Carbon Nanotubes to Improve Fuel Cells

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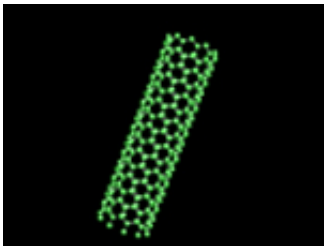

The National Institute of Standards and Technology (NIST) awarded Carbon Nanotechnologies, Inc., Motorola, Inc. and Johnson Matthey Fuel Cells, Inc. a $3.6 million grant **to develop "free standing"** carbon nanotube **electrodes for micro-fuel cells in order to meet the ever-growing demand for more power and longer run times in portable microelectronics**. The Advanced Technology Program award from NIST supports a 3 year, $7.4 million project to exploit the unique properties of single wall carbon-nanotubes (SWNT) in order to achieve siginificant breakthroughs in fuel cell performance, durability and manufacturability.

“It is a privilege to be associated with such great technology focused companies in this project and we are pleased that NIST sees the merit and the potential in this technology,” states Professor Richard E. Smalley, a 1996 Nobel Laureate and Carbon Nanotechnologies, Inc. chairman and co-founder. “Single wall carbon-nanotubes will enable many new products and I believe that fuel cell development will be an

early beneficiary of their powerful properties. Carbon nanotechnology should prove to be one of the great enablers in solving our country's energy problems."

Hand-held electronic devices are increasing in sophistication with their demands for electrical power seemingly rising exponentially. Rechargeable battery technology is mature, and unlikely to satisfy this demand. Small fuel cells have the potential to provide the power required, but this potential has not yet been recognized. In the longer term, success of the "hydrogen economy" is critically contingent upon increasing performance and durability, while decreasing associated manufacturing costs of present-day proton exchange membrane (PEM) fuel cells. These capabilities will be particularly important in fuel cells for distributed power generation and automotive applications.

If successful, the technology would enable not only dramatically improved compact PEM fuel cells for a host of current hand-held electronic devices, but would also enable the design and commercilization of more powerful next generation "wireless" devices.

The Advanced Technology Program, managed by the National Institute of Standards and Technology, provides cost-shared funding to industry for high-risk R&D projects with the potential to spark important, broad-based economic benefits for the United States. The awards are made on the basis of a rigorous peer-reviewed selection process.