

ADA Technologies Completes Phase I Research on Advanced Lithium-ion Nano-Batteries

DENVER, Colo. (May 6, 2009): ADA Technologies, Inc. has completed research that demonstrates the technical feasibility of developing advanced lithium-ion nano-batteries. Funded by the National Science Foundation, the \$150,000 Phase I research focused on developing high-capacity / high-rate nano-structured electrodes that could be combined with environmentally benign electrolytes to significantly improve lithium-ion battery performance. The improvement in performance is due to the unique structures of nano-scale electrodes.

Lithium-ion batteries represent the current state-of-the-art technology for rechargeable batteries. However, performance (energy / power densities, safety, and cycle life) of currently available lithium-ion batteries is limited by electrode and electrolyte properties.

"The Phase I research was completely successful. Laboratory test batteries achieved excellent performance measures with the potential to achieve a two-fold increase in energy density and a ten-fold increase in power density compared to current state-of-the-art lithium-ion battery technology," said Wen Lu, Ph.D., project principal investigator and ADA Technologies senior research scientist.

Improvements in electrodes and electrolytes are needed to develop advanced lithium-ion batteries to satisfy increasing performance demands. Lithium-ion batteries are used in a wide range of applications, including consumer electronics (cell phones, laptops, pagers, camcorders), medical electronics (drug delivery units, portable defibrillators, neurological stimulators), transportation technology (electric vehicles, hybrid electric vehicles, plug-in hybrids), and military and defense (communication devices, unmanned aerial vehicles, spacecraft probes, missile systems).

ADA has received nearly \$1 million in grant money for advanced energy storage technology R&D, including the development of lithium-ion batteries and ultracapacitors.

About Wen Lu, Ph.D.

Dr. Wen Lu oversees ADA's R&D efforts in electrochemistry, electrochemical devices and materials science (inherently conducting polymers, electrolytes and nano materials). His work is focused on the applications of electrochemistry and materials science to the development of electrochemical devices, including electrochemical sensors/biosensors, electrochromic devices, electromechanical actuators, energy storage devices (batteries and ultracapacitors), energy conversion devices (fuel cells and photoelectrochemical cells), and environmental remediation devices.

Dr. Lu has authored more than 40 peer-reviewed articles on electrochemistry and electrochemical devices in prestigious journals including *Science*; he holds seven patents and is a sought-after presenter at professional meetings and workshops. His recent research on polymer electrochemical devices was listed among the major discoveries in molecular electronics by *Chemical & Engineering News* in its "Chemistry Highlights 2002" (C&EN, 80 (50), 46 (2002)). He was featured in an article entitled "Ionic liquids boost polymer performance," published in C&EN (27 (80), 26 (2002)) and in an article entitled "Polymer devices live longer" published in

Physics World (September 25, 2002). Dr. Lu is a member of The Electrochemical Society and International Society of Electrochemistry. He is a review panelist of the National Science Foundation SBIR/STTR Program and serves as a scientific reviewer for several scientific journals including Journal of The Electrochemical Society, Electrochimica Acta, Journal of Power Sources, Synthetic Metals, International Journal of Hydrogen Energy and Industrial & Engineering Chemistry Research.

Dr. Lu obtained a B.S. in Analytical Chemistry and an M.S. in Electrochemistry from Yunnan University in China, and a Ph.D. in Electrochemistry through the Intelligent Polymer Research Institute at the University of Wollongong in Australia.

About ADA Technologies, Inc.

ADA Technologies, Inc. is a research, development, and commercialization company that specializes in creating and converting innovative technologies to commercial successes. The firm is headquartered in Littleton, Colorado, with offices on the University of Wyoming campus in Laramie and the Virginia Tech Corporate Research Center, Blacksburg, VA. ADA has received more than 130 research grants totaling more than \$40 million. ADA has received numerous honors, including: 2006 Tibbetts Award, 2006, 2007 & 2008 Colorado Technology Fast 50, 2006 & 2007 Best Companies to Work For in Colorado and Colorado's Top Technology Company 2005. For more information, please visit www.adatech.com or call 303-792-5615.

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