



Infinite Power Solutions®

PRESS RELEASE

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INFINITE POWER SOLUTIONS' MICRO-ENERGY CELL ACHIEVES RECORD-BREAKING PERFORMANCE CAPABILITIES

Company Demonstrates 45mA/cm² Current Density and More Than 15,000 Deep Discharge Cycles— Displacing Any Lithium-based Rechargeable Battery Available Today

Littleton, Colo., May 12, 2009—Infinite Power Solutions, Inc. (IPS), a global leader in the manufacturing of high performance solid-state, rechargeable, thin-film micro-energy storage devices, today announced it achieved record-breaking current density and recharge cycles, beyond that of any Lithium-based (Li) rechargeable battery currently on the market. Today's announcement marks a significant milestone as it further demonstrates IPS' ability to deliver a variety of innovative micro-energy storage solutions with industry-leading performance. This latest achievement, together with the technology's ultra-low self discharge current and perpetual recharge capabilities via energy harvesting, elevate IPS' unique class of micro-energy cell (MEC™) to a transformational technology that fundamentally changes how the power source for micro-electronic products can and will be designed in the future.

In recent tests, IPS demonstrated a continuous discharge current measurement of 170mA at 25°C from a single MEC, 1 square-inch (25.4mm x 25.4mm x 0.17mm) in size—equivalent to a postage stamp. This translates to an active area continuous current density of 45mA/cm². Considering a starting discharge capacity of 0.7mAh, this high current equates to a nominal 240 capacity rate (C-rate). In comparison, a typical Li-ion cell phone battery delivers less than 10mA/cm², or 4 times less current per unit area. Although cell phone batteries are hundreds of times larger in total volume, they typically generate less than 2 C-rate.

IPS also reports it has demonstrated industry-leading deep discharge cycle capability with its high capacity MECs. The company tested 0.7mAh, 1 square-inch rechargeable cells to 100-percent depth of discharge (DOD) at 25°C for greater than 15,000 cycles at 9 C-rate with approximately 90-percent of their starting capacity maintained, as verified at the capacity-defining ½ C-rate. Other rechargeable batteries, such as Li-ion, Li-polymer and NiMH cells are usually cycled to only 80-percent DOD and rarely achieve 1,000 cycles with 80-percent capacity retention.

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Dr. Bernd Neudecker, IPS' chief technology officer, noted, "These outstanding current density and cycle life measurements demonstrate the enormous performance benefits that can be achieved with our unique battery architecture, solid-state electrolyte and proprietary manufacturing process. Our MEC products are clearly the world's most powerful batteries for their size, and thanks to their incredible cycle life, will deliver tens of ampere hours over their lifetime. These 'batteries for life' enable permanent integration into current and future electronic products."

When measured with a 50mA current, which equates to a 70 C-rate, greater than 70-percent of the rated discharge capacity was achieved by the MEC, which is also a first for any Li-based rechargeable battery available today. As testing continues, IPS expects its devices to achieve more than 20,000 cycles with 100-percent DOD and 80-percent capacity retention and more than 100,000 recharge cycles with shallow cycling to 50-percent DOD. Currently, IPS conservatively specifies the cycle life of its MEC standard products to 10,000 cycles at 100-percent DOD with 80-percent initial capacity retention, which boldly leads the industry by an order of magnitude. In comparison, other competing solid-state, thin-film batteries only specify 1,000 cycles at only 50-percent DOD on cells with far less capacity, and deliver only a fraction of the performance and lifetime of an IPS MEC.

The massive discharge current demonstrated by the MEC makes it the first battery technology suitable for replacing supercapacitors in many applications where discharge rates above 0.5 Amps are not required. Typical supercapacitors have self-discharge (leakage currents) of 10-100µA, which is thousands of times higher than IPS' MECs. Also, supercapacitors with 50-100 times more volume possess less energy than a MEC, and far less usable energy since typically 40-percent of the energy stored in a capacitor is below the voltage required by electronic circuits.

Commenting on today's announcement, Tim Bradow, IPS' vice president of technical marketing and business development, notes, "Our THINERGY MECs are high-performance energy storage devices that can replace supercapacitors where minimum volume and maximum energy density is critical, and significant discharge current, beyond that available from coin cells and all other thin batteries, is required. When combined with circuits that harvest ambient energy from sources such as solar, force, vibration, thermal and radio frequency (RF), MECs can be perpetually recharged to power wireless sensors and other micro-electronic devices—providing a safe, reusable and clean energy source that last the lifetime of a system with no maintenance or replacement cost."

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IPS will be exhibiting its THINERGY MEC technology and related products at the nanoPower Forum, which is being held May 18-20, 2009 at the Biltmore Hotel & Suites in Santa Clara, Calif. The company will also be at the Energy Harvesting & Storage Conference June 3-4, 2009 at The Gillespie Centre, Clare College, in Cambridge, United Kingdom, and at the Sensors Expo & Conference, which is being held June 8-10, 2009 at the Donald E. Stephens Convention Center in Rosemont, Ill. Editors interested in meeting with IPS executives to learn more about IPS and its transformational energy storage technology can contact Marie Labrie at mlabrie@mcapr.com.

About Infinite Power Solutions, Inc.

Infinite Power Solutions, Inc. (IPS)—a U.S.-based, clean-technology company—is the global leader in developing, marketing and manufacturing solid-state, rechargeable thin-film micro-energy storage devices for a variety of micro-electronic applications. Founded in 2001, IPS is privately held with corporate headquarters and manufacturing facilities in Littleton, Colo. The company has commenced pre-production of its revolutionary thin-film micro-energy cell (MEC™) products at its new state-of-the-art facility, which is the world's first volume manufacturing facility for solid-state, thin-film batteries. The company's unique energy storage products address the growing demand among customers in the wireless sensor, active RFID, powered smart card, medical device, consumer electronics, automotive and civil/military/aerospace markets. Additional information about IPS is available at www.InfinitePowerSolutions.com.

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