

**About the Seminar:**

Fuel cell technologies are moving out of the research lab and are rapidly becoming economically competitive solutions in niche market applications such as lift trucks, backup power, and combined heat and power. As fuel cell technologies are adopted on a wider basis, engineers will need to understand their value proposition and operating principles. *Principles and Application of Fuel Cell Technologies* is a two-day seminar designed to give engineers and technicians a fundamental understanding of fuel cell system operation and provide examples of real world applications. This course focuses on applications where fuel cell technologies are being adopted as economically competitive solutions to batteries and diesel generators

**Who Should Attend:**

This seminar will benefit engineers, material scientists, and technical managers interested in energy efficiency, energy storage, and related fields. Fuel cell systems require extensive chemical, electrical, and mechanical engineering and integration to function properly. This course will discuss how each discipline is needed to integrate and improve these technologies. If you are Industrial, civil, and aerospace engineers will be interested in understanding specific applications of fuel cell technologies and their inherent competitive advantages. Future challenges for material scientists will also be discussed. The value proposition for fuel cell systems will also be described for the benefit of technical managers.

**Benefits of Attending:**

- Recognize how fuel cells help meet the energy challenges facing the world
- Understand the high efficiency of fuel cell systems
- Identify fuel cell types and competitive advantages
- Explain the operation of a PEM fuel cell and system operating characteristics
- Perform measurement on demonstration PEM fuel cell systems
- Learn about hydrogen generation, storage, and delivery methods
- Describe fuel cell lift truck, back up power, and automotive applications
- Describe combined heat and power and hydrogen cogeneration applications

**Course Concepts:**

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|----------------------------------|---------------------------|
| • Thermodynamics                 | • Fuel Cell Lift Trucks   |
| • Electrochemistry               | • Fuel Cell Back-up Power |
| • Material Science               | • Hydrogen Safety         |
| • Fuel Cell Types                | • Combined Heat and Power |
| • Application Value Propositions | • Fuel Cell Vehicles      |