



Business Opportunities

Direct Methanol Fuel Cells

Executive Overview:

Direct Methanol Fuel Cells (DMFCs) represent an innovative, cutting-edge technology that can provide mobile power to devices such as cell phones, laptop computers, and digital video cameras. After decades of fuel cell research, scientists and engineers at Los Alamos National Laboratory (LANL) are working to remove the final obstacles preventing widespread adoption of DMFCs. LANL is now inviting participation from companies ready to cooperate with leading fuel cell researchers, in-license select technologies, and commercialize direct methanol fuel cell technology.

The Federal Aviation Administration (FAA) is already considering the approval of DMFC power packs for use on airplanes (a move that could occur by 2006). As with other potentially disruptive technologies, the participants in this entry market niche for extended in-flight mobile device power will enjoy a significant and sustained competitive advantage in the broader power pack market. The potential costs of ignoring this emerging technology are large. On the other hand, the cost and risk of "going it alone" and relying exclusively on internal development are also very high. Partnering with LANL represents an attractive alternative to these costly strategies.

By working with LANL, companies can plan a strategy to participate in the emerging DMFC market while minimizing R&D risks and expenditures. Our partners gain access to one of the most advanced and experienced direct methanol fuel cell research teams in the world, as well as LANL's extensive DMFC intellectual property (IP) portfolio. We invite you to explore the opportunities available through partnering with LANL to remove the final obstacles and bring DMFC technology to market.

Select LANL Fuel Cell IP:

- Air Breathing Direct Methanol Fuel Cell (U.S. patents 6,492,052 & 6,458,479)
- Methanol Sensor Operated in a Passive Mode (U.S. patent 6,488,837)
- Catalyst Inks and Method of Application for Direct Methanol Fuel Cells (U.S. patent 6,696,382)
- Fuel Cell with Metal Screen Flow-Field (U.S. patent 5,798,187)
- Fuel Cell Membrane Humidification (U.S. patent 5,952,119)
- Fuel Cell with Interdigitated Porous Flow-Field (U.S. patent 5,641,586)
- Membrane Catalyst Layer for Fuel Cells (U.S. patents 5,234,777 & 5,211,984)
- Direct Methanol Fuel Cell and System (U.S. Patent 6,808,838)
- Enhanced Flow Field and Bipolar Plate for a Fuel Cell (patent pending)
- Methods of Conditioning Direct Methanol Fuel Cells (patent pending)
- Efficient Direct Methanol Fuel Cell Stack (patent pending)
- Cathode Catalyst for Direct Methanol Fuel Cells (patent pending)
- High Power Density Direct Methanol Fuel Cell Stack Design (patent pending)

Partnership Mechanisms:

- Licensing Agreements
- Non-Federal Work-for-Others Agreements (WFO)
- Cooperative Research and Development Agreements (CRADA)



Direct methanol fuel cells provide an alternative power source for mobile devices. President George W. Bush is shown using a cell phone powered by LANL fuel cell technology.

Partner Benefits:

- Improved DMFC performance
- Reduced cost of R&D
- Reduced risk of R&D
- Reduced development cycle
- Design freedom (IP)

Advanced Technologies:

- High power density stacks
- Air breathing DMFCs
- Membranes
- Catalysts
- Flow-field designs
- Bipolar plate designs
- Methanol Sensors

Capabilities:

- Innovative stack design
- Membrane development
- Degradation testing and reduction
- Sensor development
- System integration
- System testing
- Modeling

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