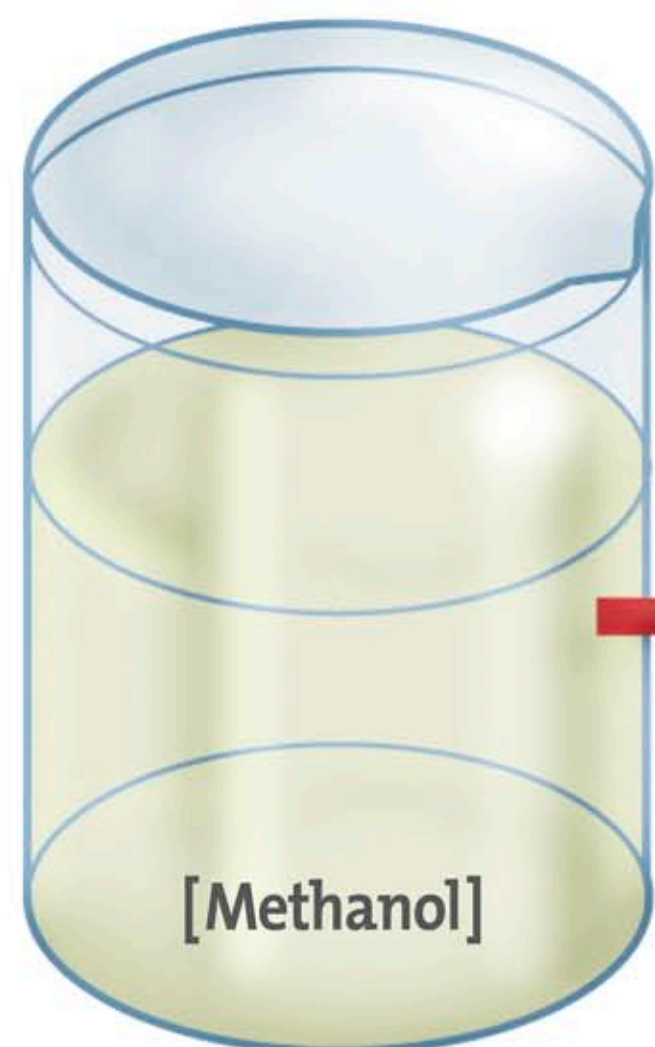


Fuel cells cut the need for cords and lithium-ion batteries

Big reaction

BY LARRY RULISON
BUSINESS WRITER

How Mobion fuel cells work



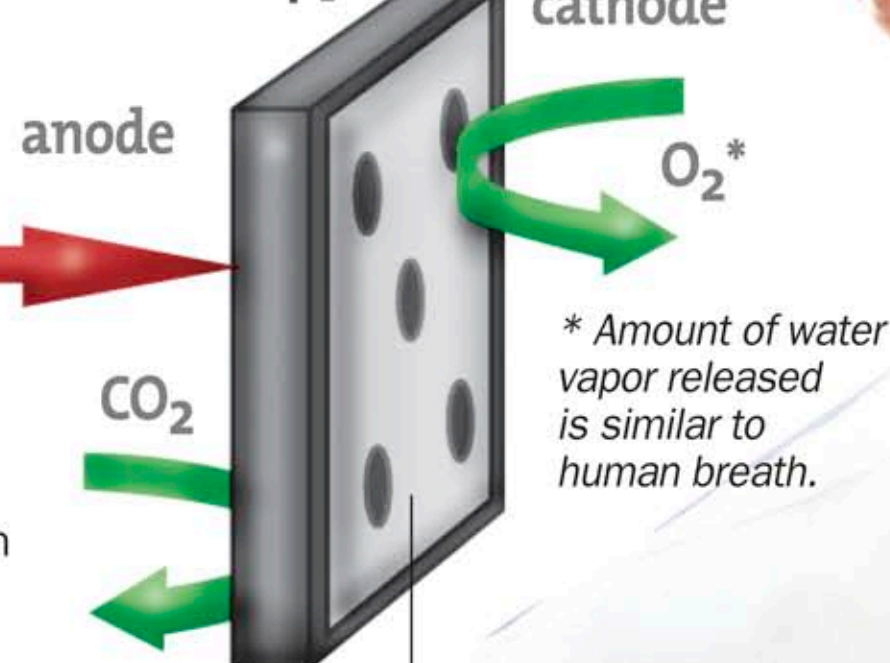
■ Mobion uses methanol as its fuel, which is pumped into the fuel cell "chip." When it interacts with a catalyst, the methanol produces electricity. Mobion advances traditional direct methanol fuel cells because its "passive water management" design does not require complicated micro-plumbing. This makes Mobion smaller, cheaper and more durable than its competition, according to MTI.

[Methanol Input]

■ Mobion will be used to charge electronic devices without plugging them into an outlet and as a direct power source inside a device.

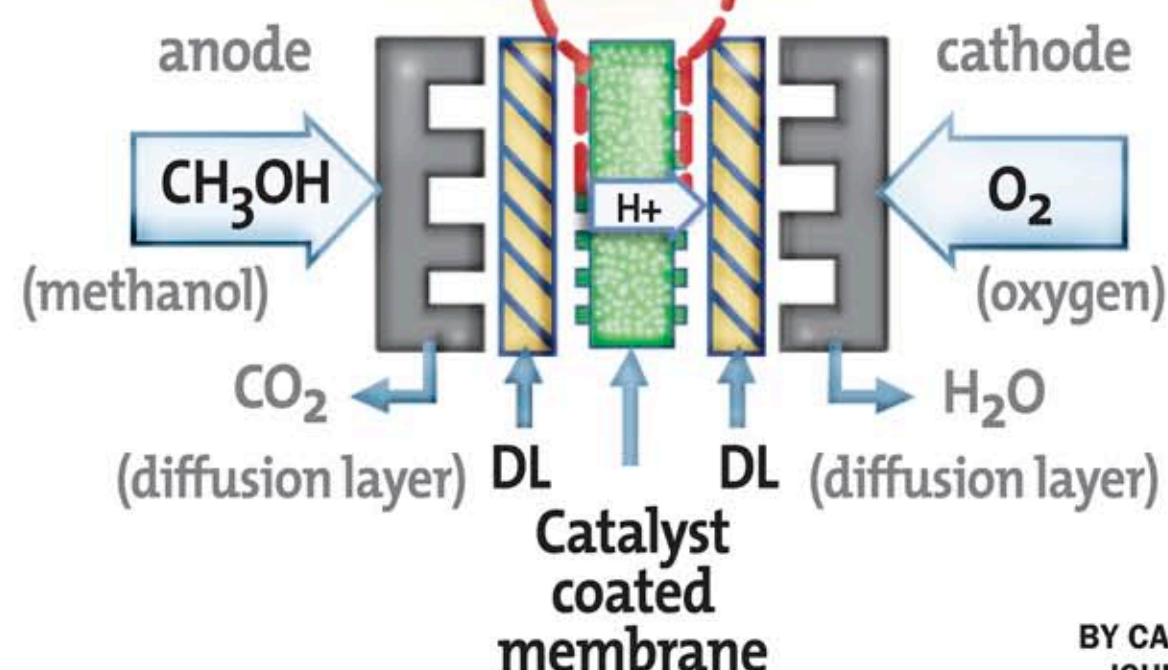
■ With a full tank of methanol, Mobion would charge a cellphone eight times, allow a small digital camera to take more than 1,400 pictures or recharge a 5 gigabyte MP3 player more than 10 times.

[Mobion Chip]



What is methanol?
A simple alcohol commonly used in windshield wiper fluid. It's biodegradable, can be easily stored, is readily available and inexpensive.

Electricity is produced when the energy of the chemical reaction is converted.



A look inside

DIAGRAMS BY CARIN LANE; PHOTO BY JOHN CARL D'ANNIBALE/TIMES UNION



MTI MicroFuel Cells Inc. in Colonie is developing a small fuel cell called Mobion that may one day replace traditional lithium-ion batteries or plug-in battery chargers used with portable consumer electronic devices such as cellphones, digital cameras and PDAs like the BlackBerry.

Fuel cells are "clean energy" devices similar to batteries that take a fuel such as hydrogen or methanol and convert it into electricity.

The fuel cell industry and companies like MTI Micro believe fuel cells will replace batteries and battery chargers used for many devices because they do not need to be plugged into an outlet, can pack more energy into a smaller space and eliminate dumping of heavy metal waste into landfills.

Peng K. Lim, CEO of Mechanical Technology Inc., was hired to help lead MTI Micro's effort to commercialize Mobion.

Things have taken off, and in May 2006, MTI Micro signed a \$1 million deal with consumer electronics giant Samsung Electronics Co. Ltd. of South Korea to design Mobion for use with cellphones.

Mobion will be powered with methanol supplied either through a tiny fuel tank or through replaceable methanol-filled cartridges. MTI Micro is working with The Gillette Co. and its Duracell subsidiary to develop these cartridges, and wants to be able to begin selling Mobion in 2009.

With the growth in the use of hand-held electronic devices, the market for power sources like batteries and, eventually, fuel cells, is expected to reach \$15 billion in three years.

"Mobile electronics are not completely mobile," said George Relan, vice president of corporate development for MTI.

"What Mobion does is cut the last cord," says Lim.

PENG K. LIM