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Titolo	Modern chemical enhanced oil recovery : theory and practice // James J. Sheng
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Descrizione fisica	1 online resource (647 p.)
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Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Front cover; Modern Chemical Enhanced Oil Recovery; Copyright page; Table of contents; Preface; Acknowledgments; Nomenclature; Greek Symbols; Superscripts; Subscripts; Chapter 1: Introduction; Enhanced Oil Recovery's Potential; Definitions of EOR and IOR; General Description of Chemical EOR Processes; Performance Evaluation of EOR Processes; Screening Criteria for Chemical EOR Processes; Naming Conventions and Units; Organization of This Book; Chapter 2: Transport of Chemicals and Fractional Flow Curve Analysis; Introduction; Diffusion; Dispersion Retardation of Chemicals in Single-Phase FlowTypes of Fronts; Fractional Flow Curve Analysis of Two-Phase Flow; Chapter 3: Salinity Effect and Ion Exchange; Introduction; Salinity; Ion Exchange; Low-Salinity Waterflooding in Sandstone Reservoirs; Salinity Effect on Waterflooding in Carbonate Reservoirs; Chapter 4: Mobility Control Requirement in EOR Processes; Introduction; Background; Setup of Simulation Model; Discussion of the CONCEPT OF THE Mobility Control Requirement; Theoretical Investigation; Numerical Investigation; Experimental Justification; Further Discussion Chapter 5: Polymer FloodingIntroduction; Types of Polymers and

Polymer-Related Systems; Properties of Polymer Solutions; Polymer Flow Behavior in Porous Media; Displacement Mechanisms in Polymer Flooding; Amount of Polymer Injected; Performance Analysis by Hall Plot; Polymer Mixing and Well Operations Related to Polymer Injection; Special Cases, Pilot Tests, and Field Applications of Polymer Flooding; Polymer Flooding Experience and Learning in China; Chapter 6: Polymer Viscoelastic Behavior and Its Effect on Field Facilities and Operations; Introduction; Viscoelasticity
Polymer Viscoelastic Behavior Observations of Viscoelastic Effect; Displacement Mechanisms of Viscoelastic Polymers; Effect of Polymer Solution Viscoelasticity on Injection and Production Facilities; Chapter 7: Surfactant Flooding; Introduction; Surfactants; Types of Microemulsions; Phase Behavior Tests; Surfactant Phase Behavior of Microemulsions and IFT; Viscosity of Microemulsion; Capillary Number; Trapping Number; Capillary Desaturation Curve; Relative Permeabilities in Surfactant Flooding; Surfactant Retention; Displacement Mechanisms; Amount of Surfactant Needed and Process Optimization
An Experimental Study of Surfactant Flooding Chapter 8: Optimum Phase Type and Optimum Salinity Profile in Surfactant Flooding; Introduction; Literature Review; Sensitivity Study; Further Discussion; Optimum Phase Type and Optimum Salinity Profile Concepts; Summary; Chapter 9: Surfactant-Polymer Flooding; Introduction; Surfactant-Polymer Competitive Adsorption; Surfactant-Polymer Interaction and Compatibility; Optimization of Surfactant-Polymer Injection Schemes; A Field Case of SP Flooding; Chapter 10: Alkaline Flooding; Introduction; Comparison of Alkalis Used in Alkaline Flooding
Alkaline Reaction with Crude Oil

Sommario/riassunto

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 pro

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Titolo	Grand Challenges in Algae Biotechnology // edited by Armin Hallmann, Pabulo H. Rampelotto
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Collana	Grand Challenges in Biology and Biotechnology, , 2367-1017
Disciplina	579.8 660.6 (edition:23)
Soggetti	Microbial genetics Microbial genomics Microbiology Algues Biotecnologia vegetal Microbial Genetics and Genomics Applied Microbiology Eukaryotic Microbiology Llibres electrònics
Lingua di pubblicazione	Inglese
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Livello bibliografico	Monografia
Nota di contenuto	Part 1. Developments in Key Enabling Technologies -- 1. Commercial Microalgal Cultivation Systems -- 2. Operational, Prophylactic, and Interdictive Technologies for Algal Crop Protection -- 3. Heterotrophic growth of microalgae -- 4. Agronomic Practices for Photoautotrophic Production of Algae Biomass -- 5. Advances in Genetic Engineering of Microalgae -- 6. Optimization of microalgae photosynthetic metabolism to close the gap with potential productivity -- 7. Metabolic Engineering and Synthetic Biology Approaches to Enhancing Production of Long-Chain Polyunsaturated Fatty Acids in Microalgae -- 8. Integrated Biorefineries for Algal Biomolecules -- 9. Combining microalgae-based wastewater treatment with biofuel and bio-based production in the frame of a biorefinery -- 10. Microalgal consortia: from wastewater treatment to bioenergy production -- 11. Downstream

Green Processes for Recovery of Bioactives from Algae -- Part 2. Framework and Progress of Practical Applications -- 12. Bioactive Compounds from Microalgae and their Potential Applications as Pharmaceuticals and Nutraceuticals -- 13. Metal Pollution in Water: Toxicity, Tolerance and Use of Algae as a Potential Remediation Solution -- 14. Benefits of Algal Extracts in Sustainable Agriculture -- 15. Deriving Economic Value from Metabolites in Cyanobacteria -- 16. European Union Legislation and Policies Relevant for Algae.

Sommario/riassunto

In this book, researchers and practitioners working in the field present the major promises of algae biotechnology and they critically discuss the challenges arising from applications. Based on this assessment, the authors explore the great scientific, industrial and economic potential opened up by algae biotechnology. The first part of the book presents recent developments in key enabling technologies, which are the driving force to unleash the enormous potential of algae biotechnology. The second part of the book focuses on how practical applications of algae biotechnology may provide new solutions to some of the grand challenges of the 21st century. Algae offer great potential to support the building of a bio-based economy and they can contribute new solutions to some of the grand challenges of the 21st century. Despite significant progress, algae biotechnology is yet far from fulfilling its potential. How to unleash this enormous potential is the challenge that the own field is facing. New cultivation technologies and bioprocess engineering allow for optimization of the operation strategy of state-of-the-art industrial-scale production systems and they reduce the production costs. Parallel to this, new molecular technologies for genetic and metabolic engineering of (micro)algae develop quickly. The optimization of existing biochemical pathways or the introduction of pathway components makes high-yield production of specific metabolites possible. Novel screening technologies including high-throughput technologies enables testing of extremely large numbers of samples and, thus, allow for large scale modelling of biomolecular processes, which would have not been possible in the past. Moreover, profitable production can demand for integrated biorefining, which combines consecutive processes and various feedstocks to produce both transportation fuel, electric energy and valuable chemicals.
