

Waterflooding Spe Textbook Series

This 2000 book provides an introduction to the nature, occurrence, physical properties, propagation, and uses of surfactants in the petroleum industry.

Basic level textbook covering concepts and practical analytical techniques of reservoir engineering.

A practical, fast-paced approach to teaching the concepts and problems common in petroleum engineering that will appeal to a wide range of disciplines Petrophysics is the study of rock properties and their interactions with fluids, including gases, liquid hydrocarbons, and

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aqueous solutions. This three-volume series from distinguished University of Texas professor Dr. Ekwere J. Peters provides a basic understanding of the physical properties of permeable geologic rocks and the interactions of the various fluids with their interstitial surfaces, with special focus on the transport properties of rocks for single-phase and multiphase flow. Based on Dr. Peters's graduate course that has been taught internationally in corporations and classrooms, the series covers core topics and includes full-color CT and NMR images, graphs, and figures to illustrate practical application of the material. Topics addressed in volume 2

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*(chapters 5-8) include Dispersion in porous media
Interfacial phenomena and wettability Capillary pressure
Relative permeability Advanced Petrophysics features
over 140 exercises designed to strengthen learning and
extend concepts into practice. Additional information in
the appendices covers dimensional analysis and a series
of real-world projects that enable the student to apply the
principles presented in the text to build a petrophysical
model using well logs and core data from a major
petroleum-producing province.*

*Contents of volumes 1 and 2 give a general view of the
essential material knowledge for students and*

professionals. Opportunity for deeper investigation is available from the extensive complementary references featured.

Advanced Petrophysics

Gas Reservoir Engineering

Chlorinated Solvent Source Zone Remediation

Essentials of Polymer Flooding Technique

Reservoir Formation Damage

Oil Well Testing Handbook is a valuable addition to any reservoir engineer's library, containing the basics of well testing methods as well as all of the latest developments in the field. Not only are "evergreen"

subjects, such as layered reservoirs, naturally fractured reservoirs, and wellbore effects, covered in depth, but newer developments, such as well testing for horizontal wells, are covered in full chapters. Covers real-life examples and cases The most up-to-date information on oil well testing available The perfect reference for the engineer or textbook for the petroleum engineering student

The wettability of oil reservoirs is the most important factor controlling the rate of oil recovery, providing a profound effect on petroleum production. The petroleum industry has increased the research effort

on wettability, but, so far, there has been limited coverage on the topic. Wettability reviews the major research and applications on wettability, capillary pressure and improved recovery. Critical topics including core preservation, the effect of wettability on relative permeability, surface forces such as van der Waals equation of state, petroleum traps and pore size effects are all included in this musthave handbook. Deciphering the techniques and examples will increase the efficiency and production of oil recovery, translating to stronger reservoir simulations and improved well production.

The purpose of this book is to help engineers and scientists better understand dense nonaqueous phase liquid (DNAPL) contamination of groundwater and the methods and technology used for characterization and remediation. Remediation of DNAPL source zones is very difficult and controversial and must be based on state-of-the-art knowledge of the behavior (transport and fate) of nonaqueous phase liquids in the subsurface and site specific geology, chemistry and hydrology. This volume is focused on the characterization and remediation of nonaqueous phase chlorinated solvents and it is hoped that mid-level

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engineers and scientists will find this book helpful in understanding the current state-of-practice of DNAPL source zone management and remediation.

Waterflooding begins with understanding the basic principles of immiscible displacement, then presents a systematic procedure for designing a waterflood.

An Official Publication of the Society of Petroleum Engineers

Waterflooding

Theory and Practice

Proceedings ... SPE Annual Technical Conference and Exhibition

Polymer-Improved Oil Recovery

Advances in Porous Media, Volume 3 presents in-depth review papers that give a comprehensive coverage of the field of transport in porous media. This is the third volume in the series which treats transport phenomena in porous media as an interdisciplinary topic. The objective of each chapter is to review the work done on a specific topic including theoretical, numerical as well as experimental studies. All contributors are from a variety of backgrounds, such as civil and environmental engineering, earth and environmental sciences. The articles are aimed at scientists and engineers from various fields who are concerned with the fundamentals and applications of processes in porous media. Advances in Porous Media,

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Volume 3 is a valuable source of information for both researchers in the field and those working in other related disciplines.

"The book covers the basic techniques of reservoir engineering necessary for a professional to master. The approach consists of starting from the fundamental physical laws down to the practical applications in reservoir engineering. Emphasis is placed on assumptions and limits attached to each concept and the link between theory and field applications. The theory in this book is developed with a homogenous unit system with useful formulas expressed in practical units."--BOOK JACKET.

The Complete, Up-to-Date, Practical Guide to Modern

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Petroleum Reservoir Engineering This is a complete, up-to-date guide to the practice of petroleum reservoir engineering, written by one of the world ' s most experienced professionals. Dr. Nnaemeka Ezekwe covers topics ranging from basic to advanced, focuses on currently acceptable practices and modern techniques, and illuminates key concepts with realistic case histories drawn from decades of working on petroleum reservoirs worldwide. Dr. Ezekwe begins by discussing the sources and applications of basic rock and fluid properties data. Next, he shows how to predict PVT properties of reservoir fluids from correlations and equations of state, and presents core concepts and techniques of reservoir engineering. Using case histories, he illustrates practical diagnostic analysis

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of reservoir performance, covers essentials of transient well test analysis, and presents leading secondary and enhanced oil recovery methods. Readers will find practical coverage of experience-based procedures for geologic modeling, reservoir characterization, and reservoir simulation. Dr. Ezekwe concludes by presenting a set of simple, practical principles for more effective management of petroleum reservoirs. With Petroleum Reservoir Engineering Practice readers will learn to

- Use the general material balance equation for basic reservoir analysis
- Perform volumetric and graphical calculations of gas or oil reserves
- Analyze pressure transients tests of normal wells, hydraulically fractured wells, and naturally fractured reservoirs
- Apply waterflooding,

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gasflooding, and other secondary recovery methods

- Screen reservoirs for EOR processes, and implement pilot and field-wide EOR projects.
- Use practical procedures to build and characterize geologic models, and conduct reservoir simulation
- Develop reservoir management strategies based on practical principles

Throughout, Dr. Ezekwe combines thorough coverage of analytical calculations and reservoir modeling as powerful tools that can be applied together on most reservoir analyses. Each topic is presented concisely and is supported with copious examples and references. The result is an ideal handbook for practicing engineers, scientists, and managers—and a complete textbook for petroleum engineering students.

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Commercial application of chemical enhanced oil recovery (cEOR) processes is expected to grow significantly over the next decade. Thus, Chemical Enhanced Oil Recovery (cEOR): A Practical Overview offers key knowledge and understanding of cEOR processes using an evidence-based approach intended for a broad audience ranging from field operators, researchers, to reservoir engineers dealing with the development and planning of cEOR field applications. This book is structured into three sections; the first section surveys overall EOR processes. The second section focuses on cEOR processes, while the final section describes the electrorheology technology. These sections are presented using a practical and realistic approach tailored for readers looking to improve their

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knowledge and understanding of cEOR processes in a nutshell.

Petroleum Reservoir Engineering Practice

Surfactants

The Fundamentals, Simulation, and Management of

Conventional and Unconventional Recoveries

Multiphase Flow Handbook, Second Edition

Essentials of Reservoir Engineering

This edition expands its scope as a conveniently arranged petroleum fluids reference book for the practicing petroleum engineer and an authoritative college text. This book is concerned with the application of

tracers to a wide variety of oil field operations. It provides the necessary nuclear concepts and techniques which are basic to oil field tracer applications. Laboratory and field techniques are explained and illustrated as are the associated regulatory and safety aspects. Within the book, each area of oil field use is considered separately and specific applications of tracers discussed and relevant literature reviewed. The use of non-radioactive tracers is pointed out wherever it is applicable. Due to the nature of this

competitive industry, much research is poorly documented, thus Tracers in the Oil Field aims to make the technology more available to current users in the oil field.

These two volumes contain chapters written by experts in such areas as bio and food rheology, polymer rheology, flow of suspensions, flow in porous media, electrorheological fluids, etc. Computational as well as analytical mathematical descriptions, involving appropriate constitutive equations deal with complex flow

situations of industrial importance. This work is unique in that it brings together state of the art reviews and recent advances in a variety of areas, involving viscoelastic materials, in a desirable and timely manner. Crude oil development and production in U.S. oil reservoirs can include up to three distinct phases: primary, secondary, and tertiary (or enhanced) recovery. During primary recovery, the natural pressure of the reservoir or gravity drive oil into the wellbore, combined with artificial lift techniques (such as pumps)

which bring the oil to the surface. But only about 10 percent of a reservoir's original oil in place is typically produced during primary recovery. Secondary recovery techniques to the field's productive life generally by injecting water or gas to displace oil and drive it to a production wellbore, resulting in the recovery of 20 to 40 percent of the original oil in place. In the past two decades, major oil companies and research organizations have conducted extensive theoretical and laboratory EOR (enhanced oil recovery)

researches, to include validating pilot and field trials relevant to much needed domestic commercial application, while western countries had terminated such endeavours almost completely due to low oil prices. In recent years, oil demand has soared and now these operations have become more desirable. This book is about the recent developments in the area as well as the technology for enhancing oil recovery. The book provides important case studies related to over one hundred EOR pilot and field applications in a

variety of oil fields. These case studies focus on practical problems, underlying theoretical and modelling methods, operational parameters (e.g., injected chemical concentration, slug sizes, flooding schemes and well spacing), solutions and sensitivity studies, and performance optimization strategies. The book strikes an ideal balance between theory and practice, and would be invaluable to academicians and oil company practitioners alike. Updated chemical EOR fundamentals providing clear picture of

**fundamental concepts Practical cases with
problems and solutions providing practical
analogues and experiences Actual data
regarding ranges of operation parameters
providing initial design parameters Step-by-
step calculation examples providing practical
engineers with convenient procedures
Streamline Simulation
Modern Chemical Enhanced Oil Recovery
Essentials of Reservoir ...
Principles and Best Practices
Enhanced Oil Recovery**

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This edited book explores the use of surfactants in upstream exploration and production (E&P). It provides a molecular, mechanistic and application-based approach to the topic, utilising contributions from the leading researchers in the field of organic surfactant chemistry and surfactant chemistry for upstream E&P. The book covers a wide range of problems in enhanced oil recovery and surfactant chemistry which have a large importance in drilling, fracking, hydrate inhibition and conformance. It begins by discussing the fundamentals of surfactants and their synthesis. It then moves on to present their applicability to a variety of situations such as gas injections, shale swelling inhibition, and acid stimulation. This book presents research in an evolving field, making it interesting to academics, postgraduate students, and experts within the field of oil and gas.

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The Design Engineering Aspects of Waterflooding provides a practical guide to the design of surface facilities and wells for a waterflood.

Fundamental Principles of Reservoir Engineering outlines the techniques required for the basic analysis of reservoirs prior to simulation. It reviews rock and fluid properties, reservoir statics, determination of original oil and gas in place

All too often, senior reservoir managers have found that their junior staff lack an adequate understanding of reservoir management techniques and best practices needed to optimize the development of oil and gas fields. Written by an expert professional/educator, Integrated Reservoir Asset Management introduces the reader to the processes and modeling paradigms needed to develop the skills to increase reservoir output and profitability and decrease guesswork.

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One of the only references to recognize the technical diversity of modern reservoir management teams, Fanchi seamlessly brings together concepts and terminology, creating an interdisciplinary approach for solving everyday problems. The book starts with an overview of reservoir management, fluids, geological principles used to characterization, and two key reservoir parameters (porosity and permeability). This is followed by an uncomplicated review of multi-phase fluid flow equations, an overview of the reservoir flow modeling process and fluid displacement concepts. All exercises and case studies are based on the authors 30 years of experience and appear at the conclusion of each chapter with hints in addition of full solutions. In addition, the book will be accompanied by a website featuring supplementary case studies and modeling exercises which is supported by an author generated computer

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program. Straightforward methods for characterizing subsurface environments Effortlessly gain and understanding of rock-fluid interaction relationships An uncomplicated overview of both engineering and scientific processes Exercises at the end of each chapter to demonstrate correct application Modeling tools and additional exercise are included on a companion website

a Practical Overview

Advances in the Flow and Rheology of Non-Newtonian Fluids

Fundamentals and Applications in the Petroleum Industry

Water flooding

Fundamental Principles of Reservoir Engineering

Nanotechnology for CO₂ Utilization in Oilfield Applications delivers a critical reference for

petroleum and reservoir engineers to learn the latest advancements of combining the use of CO2 and nanofluids to lower carbon footprint. Starting with the existing chemical and physical methods employed for synthesizing nanofluids, the reference moves into the scalability and fabrication techniques given for all the various nanofluids currently used in oilfield applications. This is followed by various, relevant characterization techniques. Advancing on, the reference covers nanofluids used in drilling, cementing, and EOR fluids, including their

challenges and implementation problems associated with the use of nanofluids. Finally, the authors discuss the combined application of CO₂ and nanofluids, listing challenges and benefits of CO₂, such as carbonation capacity of nanofluids via rheological analysis for better CO₂ utilization. Supported by visual world maps on CCS sites and case studies across the industry, this book gives today's engineers a much-needed tool to lower emissions. Covers applications for the scalability and reproducibility of fabrication techniques for

various nanofluids used in the oilfield, including visual world maps that showcase current stages and future CCS sites Helps readers understand CO2 case studies for subsurface applications, including CO2 injection into depleted reservoirs Provides knowledge on the existing challenges and hazards involved in CO2 for safer utilization Waterflooding

The importance of oil in the world economy cannot be overstated, and methods for recovering oil will be the subject of much scientific and engineering research for many

years to come. Even after the application of primary depletion and secondary recovery processes (usually waterflooding), much oil usually remains in a reservoir, and indeed in some heterogeneous reservoir systems as much as 70% of the original oil may remain. Thus, there is an enormous incentive for the development of improved or enhanced methods of oil recovery, aimed at recovering some portion of this remaining oil. The techniques used range from 'improved' secondary flooding methods (including polymer and certain gas injection

processes) through to 'enhanced' or 'tertiary' methods such as chemical (surfactant, caustic, foam), gas miscible (carbon dioxide, gas reinjection) and thermal (steam soak and drive, in-situ combustion). The distinction between the classification of the methods usually refers to the target oil that the process seeks to recover. That is, in 'improved' recovery we are usually aiming to increase the oil sweep efficiency, whereas in 'tertiary' recovery we aim to mobilise and recover residual or capillary trapped oil. There are a few books and collections of articles which give

general overviews of improved and enhanced oil recovery methods. However, for each recovery method, there is such a wide range of interconnected issues concerning the chemistry, physics and fluid mechanics of flow in porous media, that rarely are these adequately reviewed. The hottest, most important topic to reservoir engineers is reservoir simulation. Reservoir simulations are literally pictures of what a reservoir of oil or gas looks, or should look, like under the surface of the earth. A multitude of tools is available to the engineer to generate

these pictures, and, essentially, the more accurate the picture, the easier the engineer can get the product out of the ground, and, thus, the more profitable the well will be. Completely revised and updated throughout, this new edition of a GPP industry standard has completely new sections on coalbed methane, CO₂ sequestration (important for environmental concerns), Co₂ Flood, more sophisticated petrophysical models for geoscientists, examples of subsidence, additional geomechanical calculations, and much more. What makes this book so different

and valuable to the engineer is the accompanying software, used by reservoir engineers all over the world every day. The new software, IFLO (replacing WINB4D, in previous editions), is a simulator that the engineer can easily install in a Windows operating environment. IFLO generates simulations of how the well can be tapped and feeds this to the engineer in dynamic 3D perspective. This completely new software is much more functional, with better graphics and more scenarios from which the engineer can generate

simulations. This book and software helps the reservoir engineer do his or her job on a daily basis, better, more economically, and more efficiently. Without simulations, the reservoir engineer would not be able to do his or her job at all, and the technology available in this product is far superior to most companies' internal simulation software. It is also much less expensive (\$89.95 versus hundreds or even thousands of dollars) than off-the-shelf packages available from independent software companies servicing the oil and gas industry. It is, however,

just as, or more accurate than these overpriced competitors, having been created by a high-profile industry expert and having been used by engineers in the real world with successful and profitable results. This reference is THE industry standard to successfully modelling reservoirs, obtaining maximum supply and profiting from oil and gas reservoirs Includes downloadable software of the new IFLO reservoir simulation software, that can save your company thousands of dollars This edition has been updated to included new sections on environmentally

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important issues such as CO₂ sequestration, coalbed methane, CO₂ Flood The third edition also provides more sophisticated petrophysical models, examples of subsidence and additional geomechanical calculations

SPE Advanced Technology Series

Surfactants in Upstream E&P

User Guide for the MATLAB Reservoir

Simulation Toolbox (MRST)

Modeling the Effect of Injecting Low Salinity

Water on Oil Recovery from Carbonate

Reservoirs

Nanotechnology for CO₂ Utilization in Oilfield Applications

Provides an easy-to-read introduction to the area of polymer flooding to improve oil production. The production and utilization of oil has transformed our world. However, dwindling reserves are forcing industry to manage resources more efficiently, while searching for alternative fuel sources that are sustainable and environmentally friendly. Polymer flooding is an enhanced oil recovery technique that improves sweep, reduces water production, and improves recovery in geological reservoirs. This book summarizes the key factors associated with polymers

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and polymer flooding—from the selection of the type of polymer through characterization techniques, to field design and implementation—and discusses the main issues to consider when deploying this technology to improve oil recovery from mature reservoirs. *Essentials of Polymer Flooding Technique* introduces the area of polymer flooding at a basic level for those new to petroleum production. It describes how polymers are used to improve efficiency of “chemical” floods (involving surfactants and alkaline solutions). The book also offers a concise view of several key polymer-flooding topics that can't be found elsewhere. These are in the areas of pilot project design, field project engineering (water

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quality, oxygen removal, polymer dissolution equipment, filtration, pumps and other equipment), produced water treatment, economics, and some of the important field case histories that appear in the last section. Provides an easy to read introduction to polymer flooding to improve oil production whilst presenting the underlying mechanisms Employs “In A Nutshell” key point summaries at the end of each chapter Includes important field case studies to aid researchers in addressing time- and financial-consumption in dealing with this issue Discusses field engineering strategies appropriate for professionals working in field operation projects Essentials of Polymer Flooding Technique is an enlightening book

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that will be of great interest to petroleum engineers, reservoir engineers, geoscientists, managers in petroleum industry, students in the petroleum industry, and researchers in chemical enhanced oil recovery methods.

For many engineers, statistics is the method of last resort, when no deterministic method can be found to make sense of geological complexities. This volume shows that geological data and geology often have a mutually beneficial effect especially in the diagnosis of complex geological phenomena.

Reservoir Engineering focuses on the fundamental concepts related to the development of conventional and unconventional reservoirs and how these

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concepts are applied in the oil and gas industry to meet both economic and technical challenges. Written in easy to understand language, the book provides valuable information regarding present-day tools, techniques, and technologies and explains best practices on reservoir management and recovery approaches. Various reservoir workflow diagrams presented in the book provide a clear direction to meet the challenges of the profession. As most reservoir engineering decisions are based on reservoir simulation, a chapter is devoted to introduce the topic in lucid fashion. The addition of practical field case studies make Reservoir Engineering a valuable resource for reservoir

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engineers and other professionals in helping them implement a comprehensive plan to produce oil and gas based on reservoir modeling and economic analysis, execute a development plan, conduct reservoir surveillance on a continuous basis, evaluate reservoir performance, and apply corrective actions as necessary. Connects key reservoir fundamentals to modern engineering applications Bridges the conventional methods to the unconventional, showing the differences between the two processes Offers field case studies and workflow diagrams to help the reservoir professional and student develop and sharpen management skills for both conventional and unconventional reservoirs

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Reservoir Formation Damage, Second edition is a comprehensive treatise of the theory and modeling of common formation damage problems and is an important guide for research and development, laboratory testing for diagnosis and effective treatment, and tailor-fit- design of optimal strategies for mitigation of reservoir formation damage. The new edition includes field case histories and simulated scenarios demonstrating the consequences of formation damage in petroleum reservoirs Faruk Civan, Ph.D., is an Alumni Chair Professor in the Mewbourne School of Petroleum and Geological Engineering at the University of Oklahoma in Norman. Dr. Civan has received numerous honors

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and awards, including five distinguished lectureship awards and the 2003 SPE Distinguished Achievement Award for Petroleum Engineering Faculty. Petroleum engineers and managers get critical material on evaluation, prevention, and remediation of formation damage which can save or cost millions in profits from a mechanistic point of view State-of-the-Art knowledge and valuable insights into the nature of processes and operational practices causing formation damage Provides new strategies designed to minimize the impact of and avoid formation damage in petroleum reservoirs with the newest drilling, monitoring, and detection techniques An Introduction to Reservoir Simulation Using

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MATLAB/GNU Octave

Reservoir Engineering Handbook

Tracers in the Oil Field

Reservoir Engineering

The low salinity water injection technique (LSWI) has become one of the important research topics in the oil industry because of its possible advantages for improving oil recovery. Several mechanisms describing the LSWI process have been suggested in the literature; however, there is no consensus on a single main mechanism for the low salinity effect on oil recovery. As a result of the latter, there are few models for LSWI and especially for carbonates due to their heterogeneity and complexity. In this research, we proposed a systematic

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approach for modeling the LSWI effect on oil recovery from carbonates by proposing six different methods for history matching and three different LSWI models for the UTCHEM simulator, empirical, fundamental, and mechanistic LSWI models. The empirical LSWI model uses contact angle measurements and injected water salinity. The fundamental LSWI model captures the effect of LSWI through the trapping number. In the mechanistic LSWI model, we include the effect of different geochemical reactions through Gibbs free energy. Moreover, field-scale predictions of LSWI were performed and followed by a sensitivity analysis for the most influential design parameters using design of experiment (DoE). The LSWI technique was also optimized using the response surface methodology (RSM) where a response surface was

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built. Also, we moved a step further by investigating the combined effect of injecting low salinity water and carbon dioxide on oil recovery from carbonates through modeling of the process and numerical simulations using the UTCOMP simulator. The analysis showed that CO₂ is the main controller of the residual oil saturation whereas the low salinity water boosts the oil production rate by increasing the oil relative permeability through wettability alteration towards a more water-wet state. In addition, geochemical modeling of LSWI only and the combined effect of LSWI and CO₂ were performed using both UTCHEM and PHREEQC upon which the geochemical model in UTCHEM was modified and validated against PHREEQC. Based on the geochemical interpretation of the LSWI technique, we believe that

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wettability alteration is the main contributor to the LSWI effect on oil recovery from carbonates by anhydrite dissolution and surface charge change through pH exceeding the point of zero charge.

Gas Reservoir Engineering provides the undergraduate as well as the graduate student with an introduction to fundamental problem solving in gas reservoir engineering through practical equations and methods. Although much oil well technology applies to gas wells, many differences exist. This book helps students understand and recognize these differences to enable appropriate handling of gas reservoir problems. Natural gas production has become increasingly important in the U.S., and the wellhead revenue generated from it is now greater than the wellhead revenue generated

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from oil production. Because this trend eventually will be followed worldwide, we feel that it is important to emphasize gas reservoir engineering courses at the undergraduate level and to have a textbook devoted to this purpose. This book also serves as an introduction to gas reservoir engineering for graduate students and practicing petroleum engineers.

Although much of the technology for oil wells applies to gas wells, there are still many differences. It is important to learn these differences and to have a good, fundamental background in how to recognize and handle them. We have tried to provide practical equations and methods while emphasizing the fundamentals on which they are based. We have not attempted to be complete in the sense of presenting the best-known solution(s) to all problems in this area of

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technology. In many cases, we didn't even present the problem, much less a solution. Instead, we concentrated on fundamentals and hope to have made the literature in gas reservoir engineering more accessible both now and in the future. If you don't find your favorite topic in the table of contents or in the index, it simply didn't make our short list of fundamentals that we believed to be key parts of the literature.

The job of any reservoir engineer is to maximize production from a field to obtain the best economic return. To do this, the engineer must study the behavior and characteristics of a petroleum reservoir to determine the course of future development and production that will maximize the profit. Fluid flow, rock properties, water and gas coning, and relative

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permeability are only a few of the concepts that a reservoir engineer must understand to do the job right, and some of the tools of the trade are water influx calculations, lab tests of reservoir fluids, and oil and gas performance calculations. Two new chapters have been added to the first edition to make this book a complete resource for students and professionals in the petroleum industry: Principles of Waterflooding, Vapor-Liquid Phase Equilibria.

This book provides a self-contained introduction to the simulation of flow and transport in porous media, written by a developer of numerical methods. The reader will learn how to implement reservoir simulation models and computational algorithms in a robust and efficient manner. The book contains a large number of numerical examples, all fully

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equipped with online code and data, allowing the reader to reproduce results, and use them as a starting point for their own work. All of the examples in the book are based on the MATLAB Reservoir Simulation Toolbox (MRST), an open-source toolbox popular in both academic institutions and the petroleum industry. The book can also be seen as a user guide to the MRST software. It will prove invaluable for researchers, professionals and advanced students using reservoir simulation methods. This title is also available as Open Access on Cambridge Core.

The Design Engineering Aspects of Waterflooding
Statistics for Petroleum Engineers and Geoscientists
The Properties of Petroleum Fluids
Advances in Porous Media

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Integrated Reservoir Asset Management

Waterflooding is one of the most important methods of improving recovery from oil reservoirs. With the economic uncertainty of various enhanced oil recovery techniques (due to oil price instability) waterflooding optimization is more significant than ever. This book provides a thorough understanding of the practical approach to waterflood asset management. It uses multidisciplinary integrated teams and resource management practices to enhance hydrocarbon recovery and maximize profitability. Satter and Thakur are co-authors of PennWell Books' bestseller, Integrated Reservoir

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Management: A Team Approach. Readers Will Learn: the fundamentals of waterflood management and multidisciplinary technology; the team approach to management through real-life examples; and the integration of engineering, geology and geophysics with operations, research, economics, and legal/environmental processes for effective waterflood asset management.

The Multiphase Flow Handbook, Second Edition is a thoroughly updated and reorganized revision of the late Clayton Crowe's work, and provides a detailed look at the basic concepts and the wide range of applications in this important area of thermal/fluids

engineering. Revised by the new editors, Efsthios E. (Stathis) Michaelides and John D. Schwarzkopf, the new Second Edition begins with two chapters covering fundamental concepts and methods that pertain to all the types and applications of multiphase flow. The remaining chapters cover the applications and engineering systems that are relevant to all the types of multiphase flow and heat transfer. The twenty-one chapters and several sections of the book include the basic science as well as the contemporary engineering and technological applications of multiphase flow in a comprehensive way that is easy to follow and be

understood. The editors created a common set of nomenclature that is used throughout the book, allowing readers to easily compare fundamental theory with currently developing concepts and applications. With contributed chapters from sixty-two leading experts around the world, the Multiphase Flow Handbook, Second Edition is an essential reference for all researchers, academics and engineers working with complex thermal and fluid systems.

Oil Well Testing Handbook

Wettability

Chemical Enhanced Oil Recovery (cEOR)

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***Applied Petroleum Reservoir Engineering
Principles of Applied Reservoir Simulation***