

Organic Petrography in Petroleum Exploration

London (UK)

19 - 23 August 2024

UK Training

PARTNER



Organic Petrography in Petroleum Exploration

Code: OG28 From: 19 - 23 August 2024 City: London (UK) Fees: 5000 Pound

Introduction

Organic petrography stands at the forefront of petroleum exploration, employing sophisticated microscopic and analytical methods to unveil the intricate secrets of organic matter within sedimentary rocks. With the global pursuit of hydrocarbon resources growing ever more intense, comprehending the organic constituents of source rocks becomes crucial for optimizing exploration strategies and maximizing resource extraction. This course offers a comprehensive overview of organic petrography, empowering participants with the knowledge and skills needed to interpret organic components within sedimentary rocks within the framework of petroleum systems.

Objectives

- Understand the principles and fundamentals of organic petrography, encompassing the origin, composition, and distribution of organic matter in sedimentary rocks.
- Master advanced microscopic and analytical techniques used in organic petrography, such as optical microscopy, scanning electron microscopy SEM, and Fourier transform infrared spectroscopy FTIR.
- Explore the significance of organic petrography in petroleum exploration, including its role in source rock evaluation, thermal maturity assessment, and reservoir characterization.
- Develop proficiency in interpreting organic petrographic data to reconstruct depositional environments, assess hydrocarbon generative potential, and predict petroleum migration pathways.
- Acquire skills in applying organic petrographic principles and techniques to real-world case studies and practical exercises, enhancing problem-solving abilities in petroleum exploration workflows.
- Understand the importance of vitrinite reflectance interpretation in assessing thermal maturity and its implications for hydrocarbon exploration.
- Learn techniques for characterizing dispersed organic matter in sedimentary rocks and its significance in evaluating source rock potential and petroleum system analysis.

Course Outlines

Day 1

Fundamentals of Organic Petrography

- Introduction to organic matter in sedimentary rocks
- Principles of organic petrography
- Classification and characterization of organic matter
- Sample preparation techniques for organic petrographic analysis

Day 2



Microscopic Techniques in Organic Petrography

- Basics and applications of optical microscopy
- Scanning electron microscopy SEM in organic petrography
- Image analysis and interpretation of organic petrographic data
- Vitrinite reflectance interpretation

Day 3

Analytical Techniques in Organic Petrography

- Fourier transform infrared spectroscopy FTIR for organic matter analysis
- Principles and applications of Raman spectroscopy
- Pyrolysis-gas chromatography/mass spectrometry Py-GC/MS for organic geochemical characterization
- Practical session: data interpretation and integration of analytical results

Day 4

Applications of Organic Petrography in Petroleum Exploration

- Source rock evaluation and organic facies analysis
- Thermal maturity assessment using organic petrographic proxies
- Reservoir quality prediction based on organic petrographic data
- Dispersed organic matter characterization

Day 5

Advanced Topics and Future Directions

- Cutting-edge developments in organic petrography research
- Emerging trends and technologies in organic matter analysis
- Practical considerations and challenges in organic petrographic studies
- Final assessment: synthesis of key concepts and practical applications

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