MERCURY

Special Core Analysis (RES) Workshop

18 - 22 Jul 2027
Dubai (UAE)

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Special Core Analysis (RES) Workshop

Ref.: 15740_324807 **Date:** 18 - 22 Jul 2027 **Location:** Dubai (UAE) **Fees:** 4900 **Euro**

Introduction:

The Special Core Analysis RES Workshop is designed to provide in-depth knowledge and practical insights into the core principles of reservoir engineering and special core analysis SCAL. SCAL plays a role in reservoir characterization, impacting reserve calculations, reservoir model initialization, and enhanced recovery strategies for conventional and unconventional reservoirs, including emerging areas like carbon capture and hydrogen storage.

Participants will gain a comprehensive understanding of the essential measurements, challenges, and techniques required to assess reservoir performance. From coring techniques and sample selection to advanced testing methods for geochemical and reactive transport models, this Special Core Analysis RES workshop ensures a thorough approach to optimizing reservoir management and enhancing recovery efficiency.

This Special Core Analysis RES workshop is designed to provide comprehensive knowledge about special core analysis SCAL techniques and their application in oil and gas exploration. Participants will gain hands-on experience in special core analysis laboratories, learning the importance of SCAL in reservoir characterization.

The Special Core Analysis RES workshop will cover the meaning and definition of SCAL and highlight its role in optimizing hydrocarbon recovery. Understanding SCAL in oil and gas is essential for professionals working in reservoir engineering and RES oil and gas operations. It provides insight into the role of a residential energy specialist in the broader energy sector.

Targeted Groups:

- Reservoir Engineers.
- Petrophysicists.
- Geologists.
- Geophysicists.
- Core Analysts.
- Petroleum Engineers.
- Carbon Capture Specialists.
- Research and Development Scientists.
- EOR Enhanced Oil Recovery Experts.
- Production Engineers.
- Environmental Engineers.
- Subsurface Engineers.
- Technical Managers.

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Workshop Objectives:

At the end of this Special Core Analysis RES workshop, the participants will:

- Understand the role of SCAL in reservoir engineering and its impact on conventional, unconventional, and carbon capture reservoirs.
- Learn best practices for coring techniques, sample selection, and core handling procedures.
- Explore non-destructive core characterization using advanced CT and NMR imaging tools.
- Master SCAL methods for reserve calculations, including saturation and capillary pressure measurements.
- Analyze the effects of wettability on reserves and displacement efficiency.
- Apply displacement models and techniques for improving reservoir recovery.
- Assess water-oil, gas-oil, and three-phase relative permeability using advanced testing methods.
- Implement SCAL methods for geochemical and reactive transport modeling, focusing on carbon capture and hydrogen storage.
- Enhance skills in reservoir characterization and residual saturation grouping.
- Utilize digital rock and AI techniques in advanced SCAL methods for improved data analysis.

Targeted Competencies:

By the end of this Special Core Analysis RES training, the participant's competencies will:

- Reservoir Characterization Techniques.
- Core Sampling and Handling Proficiency.
- Advanced SCAL Testing Methods.
- Saturation and Capillary Pressure Analysis.
- Wettability and Permeability Assessment.
- Reserve Calculation and Modeling Skills.
- Reservoir Recovery and Displacement Analysis.
- Geochemical and Reactive Transport Modeling.
- Carbon Capture and Hydrogen Storage Testing.
- Numerical Data Evaluation for SCAL.
- Simulation Input and Sensitivity Analysis.
- Digital Rock and AI SCAL Applications.

Workshop Content:

Unit 1: Reservoir Engineering and SCAL Overview:

- Introduction to the role of SCAL in reservoir engineering.
- Importance of SCAL for conventional, unconventional, and carbon capture reservoirs.
- Key challenges in SCAL measurements and analysis.
- Impact of SCAL on reservoir characterization and recovery efficiency.
- Engineering implications of SCAL data for reservoir management.

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Unit 2: Coring Techniques and SCAL Sample Selection:

- Overview of coring operations and types of core samples.
- Core sizes, types, and limitations in different reservoirs.
- Sample selection criteria for SCAL tests.
- Core handling procedures and preservation techniques.
- Non-destructive core characterization using CT and NMR imaging tools.
- Ensuring quality control in sample selection and preparation.
- Use of routine and advanced tests for zonation and reservoir characterization.

Unit 3: SCAL Methods for Reserve Calculations and Reservoir Model Initialization:

- Saturation measurement techniques: resistivity, dielectric, and nuclear magnetic resonance.
- Capillary pressure measurement techniques and their significance.
- Deriving saturation height functions for reservoir models.
- Understanding wettability and its impact on reserves and fluid displacement.
- Application of SCAL data for initializing reservoir models.
- Challenges and quality control in reserve calculations using SCAL methods.

Unit 4: SCAL Methods for Reservoir Recovery:

- Fundamentals of displacement mechanisms in reservoirs.
- Dimensionless numbers and models used in SCAL.
- Techniques for measuring water-oil and gas-oil relative permeability.
- Quality control in procedure evaluation and numerical data conversion.
- Understanding relative permeability hysteresis and its implications.
- Selecting and refining data for simulator input in recovery models.
- Critical gas saturation and retrograde considerations in gas-oil systems.
- Gravity drainage methods and their role in reservoir recovery.
- Three-phase relative permeability measurement and validation techniques.

Unit 5: Advanced SCAL Methods for Geochemical and Reactive Transport Models:

- Experimental procedures for geochemical equilibrium testing.
- Analysis of miscible displacement and gas/water/rock interactions.
- Special SCAL tests for carbon capture and hydrogen storage applications.
- Evaluating seal integrity and sensitivity for carbon storage.
- Dispersion and diffusion measurements in reservoir systems.
- Gas-water relative permeability and reactive transport modeling.
- Simulation inputs for reactive transport models in carbonates and sandstones.
- Case studies and practical applications of SCAL data in reactive transport models.

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Registration form on the :
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code: 15740 **From:** 18 - 22 Jul 2027 **Venue:** Dubai (UAE) **Fees:** 4900 **Euro**

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