## IV.J.6 Direct Methanol Fuel Cell Power Supply for All-Day True Wireless Mobile Computing (New Project)

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## Objectives

- Design, fabricate and validate a cost-effective, fully integrated fuel cell system for mobile computing applications.
- Deliver a working integrated fuel cell system for mobile computing applications.

## **Technical Barriers**

This project addresses the following technical barriers from the Fuel Cells section of the Hydrogen, Fuel Cells and Infrastructure Technologies Program Multi-Year Research, Development and Demonstration Plan:

- O. Stack Material and Manufacturing Cost
- P. Durability
- Q. Electrode Performance

## Approach

The tasks to accomplish this project will include development of the fuel cell stack technology; design and evaluation of the necessary fuel packaging; and construction, operation, and analysis of the integrated fuel cell system.

PolyFuel will provide fuel cell system development, including proprietary membrane electrode assemblies, stack design, balance-of-plant components, and final direct methanol fuel cell (DMFC) system fabrication and integration with a laptop computer system.

The fuel cells developed in this project will have specific power of 30 W/kg, power density of 30 W/L, energy density of 500 W-h/L, original equipment manufacturer cost less than \$5/W, and at least 1,000 hours of verifiable lifetime. The integrated system will be operated and tested under real-world conditions.