



HARNESS THE POWER  
OF KNOWLEDGE

**Application of Spectral Gamma  
Ray to Sedimentology and Facies  
Characterization and Organic  
Geochemistry**

**TRAIN**



Embark on an in-depth 5-day professional training journey to discover the transformative power of spectral gamma-ray (SGR) logging in unraveling the intricacies of sedimentology, facies characterization, and organic geochemistry

Designed for aspiring and experienced geologists, geophysicists, and explorationists, this course will delve into the fundamental principles, advanced techniques, and practical applications of SGR logging in subsurface exploration and evaluation

Through hands-on exercises, interactive lectures, and in-depth discussions, you will gain a profound understanding of how SGR data can be harnessed to identify and characterize sedimentary facies, assess organic richness, and predict hydrocarbon potential

### Course Objectives

By the end of this course, you will be able to:

- Comprehend the principles and physics of SGR logging and its advantages over conventional gamma-ray logging
- Identify and interpret key SGR elemental signatures and their relationships to sedimentary rock composition and mineralogy
- Utilize SGR data to differentiate and characterize sedimentary facies, including sandstones, shales, carbonates, and evaporites
- Apply SGR logging to assess the organic richness of sedimentary rocks and identify potential source rock intervals
- Integrate SGR data with other geological and geophysical data to enhance subsurface interpretation and hydrocarbon exploration

### Course Agenda

#### Day 1: Introduction to Spectral Gamma Ray Logging

- Explore the history and evolution of SGR logging and its role in subsurface exploration
- Understand the principles of SGR spectrometry and the measurement of elemental concentrations
- Review the acquisition and processing of SGR data, including calibration and quality control procedures

#### Day 2: SGR Elemental Signatures and Sedimentology

- Delve into the relationships between SGR elemental signatures and sedimentary rock composition and mineralogy
- Analyze the characteristics of SGR responses for various sedimentary facies, such as sandstones, shales, carbonates, and evaporites
- Utilize SGR data to identify and map sedimentary facies distributions in subsurface formations

#### Day 3: Facies Characterization and SGR Applications

- Apply SGR logging to enhance facies characterization and improve subsurface geological interpretations
- Explore the use of SGR data in reservoir characterization and identifying potential hydrocarbon reservoirs
- Integrate SGR facies interpretations with other geological and geophysical data for comprehensive subsurface analysis

#### Day 4: Organic Geochemistry and SGR Logging

- Understand the principles of organic geochemistry and the role of SGR logging in assessing organic richness
- Analyze the relationship between SGR elemental signatures and organic matter content in sedimentary rocks
- Utilize SGR data to identify potential source rock intervals and assess their hydrocarbon potential

#### Day 5: Integration and Applications in Hydrocarbon Exploration

- Integrate SGR data with other geological and geophysical data to enhance subsurface interpretation and hydrocarbon exploration
- Apply SGR logging to predict hydrocarbon potential and guide exploration strategies

- Explore real-world case studies to demonstrate the practical applications of SGR logging in hydrocarbon exploration

#### Who Should Attend

This course is designed for:

- Aspiring and experienced geologists seeking to expand their knowledge of SGR logging and its applications in sedimentology, facies characterization, and organic geochemistry
- Geophysicists involved in subsurface interpretation and evaluation using SGR data
- Petroleum explorationists utilizing SGR logging to identify and characterize potential hydrocarbon reservoirs
- Environmental scientists applying SGR logging to assess subsurface environmental conditions

#### Course Benefits

- Develop a comprehensive understanding of SGR logging principles, techniques, and applications
- Gain hands-on experience in analyzing, interpreting, and integrating SGR data for subsurface characterization
- Enhance your ability to identify and characterize sedimentary facies using SGR data
- Apply SGR logging to assess organic richness and predict hydrocarbon potential
- Stay updated on the latest advancements and trends in SGR logging technology and applications