

# **Worldwide Micro Fuel Cell Market Shares Strategies, and Forecasts, 2009-2015**

<https://marketpublishers.com/r/W6278721CE3EN.html>

Date: December 2008

Pages: 416

Price: US\$ 3,300.00 (Single User License)

ID: W6278721CE3EN

## **Abstracts**

Micro fuel cells address demand for higher energy density and longer lasting portable power devices. Micro fuel cells provide longer lasting energy sources for digital electronics. Micro fuel cells provide a hybrid storage technology that supports long term reliable portable electronics power. Renewable energy is base source for charging batteries, but micro fuel cell alternative charging is needed to provide power continuity. Batteries are a chemical process, but current devices do not last long enough. Fuel cells are one of several evolving technologies that promise to provide more reliable, longer portable power.

Micro fuel cell component costs continue to be an issue. Micro fuel cells are expected to be an expensive alternative to thin film batteries, providing hybrid technology that is needed for power continuity, but not basic power sources in most cases throughout the forecast period.

Economies of scale do not entirely solve the inherent high costs of high grade metallic catalysts used in micro fuel cells. More catalyst price reductions are needed to make micro fuel cells competitive with thin film batteries. Micro fuel cells are useful in many particular situations.

The direct methanol fuel cell (DMFC) portable power market for notebook computers, mobile phones, and other portable electronic devices is expected to grow significantly. Leading electronics manufacturers and innovative start-up companies are introducing products. Micro fuel cells are anticipated to work in combination with thin film batteries, creating hybrid power systems. Hybrid markets are expected to achieve market growth as the batteries are less expensive than the micro fuel cells. The micro fuel cells are useful for charging thin film batteries.

Micro fuel cell markets are at \$75 million at the end of 2008. By 2015, micro fuel cell markets reach \$5.59 billion. Another related segment, portable fuel cells used in bicycles and similar large portable devices represent a similar market opportunity. The micro fuel cells represent power for devices that include a range of PC, handset, PDA, and digital device segments in a variety of industry, military, and health care segments.

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Altair Nanomaterials  
Angstrom Power  
Asahi Glass  
Ballard  
BASF / E-TEK  
BASF Direct Methanol Fuel Cells  
Ceramic Fuel Cells  
Gore  
GrafTech International  
Heliocentris Fuel Cells AG  
Horizon  
ICM Plastics  
JMC / Tekion  
Smart Fuel Cells (SFC)  
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Manhattan Scientifics  
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Sanyo / Hoku Scientific  
SGL Technologies  
Electric Automotive Vehicle Smart Fuel Cell Battery Charger  
Solvay  
Tatung System Technologies  
UltraCell  
BASF Venture Capital / UltraCell

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