Organic Petrography in Petroleum Exploration

18 – 22 October 2027
Amsterdam (Netherlands)

UK Traininig
PARTNER



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Introduction

Organic petrography plays a pivotal role in petroleum exploration, utilizing advanced microscopic and analytical techniques to decipher the complexities of organic matter within sedimentary rocks. With the rising global demand for hydrocarbon resources, understanding the organic constituents of source rocks is crucial for refining petroleum exploration methods and maximizing resource extraction.

This course offers a comprehensive introduction to organic petrography, equipping participants with the knowledge and skills required to interpret organic components in sedimentary rocks within the framework of petroleum exploration techniques. Participants will gain insights into soil organic matter analysis, kerogen analysis, and source rock evaluation, along with expertise in geochemical analysis, which aids in predicting reservoir quality and hydrocarbon generation potential.

Course Objectives

- Understand the fundamentals of organic petrography: Explore the origin, composition, and distribution of organic matter in sedimentary rocks, including methods for soil organic matter analysis and kerogen analysis.
- Master advanced microscopic and analytical techniques: Gain hands-on experience with optical microscopy, scanning electron microscopy SEM, and Fourier transform infrared spectroscopy FTIR for analyzing organic materials.
- Explore the role of organic petrography in petroleum exploration: Learn its importance in source rock evaluation, thermal maturity assessment, and reservoir quality prediction.
- Interpret organic petrographic data: Reconstruct depositional environments, assess hydrocarbon generation potential, and predict petroleum migration pathways using geochemical analysis.
- Apply organic petrography to real-world exploration: Develop skills in coal petrography and evaluate petroleum systems through practical case studies.
- Understand the significance of vitrinite reflectance in thermal maturity assessments and its impact on petroleum exploration processes.



Course Outlines

Day 1: Fundamentals of Organic Petrography

- Introduction to organic matter in sedimentary rocks.
- Principles of organic petrography and petroleum exploration methods.
- 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.
- Use of scanning electron microscopy SEM in organic petrography.
- Image analysis and interpretation of organic petrographic data.
- Vitrinite reflectance interpretation for thermal maturity assessment.

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.
- Characterization of dispersed organic matter in sedimentary rocks.

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.



Why Attend This Course? Wins & Losses!

- Gain hands-on experience in geochemical analysis and kerogen analysis for source rock evaluation.
- Improve skills in interpreting organic petrographic data for petroleum exploration techniques.
- Learn about the latest petroleum exploration methods, giving you a competitive edge in petroleum geology courses.
- Develop a comprehensive understanding of the role of organic petrography in reservoir quality prediction and thermal maturity assessment.

Conclusion

This course highlights essential aspects of petroleum exploration, including kerogen analysis, source rock evaluation, and geochemical analysis, preparing participants to apply organic petrography in real-world exploration scenarios. By integrating advanced techniques with theoretical knowledge, participants will gain valuable insights into hydrocarbon resource exploration, ensuring a more efficient and informed approach to petroleum exploration processes.

Join this exclusive course today and be at the forefront of petroleum exploration!

