire engineering This book presents a comprehensive overview of structural fire engineering. An update on the first edition, the book describes new developments in the past ten years, including advanced calculation methods and computer programs. Further additions include: calculation methods for membrane action in floor slabs exposed to fires; a chapter on composite steel-concrete construction; and case studies of structural collapses. The book begins with an introduction to fire safety in buildings, from fire growth and development to the devastating effects of severe fires on large building structures. Methods of calculating fire severity and fire resistance are then described in detail, together with both simple and advanced methods for assessing and designing for structural fire safety in buildings constructed from structural steel, reinforced concrete, or structural timber. Structural Design for Fire Safety, 2nd edition bridges the information gap between fire safety engineers, structural engineers and building officials, and it will be useful for many others including architects, code writers, building designers, and firefighters. Key features: • Updated references to current research, as well as new end-of-chapter questions and worked examples. •Authors experienced in teaching, researching, and applying structural fire engineering in real buildings. • A focus on basic principles rather than specific building code requirements, for an international audience. An essential guide for structural engineers who wish to improve their understanding of buildings exposed to severe fires and an ideal textbook for introductory or advanced courses in structural fire engineering.

Fluid Mechanics and Fluid Power (Vol. 1) Springer Nature

This volume contains papers presented at the Twelfth International Conference on Structural Studies, Repairs and Maintenance of Heritage Architecture. The conference provides an ideal forum for professionals in the area to discuss problems and solutions, and exchange opinions and experiences.

Solar Chimney Power Plants: Numerical Investigations and Experimental Validation Springer Nature

As the world grapples with the transition to sustainable energy sources, the demand for materials with high-performance electrodes, electrolytes, and catalysts has become paramount. The energy transition necessitates materials with increased energy and power density for advanced energy storage devices, while the emergence of future fuels like hydrogen requires economically viable electrocatalysts for mass production. In response to these challenges, Engineering Materials for Efficient Energy Storage and Conversion addresses these pressing concerns through an interdisciplinary lens that combines materials science, chemistry, physics, and engineering. Within the pages of Engineering Materials for Efficient Energy Storage and Conversion, a comprehensive exploration unfolds, delving into cutting-edge R&D in energy technologies. The book takes a deep dive into critical areas such as fuel cells, thermal battery materials, hydrogen storage, and materials for thermal management. By providing in-depth insights into the electrochemical, physicochemical, and structural aspects of energy technologies, the book aims to advance functional materials and devices crucial for the sustainable future of energy storage and conversion. This compendium not only presents theoretical frameworks but also offers the latest empirical research findings, contributing significantly to the evolution of the field.

PCM-Based Building Envelope Systems Springer

This volume contains the proceedings of the XIX International Colloquium on Mechanical Fatigue of Metals, held at the Faculty of Engineering of the University of Porto, Portugal, 5-7 September 2018. This International Colloquium facilitated and encouraged the exchange of knowledge and experiences among the different communities involved in both basic and applied research in the field of the fatigue of metals, looking at the problem of fatigue exploring analytical and numerical simulative approaches. Fatigue damage represents one of the most important types of damage to which structural materials are subjected in normal industrial services that can finally result in a sudden and unexpected abrupt fracture. Since metal alloys are still today the most used materials in designing the majority of components and structures able to carry the highest service loads, the study of the different aspects of metals fatigue attracts permanent attention of scientists, engineers and designers.

Proceedings of Mechanical Engineering Research Day 2019 Springer Science & Business Media

Athalye Sapre Pitre College Devrukh has always been on the forefront in organizing different academic, co-curricular and administrative activities to nurture the student's minds and equip them with skills to face the challenges of the real world situations with academic excellence. UGC sponsored Three Day National Conference on “Renewable Energy and Environment” was jointly organized by the Department of Chemistry and Physics during 25th to 27th September, 2014. The main objective of this conference was to provide platform to researches in the field of Physics, Chemistry, Technology, Economics, Commerce, Geography and Environmental sciences to share problems and prospects in the field of energy and environment and to compile intellectual inputs for the sustainable development of our country. Protection of the Environment and Climate, and their preservation is a demanding social, scientific and economical task. Utilization of renewable energy, efficient conversions of fossil fuel are not only environmentally and climatically beneficial, they also preserve the finite energy sources. Awareness of this global issue at the grass root level is the need of the hour. Renewable energy and environment is the subject of global attention. The present scenario between energy generation, consumption and depletion of sources of conventional energy has various impacts on Environment. Conservation of renewable energy sources and protection of environment are the burning issues at the global level. Unless a long term planning is done to handle these issues and make them commercially viable and environment friendly; alternative technologies are developed. The potential of renewable energy sources is enormous as they can in principle meet many times the world’s energy demand. Renewable energy sources such as small hydropower, wind, solar, biomass, and geothermal can provide sustainable energy services, based on the use of routinely available, indigenous resources. I am sure such platforms through national conference will definitely help to promote various academicians, scientist and research students to share and absorb various new ideas which will help our country to overcome fuel crisis and environmental problems.

Engineering Materials for Efficient Energy Storage and Conversion Springer Nature

This book focuses on cases and studies of interest to mechanical engineers and industrial technicians. The considered applications in this volume are widely used in several industrial fields particularly in the automotive and aviation industries. Readers

will understand the theory and techniques which are used in each application covered in each chapter. Volume 2 includes the following topics: Numerical investigation of turbulent slot jets with various nanoparticle shapes Experimental study on a sweeping gas membrane distillation unit Development of design processes for multi-spindle drilling using a neural network and expert systems Experimental investigation of a new hybrid solar collector (PV/t) system Theoretical study of the effects of combustion duration on engine performance Effects of preheating temperature and fuel-air equivalence ratio on pollution control in hydrocarbon combustion Numerical study of natural convection between two concentric ellipses with different shapes and imposed temperatures Theoretical study of the geometrical parameters effect on the behavior of a solar chimney power plant Numerical investigations of the effect of packed bed porosity on the flow behavior Comparison between a conventional and a four-stage Savonius wind rotor The presented case studies and development approaches aim to provide readers with basic and applied information broadly related to mechanical engineering and technology.

Engineering Solutions Toward Sustainable Development John Wiley & Sons

This book presents the proceedings of the International Virtual Conference on Industry 4.0 (IVCI4.0 2020). This conference brings together specialists from the academia and industry sectors to promote the exchange of knowledge, ideas, and information on the latest developments and applied technologies in the field of Industry 4.0. The book discusses a wide range of topics such as the design of smart and intelligent products, developments in recent technologies, rapid prototyping and reverse engineering, multistage manufacturing processes, manufacturing automation in the Industry 4.0 model, cloud-based products, and cyber-physical and reconfigurable systems, etc. The volume supports the transfer of vital knowledge to the next generation of academics and practitioners.

The Solar Chimney RUT Printer and Publisher

This the fourth volume of five from the 28th IMAC on Structural Dynamics and Renewable Energy, 2010, brings together 29 chapters on the Dynamics of Civil Structures. It presents early findings from experimental and computational investigations of Civil Structures, including studies such as Characterization of a Strongly Nonlinear Laboratory Benchmark System, A Non-destructive Technique for the Health Monitoring of Tie-rods in Ancient Buildings, Estimating Effective Prestress Force on Grouted Tendon by Impact Responses, Experimental Investigation of Dynamic Load Estimation Using Small-scale Testing, and Prediction of Prestress Force on Grouted Tendon by Experimental Modal Analysis.

International Virtual Conference on Industry 4.0 Springer Nature

This book gathers selected research papers presented at the First International Conference on Digital Technologies and Applications (ICDTA 21), held at Sidi Mohamed Ben Abdellah University, Fez, Morocco, on 29–30 January 2021. highlighting the latest innovations in digital technologies as: artificial intelligence, Internet of things, embedded systems, network technology, information processing, and their applications in several areas such as hybrid vehicles, renewable energy, robotic, and COVID-19. The respective papers encourage and inspire researchers, industry professionals, and policymakers to put these methods into practice.

Technological Advancement in Instrumentation & Human Engineering Springer Nature

Seismic Design of Industrial Facilities demands a deep knowledge on the seismic behaviour of the individual structural and non-structural components of the facility, possible interactions and last but not least the individual hazard potential of primary and secondary damages. From 26.-27. September 2013 the International Conference on Seismic Design of Industrial Facilities firstly addresses this broad field of work and research in one specialized conference. It brings together academics, researchers and professional engineers in order to discuss the challenges of seismic design for new and existing industrial facilities and to compile innovative current research. This volume contains 50 contributions to the SeDIF-Conference covering the following topics with respect to the specific conditions of plant design: · International building codes and guidelines on the seismic design of industrial facilities · Seismic design of non-structural components · Seismic design of silos and liquid-filled tanks - Soil-structure-interaction effects · Seismic safety evaluation, uncertainties and reliability analysis · Innovative seismic protection systems · Retrofitting The SeDIF-Conference is hosted by the Chair of Structural Statics and Dynamics of RWTH Aachen University, Germany, in cooperation with the Institute for Earthquake Engineering of the Dalian University of Technology, China.

Numerical Heat Transfer and Fluid Flow IGI Global

The book presents the select proceedings of the International Conference on Emerging Trends in Mechanical and Industrial Engineering (ICETMIE 2022). It covers the latest trends in the area of mechanical engineering. The broad topics covered in the book are engineering design, industrial and production engineering, Industry 4.0, energy and process engineering, mechatronics, control and robotics, material science, and automotive engineering. The book is useful for students, researchers, and professionals working in the various areas of mechanical engineering.

Low Energy Cooling for Sustainable Buildings CRC Press

This is an open access book. We kindly welcome to all academicians, researchers, scientists, engineers and graduate students in the related fields to submit their original research papers. Applications in engineering science that require expertise in mathematics, physics and chemistry. Its mission is to become a voice of the applied science community, addressing researchers and practitioners in different areas ranging from mathematics, physics, and chemistry to all related braches of the engineering, presenting verifiable computational methods, findings, and solutions. The Conference provided a setting for discussing recent developments in various engineering and applied science topics, including Mathematics, Chemistry, Physics, Computational science, Material science, Environmental Science and Chemical engineering. The submitted conference papers will be subjected to stringent peer review and carefully evaluated based on originality and clarity of exposition. All the accepted papers will be published in the conference proceedings. The conference provides opportunities for the attendants to share new ideas, experiences in Applied Sciences and Engineering and to establish collaboration for the future.