

# Modern Aspects of Chemical EOR

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# Modern Aspects of Chemical EOR

# Introduction:

This course will provide comprehensive coverage of all chemical EOR processes. The course materials are based on the instructor's hands-on experience, personal collection of field cases and learning, especially from GCC field practices where chemical EOR projects are mostly done. Although the focus will be on practical aspects, theories closely related to practical applications will be covered. It will include many quizzes, calculation exercises and simulation exercises for practice.

Each attendee must bring a laptop computer with Microsoft operating system.

# Who Should Attend?

The course is designed for professionals who want to know comprehensively how is the best practice in implementing chemical EOR projects

- Reservoir engineers
- Petroleum Engineers
- Chemist/Laboratory technicians
- Geologist
- Project engineers
- Project coordinators
- Project managers

# Methodology:

This interactive Training will be highly interactive, with opportunities to advance your opinions and ideas and will include;

- Lectures
- Workshop & Work Presentation
- Case Studies and Practical Exercise
- Videos and General Discussions

## **Certificate:**

**BTS** attendance certificate will be issued to all attendees completing minimum of 80% of the total course duration.

# **Objectives:**

- Understand each EOR mechanisms and the synergies of combined EOR methods
- Understand key parameters of each chemical process
- Have a good understanding of data range of key parameters
- Learn from practical experiences and case studies
- Know how to design, optimize and carry out a chemical EOR project
- Understand chemical EOR simulation
- Have a good knowledge that is not available in academic or scholar studies

### **Contents:**

#### **DAY 1 & DAY 2**

Day 1 begins with concepts about EOR such as incremental recovery and salinity. These are brief concepts to understand and select EOR methods. Day 1 and Day 2 continue with polymer flooding. The key parameters of polymer flooding are polymer viscosity to improve mobility ratio, and permeability reduction to improve injection profile. Special cases will be discussed.

- Introduction to Chemical EOR
- Polymer Flooding

#### DAY 3

Day 3 covers the chemical EOR process – surfactant flooding. To carry out a field project, we need to know what lab tests we need to do; we need to understand the parameters which are related to the reduction of residual oil saturation such as capillary number, IFT and capillary desaturation curve.

• Surfactant Flooding

#### DAY 4

Day 4 first covers alkaline reactions, followed by combined methods. We focus on the important aspects of combined methods: their interactions and synergies. We will address some important questions such as why single alkaline flooding may not work well, why polymer is always needed.

- Alkaline Flooding
- Alkaline-Surfactant-Polymer Flooding
- Screening Criteria for Chemical EOR Processes
- Special Issues from Course Participants

#### DAY 5

Day 5 summarizes advantages and disadvantages of each method and combined methods, and focuses on the problems with ASP which are much less discussed in the literature. We will discuss some practical issues and answer the questions from the attendees which will give the attendees an opportunity to make the best use of this course.

- Alkaline-Surfactant-Polymer Flooding
- Screening Criteria for Chemical EOR Processes
- Special Issues from Course Participants