

Oxygen Enhanced Combustion Second Edition Free Book

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Applied Combustion Elsevier

Natural gas is a vital component of the world's supply of energy and an important source of many bulk chemicals and speciality chemicals. It is one of the cleanest, safest, and most useful of all energy sources, and helps to meet the world's rising demand for cleaner energy into the future. However, exploring, producing and bringing gas to the user or converting gas into desired chemicals is a systematical engineering project, and every step requires thorough understanding of gas and the surrounding environment. Any advances in the process link could make a step change in gas industry. There have been increasing efforts in gas industry in recent years. With state-of-the-art contributions by leading experts in the field, this book addressed the technology advances in natural gas industry.

Carbon Capture and Storage Academic Press

The field of membrane separation technology is presently in a state of rapid growth and innovation. Many different membrane separation processes have been developed during the past half century and new processes are constantly emerging from academic, industrial, and governmental laboratories. While new membrane separation processes are being conceived with remarkable frequency, existing processes are also being constantly improved in order to enhance their economic competitiveness. Significant improvements are currently being made in many aspects of membrane separation technology: in the development of new membrane materials with higher selectivity and/or permeability, in the fabrication methods for high-flux asymmetric or composite membranes, in membrane module construction and in process design. Membrane separation technology is presently being used in an impressive variety of applications and has generated businesses totalling over one billion U.S. dollars annually. The main objective of this book is to present the principles and applications of a variety of membrane separation processes from the unique perspectives of investigators who have made important contributions to their fields. Another objective is to provide the reader with an authoritative resource on various aspects of this rapidly growing technology. The text can be used by someone who wishes to learn about a general area of application as well as by the knowledgeable person seeking more detailed information.

The CRC Handbook of Mechanical Engineering, Second Edition John Wiley & Sons

This updated, second edition retains its classroom-tested treatment of physical chemistry of metallurgical topics, such as roasting of sulfide minerals, matte smelting, converting, structure, properties and theories of slag, reduction of oxides and reduction smelting, interfacial phenomena, steelmaking, secondary steelmaking, role of halides in extraction of metals, refining, hydrometallurgy

and electrometallurgy, and adds new data in worked-out examples as well as up-to-date references to the literature. The book further explains the physical chemistry of various metallurgical topics, steps involved in extraction of metals, such as roasting, matte smelting/converting, reduction smelting, steelmaking reactions, deoxidation, stainless steelmaking, vacuum degassing, refining, leaching, chemical precipitation, ion exchange, solvent extraction, cementation, gaseous reduction and electrowinning. Each topic is illustrated with appropriate examples of applications of the technique in extraction of some common, reactive, rare, or refractory metal together with worked out problems explaining the principle of the operation. The problems require imagination and critical analyses and also encourage readers for creative application of thermodynamic data in metal extraction. Updates and condenses text throughout the book by sequential arrangement of paragraphs in different chapters; Maximizes readers' understanding of the physicochemical principles involved in extraction/production of common and rare/reactive metals by pyro- as well as hydrometallurgical routes; Reinforces concepts presented with worked examples in each chapter explaining the process steps; Explains the physical chemistry of various metallurgical steps, such as roasting, matte smelting/converting, and reduction smelting, steelmaking, aqueous processing etc. in extraction of metals; Collects and uniformly presents scattered information on physicochemical principles of metal production from various books and journals.

Journal of the Air & Waste Management Association DIANE Publishing

Oxy-fuel Combustion: Fundamentals, Theory and Practice provides a comprehensive review of various aspects of oxy-fuel combustion technology, including its concept, fundamental theory, pilot practice, large-scale feasibility studies and related practical issues, such as the commissioning and operation of an oxy-fuel combustion plant. Oxy-fuel combustion, as the most practical large-scale carbon capture power generation technology, has attracted significant attention in the past two decades. As significant progress has been achieved in worldwide demonstration and the oxy-combustion concept confirmed by Schwartze Pump, CUIDEN, Callide, Ponferrada and Yingcheng projects in the past five years, this book provides a timely addition for discussion and study. Covers oxy-fuel combustion technology Includes concepts, fundamentals, pilots and large-scale feasibility studies Considers related practical issues, such as the commissioning and operation of an oxy-fuel combustion plant Focuses on theories and methods closely related to engineering practice

Sustainable Energy, second edition Elsevier

Until now, anyone conducting industrial combustion tests had to either rely on old methods, go scurrying through the literature to

find proven applicable methodologies, or hire top-shelf consultants such as those that work for cutting-edge companies like John Zink. Manufacturers can no longer take industrial combustion for granted.

Air and noise po

The John Zink Hamworthy Combustion Handbook, Second Edition
CRC Press

Despite the length of time it has been around, its importance, and vast amounts of research, combustion is still far from being completely understood. Environmental, cost, and fuel consumption issues add further complexity, particularly in the process and power generation industries. Dedicated to advancing the art and science of industrial combustion

The Coen & Hamworthy Combustion Handbook CRC Press
Industry relies heavily on the combustion process. The already high demand for energy, primarily from combustion, is expected to continue to rapidly increase. Yet, the information is scattered and incomplete, with very little attention paid to the overall combustion system. Designed for practicing engineers, Heat Transfer in Industrial Combustion e

An Introduction to Hydrogen Energy and Its Applications Dorrance Publishing

The component parts of a manufacturing system are important. Without peripherals and services such as pumps, boilers, power transmission, water treatment, waste disposal, and efficient lighting, the system will collapse. Food Plant Engineering Systems, Second Edition fills the need for a reference dealing with the bits and pieces that keep systems running, and also with how the peripheral parts of a processing plant fit within the bigger picture. The author has gathered information from diverse sources to introduce readers to the ancillary equipment used in processing industries, including production line components and environmental control systems. He explores the buildings and facilities as well as the way various parts of a plant interact to increase plant production. This new edition covers the systems approach to Lean manufacturing, introducing Lean principles to the food industry. It also addresses sustainability and environmental issues, which were not covered in the first edition. Written so readers with only basic mathematical knowledge will benefit from the content, the text describes measurements and numbers as well as general calculations, including mass and energy balances. It addresses the properties of fluids, pumps, and piping, and provides a brief discussion of thermodynamics. In addition, it explores electrical system motors, starters, heating, and lights; heating systems and steam generation; cooling and refrigeration systems; and water, waste, and material handling systems. The text also deals with plant design, including location, foundations, floors, walls, roofs, drains, and insulation. The final chapter presents an overview of safety and OSHA regulations, and the appendices provide conversion tables and an introduction to mathematics.

BoD – Books on Demand

This open access book presents the proceedings of the 3rd Indo-German Conference on Sustainability in Engineering held at Birla Institute of Technology and Science, Pilani, India, on September 16 – 17, 2019. Intended to foster the synergies between research and education, the conference is one of the joint activities of the BITS Pilani and TU Braunschweig conducted under the auspices of Indo-German Center for Sustainable Manufacturing, established in 2009. The book is divided into three sections: engineering, education and entrepreneurship, covering a range of topics, such as renewable energy forecasting, design & simulation, Industry 4.0, and soft & intelligent sensors for energy efficiency. It also includes case studies on lean and green manufacturing, and life cycle analysis of ceramic products, as well as papers on teaching/learning methods based on the use of learning factories to improve students' problem-solving and personal skills. Moreover, the book discusses high-tech ideas to help the large number of unemployed engineering graduates looking for jobs become tech entrepreneurs. Given its broad scope, it will appeal to academics and industry professionals alike.

Fundamentals, Theory and Practice CRC Press

Despite the length of time it has been around, its importance, and vast amounts of research, combustion is still far from being completely understood. Industrial applications of combustion add environmental, cost, and fuel consumption issues to its fundamental complexity, and the process and power generation

industries in particular present their o

Hydrogen Power ASTM International

What makes this book unique is a specific focus on aluminum recovery, rather than just recycling in general. It also offers an integrated discussion of scrap recovery and re-melting operations and includes economic as well as technical elements of recycling. Important topics include a discussion of the scrap aluminum marketplace and how secondary aluminum is collected and sorted, the design and operation of furnaces for melting scrap, the refining of molten aluminum, and the recovery and processing of dross from re-melting operations. This second edition features more information on aluminum scrap pricing and the economics of recycling, the analysis of dross processing methods currently in use by the industry, and drosses produced. The book has been updated throughout to include the most up-to-date information.

Fuels, Energy, and the Environment CRC Press

This book will provide the latest global perspective on the role and value of carbon capture and storage (CCS) in delivering temperature targets and reducing the impact of global warming. As well as providing a comprehensive, up-to-date overview of the major sources of carbon dioxide emission and negative emissions technologies, the book also discusses technical, economic and political issues associated with CCS along with strategies to enable commercialisation.

Physical Chemistry of Metallurgical Processes, Second Edition

Cambridge University Press

This book is the proceedings of the International Conference on Power Engineering-2007. The fields of this book include power engineering and relevant environmental issues. The recent technological advances in power engineering and related areas are introduced. This book is valuable for researchers, engineers and students majoring in power engineering.

Challenges of Power Engineering and Environment CRC Press

Rapid development in the field precipitated by the increased demand for clean burner systems has made the Industrial Burners Handbook into the fields go-to resource. With this resource, bestselling author, editor, and combustion expert Charles Baukal, Jr. has put together a comprehensive reference dedicated to the design and applications of indust

A Gallery of Combustion and Fire CRC Press

This book comprises select peer-reviewed proceedings of the International Conference on Advances in Materials Research (ICAMR 2019). The contents cover latest research in materials and their applications relevant to composites, metals, alloys, polymers, energy and phase change. The indigenous properties of materials including mechanical, electrical, thermal, optical, chemical and biological functions are discussed. The book also elaborates the properties and performance enhancement and/or deterioration in order of the modifications in atomic particles and structure. This book will be useful for both students and professionals interested in the development and applications of advanced materials.

Industrial Combustion Pollution and Control CRC Press

This reference overflows with an abundance of experimental techniques, simulation strategies, and practical applications useful in the control of pollutants generated by combustion processes in the metals, minerals, chemical, petrochemical, waste, incineration, paper, glass, and foods industries. The book assists engineers as they attempt to meet e

Volume 1 - Fundamentals Springer Nature

The first book to present a full-color visual panorama of combustion images along with explanatory and tutorial overviews.

Principles and Applications CRC Press

Although many books have been written on computational fluid dynamics (CFD) and many written on combustion, most contain very limited coverage of the combination of CFD and industrial combustion. Furthermore, most of these books are written at an advanced academic level, emphasize theory over practice, and provide little help to engineers who need to use CFD for combustion modeling. Computational Fluid Dynamics in Industrial Combustion fills this gap in the literature. Focusing on topics of interest to the practicing engineer, it codifies the

many relevant books, papers, and reports written on this combined subject into a single, coherent reference. It looks at each topic from a somewhat narrow perspective to see how that topic affects modeling in industrial combustion. The editor and his team of expert authors address these topics within three main sections: Modeling Techniques-The basics of CFD modeling in combustion Industrial Applications-Specific applications of CFD in the steel, aluminum, glass, gas turbine, and petrochemical industries Advanced Techniques-Subjects rarely addressed in other texts, including design optimization, simulation, and visualization Rapid increases in computing power and significant advances in commercial CFD codes have led to a tremendous increase in the application of CFD to industrial combustion. Thorough and clearly representing the techniques and issues confronted in industry, Computational Fluid Dynamics in Industrial Combustion will help bring you quickly up to date on current methods and gain the ability to set up and solve the various types of problems you will encounter.

American Combustion Pyretron Destruction System Oxygen-Enhanced Combustion, Second Edition

The First Edition of the Encyclopedia of Global Warming and Climate Change provided a multi-authored, academic yet non-technical resource for students and teachers to understand the importance of global warming, to appreciate the effects of human activity and greenhouse gases around the world, and to learn the history of climate change and the research enterprise examining it. This edition was well received, with notable reviews. Since its publication, the debate over the advent of global warming at least partially brought on by human enterprise has continued to ebb and flow, depending literally on the weather, politics, and media coverage of climate summits and debates. Advances in research also change the discourse as new data is collected and new scientific projects continue to explore and explain global warming and climate change. Thus, a new, Second Edition updates more than half of the original entries and adds new perspectives and content to keep students and researchers up-to-date in a field that has proven provocatively lively.

Approaches for Clean Combustion in Gas Turbines Springer Science & Business Media

Ceramic Engineering and Science Proceedings Volume 35, Issue 1, 74th Conference on Glass Problems S.K. Sundaram, Editor In continuing the tradition that dates back to 1934, this volume is a collection of 25 papers presented at the 74th Glass Problems Conference, October 14 – 17, 2013 in Columbus, Ohio. These papers are essential reading for all who need to stay abreast of the latest research in the glass manufacturing field. Content is grouped into the below five sections: Batching and Forming Glass Melting Modeling, Sensing and Control Refractories I Refractories II