



Next Generation Portable Power Solution
for Handheld Electronics



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mtimicroTM
fuel cells

An MTI Company (NASDAQ: MKTY)

Mobion[®] Flexible Solutions

MTI Micro is developing off-the-grid rechargeable power sources for portable electronics using its patented, proprietary direct methanol fuel cell technology platform called Mobion[®].

Mobion[®] chips are based on 100% methanol feed, passive water management and direct methanol fuel cell (DMFC) technology resulting in reduced parts count design that offers the advantage of higher energy density than competing fuel cell technologies for portable electronic devices.



Methanol is also known as methyl alcohol or wood alcohol. It occurs naturally in the environment, being generated by biological processes occurring in vegetation, microorganisms and other living species. It is water soluble and is biodegradable in either the presence or the absence of air. It does not generate any significant odor. Described by the chemical formula CH_3OH , methanol is a colorless liquid which has a number of industrial and consumer market uses. As a basic building block for hundreds of chemical products, methanol is being used safely and effectively for everything from plastics and paints to construction materials and windshield washer fluid.

Liquid methanol contains more energy per unit weight than any stored form of hydrogen applicable for man-portable power applications. It is significantly safer to handle than any type of collected hydrogen of significant energy content. Like other alcohols, methanol is flammable, however, small volumes of methanol packaged in sealed plastic containers, present little, if any danger to potential users in portable power applications. By October 1, 2008, approved fuel cartridges may be transported anywhere in the world via air-freight and also as a carry-on item, making methanol the ideal fuel choice for portable fuel cells. For additional methanol FAQs, please visit the Methanol Institute at <http://www.methanol.org/>

Mobion® external power charger prototypes



As the need for advancements in portable power increases, we have developed an external power charger prototype as a solution for powering portable electronic devices. It can recharge handheld consumer electronic products such as cell phones, PDAs, portable media players and other handheld mobile devices.

Our design for an external power charger is a stand-alone device that uses 100% methanol as its power source and a universal serial bus, or USB, interface as a power output connector. It is designed to provide 2.5 watts of power from its USB interface and also offer fast charge, ultra long run-time and self-charging modes.

Our current prototype external power charger provides up to one month of power for the typical mobile phone. It can also be designed to enable a professional photographer to take over 5,000 photos using a high-end digital camera from a single fuel tank.

Mobion® attached power source camera grip prototype



Similar to aftermarket battery attachments, our snap-on direct methanol fuel cell power solution is an attached power supply that is compatible with existing portable electronic devices and offers users extended run-time power. We envision a number of product applications, including attachments for digital cameras, portable media players, GPS devices and other consumer electronic products.

Our initial design is a direct methanol fuel cell camera grip that replaces comparable rechargeable lithium-ion battery-pack grips and is designed to provide twice as much energy as similar rechargeable lithium-ion battery based products. Our Mobion® direct methanol fuel cell camera grip allows photographers the benefits of extended usage and

the freedom to refill it with a methanol cartridge rather than by plugging it into a wall outlet.

Mobion® embedded power source smart phone and handheld GPS



Concept Model

Our goal is to produce direct methanol fuel cells that can be embedded into portable electronic devices in order to increase their run-time and to provide fast charge capability by hot-swapping 100% methanol cartridges.

We have developed an embedded fuel cell concept model designed for a smart phone and prototype for a GPS unit. The prototype unit includes a USB interface, allowing it to also be used as an

independent energy source for recharging mobile phones, digital cameras, portable media players and other handheld electronic devices.



Prototype

The concept model and prototype units highlight the anticipated future product direction for our portable power source products in the consumer market.

Key Technologies

Energy Source	100% Methanol
Temperature range	0°C to 40°C at any humidity level
Mobion® Performance	Passive DMFC
	Power density > 50mW/cm ²
	Output = 1.4 Wh per cc of fuel
	Chip size of 9cc compatible for handheld markets

Competitive Strengths of Mobion® Portable Power Source Products



Off-the-grid power source. Mobion® provides users of consumer electronic devices with extended mobility by providing power without having to attach to a wall outlet to recharge their devices.

Small size and low weight. The dimensions of Mobion® will enable our OEM customers to reduce the overall size and weight of their products.

Power density. Mobion® will have power density of over 50mW/cm² and high energy efficiencies of 1.4Wh/cc of methanol.

Power duration. Mobion® will offer longer run-time than currently available portable charging systems.

Ease of manufacturing. Mobion® will be manufactured using traditional injection molding techniques that will easily transfer to mass-manufacturing production lines.

Safety. Mobion® will utilize methanol fuel, which does not require storage under pressure or at low temperatures.

Environmentally friendly. Mobion® will utilize fully biodegradable methanol fuel.

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