

Acid Gas Injection A Review Of Existing Operations

Contains 4,101 references on FGD [Flue Gas Desulfurization] ... primarily from 1982 through June 1993. Complements the "Flue Gas Desulfurization and Denitrification" bibliography published by the U.S. Dept. of Energy in Jan. 1985. References were located on the Energy, Science and Technology, Pollution Abstracts, and Environmental Bibliography databases. Primarily covers FGD and the use of industrial minerals in the desulfurization process or in by-product utilization and disposal. Emphasizes post-combustion removal of sulfur dioxide through processes such as in-duct injection and wet and dry scrubbing.

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This book presents sources of carbon dioxide emission, related environmental issues and methods for carbon dioxide utilization, storage, analysis, modeling and optimization. This first volume focused on biochemical methods of carbon dioxide sequestration such as forestry, biomineralization, geo-chemo-mechanical, mangrove plantation and biowaste.

Acid Gas Injection and Related Technologies Wiley-Scrivener

Over the past decade, the prospect of climate change resulting from anthropogenic CO₂ has become a matter of growing public concern. Not only is the reduction of CO₂ emissions extremely important, but keeping the cost at a manageable level is a prime priority for companies and the public, alike. The CO₂ capture project (CCP) came together with a common goal in mind: find a technological process to capture CO₂ emissions that is relatively low-cost and able to be expanded to industrial applications. The Carbon Dioxide Capture and Storage Project outlines the research and findings of all the participating companies and associations involved in the CCP. The final results of thousands of hours of research are outlined in the book, showing a successful achievement of the CCP's goals for lower cost CO₂ capture technology and furthering the safe, reliable option of geological storage. The Carbon

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Dioxide Capture and Storage Project is a valuable reference for any scientists, industrialists, government agencies, and companies interested in a safer, more cost-efficient response to the CO₂ crisis.

More and more people believe we must quickly wean ourselves from fossil fuels - oil, natural gas and coal - to save the planet from environmental catastrophe, wars and economic collapse. In this 2006 book, Professor Jaccard argues that this view is misguided. We have the technological capability to use fossil fuels without emitting climate-threatening greenhouse gases or other pollutants. The transition from conventional oil and gas to their unconventional sources including coal for producing electricity, hydrogen and cleaner-burning fuels will decrease energy dependence on politically unstable regions. In addition, our vast fossil fuel resources will be the cheapest source of clean energy for the next century and perhaps longer, which is critical for the economic and social development of the world's poorer countries. By buying time for increasing energy efficiency, developing renewable energy technologies and making nuclear power more attractive, fossil fuels will play a key role in humanity's quest for a sustainable energy system.

Large producers have started to use gas injection for their applications and in the future it is predicted that this trend will increase. This book is the most comprehensive and up-to-date coverage of this technique, which is rapidly increasing in importance and usage in the natural gas and petroleum industry. The authors, a group of the most well-known and respected in the field, discuss, in a series of papers, this technology and related technologies as to how they can best be used by industry to creating a safer, cleaner environment. Climate change is an issue that is highly debated around the

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globe. This book brings together the papers that were presented at a conference dedicated to this issue, held in Kyoto in October 2002. Covering a broad range of areas, the topics presented will benefit both those working in the field of carbon dioxide recovery and sequestration, and those looking at the effects of non carbon dioxide greenhouse gases. An overview of the Research and Design technologies which aid in mitigating climate change is included, which will be invaluable to those researching new opportunities for dealing with this problem. An area of research that has seen a rapid rise in worldwide spend Will benefit both researchers in climate change, and those looking at new technologies to help deal with the problem Presents papers from contributors spread around the globe means that this book has world wide relevance

This book introduces the scientific basis and engineering practice for CO₂ storage, covering topics such as storage capacity, trapping mechanisms, CO₂ phase behaviour and flow dynamics, engineering and geomechanics of geological storage, injection well design, and geophysical and geochemical monitoring. It also provides numerous examples from the early mover CCS projects, notably Sleipner and Snøhvit offshore Norway, as well as other pioneering CO₂ storage projects.

This is the most exhaustive study to date on natural gas hydrates. In spite of their importance, hydrates are misunderstood, and misconceptions abound. This book provides an accurate review of what hydrates are and under what conditions they will form, and it provides the engineer with the methods to predict the occurrences of hydrates. The petroleum industry spends millions every year to combat the formation of hydrates, the solid, crystalline compounds that form from water and small molecules, damaging equipment and plugging transmission lines. Understanding how, when,

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and where they form and using this knowledge to apply remedies in practical applications are crucial. * The most comprehensive study of natural gas hydrates * A manual for the engineer or textbook for the student * Contains cutting-edge solutions to natural gas hydrate problems

Written by foremost experts in the field, and formulated with attention to classroom use for advanced studies in reservoir characterization and processes, this book reviews and summarises state-of-the-art progress in the field of enhanced oil recovery (EOR). All of the available techniques: alkaline flooding; surfactant flooding; carbon dioxide flooding; steam flooding; in-situ combustion; gas injection; miscible flooding; microbial recovery; and polymer flooding are discussed and compared. Together with Volume I, it presents a complete text on enhanced recovery technology and, hence, is an almost indispensable reference text. This second volume compliments the first by presenting as complete an analysis as possible of current oilfield theory and technology, for accomplishment of maximum production of oil. Many different processes have been developed and field tested for enhancement of oil recovery. The emerging philosophy is that no single process is applicable to all petroleum reservoirs. Each must be treated as unique, and carefully evaluated for characteristics that are amenable to one or two of the proven technologies of EOR. This book will aid the engineer in field evaluation and selection of the best EOR technology for a given oilfield. Even the emerging technology of microbial applications to enhance oil recovery are reviewed and explained in terms that are easily understood by field engineers. The book is presented in a manner suitable for graduate studies. The only addition required of teachers is to supply example problems for class work. An appendix includes a reservoir mathematic model and program for general application that can also be used for teaching.

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Provides a complete treatment on two of the hottest topics in the energy sector – acid gas injection and carbon dioxide sequestration. This book provides the most comprehensive and up-to-date coverage of two techniques that are rapidly increasing in importance and usage in the natural gas and petroleum industry — acid gas injection and carbon dioxide sequestration. The author, a well-known and respected authority on both processes, presents the theory of the technology, then discusses practical applications the engineer working in the field can implement. Both hot-button issues in the industry, these processes will help companies in the energy industry "go green," by creating a safer, cleaner environment. These techniques also create a more efficient and profitable process in the plant, cutting waste and making operations more streamlined. This outstanding new reference includes: Uses of acid gas injection, the method of choice for disposing of small quantities of acid gas. Coverage of technologies for working towards a zero-emission process in natural gas production. A practical discussion of carbon dioxide sequestration, an emerging new topic, often described as one of the possible solutions for reversing global warming. Problems and solutions for students at the graduate level and industry course participants.

This is the eighth volume in the series, *Advances in Natural Gas Engineering*, focusing on gas injection into geological formations and other related topics, very important areas of natural gas engineering. This volume includes information for both upstream and downstream operations, including chapters detailing the most cutting-edge techniques in acid gas injection, carbon capture, chemical and thermodynamic models, and much more. Written by some of the most well-known and respected chemical and process engineers working with natural gas today, the chapters in this important volume represent the most state-of-the-art processes and

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operations being used in the field. Not available anywhere else, this volume is a must-have for any chemical engineer, chemist, or process engineer in the industry. Advances in Natural Gas Engineering is an ongoing series of books meant to form the basis for the working library of any engineer working in natural gas today.

Networks like cables and pipelines are essential for a functioning energy market. This book provides a clear and insightful overview of the legal challenges this poses in the modern world. The construction and use of these networks depends on developments in technology, policies, and legal regulation. Recently, the energy sector has been faced with considerable challenges and changes. Energy liberalisation and deregulation, and the fact that traditional energy supplies like fossil fuels and large hydro plants are increasingly located far from the area of demand has drastically changed the energy landscape. The need for new sources of energy supply can therefore be found all over the world. This book investigates the challenges that face governments engaged in this renewal, particularly since in many cases these networks are, by necessity, international. The construction of new networks always involves the application of planning and environmental laws, and the complications these pose only increase as networks pass through the territory of several different countries. This book analyzes the evolution of this area from several angles, both geographical and legal. The authors combine knowledge and expertise from a variety of sources and backgrounds to present an invaluable overview of the regulatory developments and perspectives that shape the legal frameworks in which governments develop these networks, and the way in which account must be taken of new sources of energy by law-makers.

This work studies the predominant types and sources of industrial gas, their effects on the atmosphere, and related

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environmental concerns and issues. It goes on to define methods of determining gas properties and the various process types that are used for clean-up.

IPCC Report on sources, capture, transport, and storage of CO₂, for researchers, policy-makers and engineers.

This book covers different aspects of gas injection, from the classic pressure maintenance operation to enhanced oil recovery (EOR), underground gas storage (UGS), and carbon capture and storage (CCS). The authors detail the unique characteristics and specific criteria of each application, including: material balance equations phase behaviour reservoir engineering well design operating aspects surface facilities environmental issues Examples, data, and simulation codes are provided to enable the reader to gain an in-depth understanding of these applications. Fundamentals and Practical Aspects of Gas Injection will be of use to practising engineers in the fields of reservoir engineering, and enhanced oil recovery. It will also be of interest to researchers, academics, and graduate students working in the field of petroleum engineering.

Petroleum refining and process engineering is constantly changing. No new refineries are being built, but companies all over the world are still expanding or re-purposing huge percentages of their refineries every year, year after year.

Rather than building entirely new plants, companies are spending billions of dollars in the research and development of new processes that can save time and money by being more efficient and environmentally safer. Biodesulfurization is one of those processes, and nowhere else it is covered more thoroughly or with more up-to-date research of the new advances than in this new volume from Wiley-Scrivener.

Crude oil consists of hydrocarbons, along with other minerals and trace elements. Sulfur is the most abundant element after carbon and hydrogen, then comes after it nitrogen, and they

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usually concentrated in the higher boiling fractions of the crude oil. The presence of sulfur compounds causes the corrosion of refining facilities and catalysts poisoning. Moreover, the presence of nitrogen-compounds directly impacts the refining processes via; poisoning the cracking catalysts and inhibiting the hydrodesulfurization catalysts. In addition, both have bad impacts on the environment, throughout the sulfur and nitrogen oxide emissions.

Removing this sulfur and nitrogen from the refining process protects equipment and the environment and creates a more efficient and cost-effective process. Besides the obvious benefits to biodesulfurization, there are new regulations in place within the industry with which companies will, over the next decade or longer, spend literally tens, if not hundreds, of billions of dollars to comply. Whether for the veteran engineer needing to update his or her library, the beginning engineer just learning about biodesulfurization, or even the student in a chemical engineering class, this outstanding new volume is a must-have. Especially it covers also the bioupgrading of crude oil and its fractions, bidenitrogenation technology and application of nanotechnology on both bio-desulfurization and denitrogenation technologies.

This exclusive compilation written by eminent experts from more than ten countries, outlines the processes and methods for geologic sequestration in different sinks. It discusses and highlights the details of individual storage types, including recent advances in the science and technology of carbon storage. The topic is of immense interest to geoscientists, reservoir engineers, environmentalists and researchers from the scientific and industrial communities working on the methodologies for carbon dioxide storage. Increasing concentrations of anthropogenic carbon dioxide in the atmosphere are often held responsible for the rising temperature of the globe. Geologic sequestration prevents

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atmospheric release of the waste greenhouse gases by storing them underground for geologically significant periods of time. The book addresses the need for an understanding of carbon reservoir characteristics and behavior. Other book volumes on carbon capture, utilization and storage (CCUS) attempt to cover the entire process of CCUS, but the topic of geologic sequestration is not discussed in detail. This book focuses on the recent trends and up-to-date information on different storage rock types, ranging from deep saline aquifers to coal to basaltic formations.

This report was produced under the Technical Assistance Grant: Determining the Potential for Carbon Capture and Storage (CCS) in Southeast Asia (TA 7575-REG), and is focused on an assessment of the CCS potential in Thailand, Viet Nam, and specific regions of Indonesia (South Sumatra) and the Philippines (Calabarzon). It contains inventories of carbon dioxide emission sources, estimates of overall storage potential, likely source-sink match options for potential CCS projects, and an analysis of existing policy, legal, and regulatory frameworks with a view toward supporting future CCS operations. The report also presents a comparative financial analysis of candidate CCS projects, highlights possible incentive schemes for financing CCS, and provides an actionable road map for pilot, demonstration, and commercial CCS projects.

Carbon dioxide has been implicated in the global climate change, and CO₂ sequestration is a technology being explored to curb the anthropogenic emission of CO₂ into the atmosphere. The injection of CO₂ for enhanced oil recovery (EOR) has the dual benefit of sequestering the CO₂ and extending the life of some older fields. This volume presents some of the latest information on these processes covering physical properties, operations, design, reservoir engineering, and geochemistry for AGI and the related technologies.

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Accompanying CD-ROM contains the results from the CO₂ capture projects.

In the wake of California's energy crisis, policymakers' rush to satisfy growing demand requirements may run the risk of naively ignoring the larger issues and dangers associated with increased reliance on nuclear power. A connection between national nuclear power programs and nuclear proliferation can be found in the strategic initiatives of North Korea, Iraq, Iran, India, and Pakistan. In response to this threat, the Nuclear Control Institute has assembled a consortium of experts to underscore the connection that exists between nuclear power and the proliferation of nuclear weapons. They evaluated proliferation risks and proposed viable alternative energy sources. This volume includes the analysis of such respected thinkers as Pulitzer Prize-winning author Richard Rhodes; Rep. Edward Markey (D-Mass.); Amory Lovins, CEO of the Rocky Mountain Institute; and Amb. Robert Galucci, dean of the Georgetown University School of Foreign Service.

Carbon dioxide sequestration is a technology that is being explored to curb the anthropogenic emission of CO₂ into the atmosphere. Carbon dioxide has been implicated in the global climate change and reducing them is a potential solution. The injection of carbon dioxide for enhanced oil recovery (EOR) has the dual benefit of sequestering the CO₂ and extending the life of some older fields. Sequestering CO₂ and EOR have many shared elements that make them comparable. This volume presents some of the latest information on these processes covering physical properties, operations, design, reservoir engineering, and geochemistry for AGI and the related technologies.

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