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## **MEGTEC Pilot Line primed to speed cost-effective, custom development of Li-Ion battery electrodes for hybrid and electric vehicles**

**Recent upgrades and state-of-art commercial coating and drying  
methods enable tailoring and validation of multiple technologies**

De Pere, Wis., U.S.A. – March 15, 2010 – With the Li-Ion auto battery industry still in its infancy and numerous, similar-yet-unique technologies and processes under development, MEGTEC Systems, Inc., a global leader with a proven track record in coating and drying solutions for advanced materials, now offers leading-edge Pilot Line capabilities for Li-Ion systems. The line with recent upgrades is operational at MEGTEC headquarters in De Pere, Wisconsin.

“Timing, as well as the technology itself, is crucial for companies in an emerging industry such as this,” said Mohit Uberoi, President & CEO of MEGTEC Systems, Inc. “There is no single answer at this stage. Many standards for battery electrode production are yet to be established. Li-Ion battery developers and their investors know that lab-scale technologies holding promise need to be tested further to determine performance and cost competitiveness. The sooner they can conduct real-world, pilot line R&D and testing to validate their coating and material, the sooner they can optimize their process and move forward toward scale-up modeling and, ultimately, cost-effective commercial production.

“Our coating and drying pilot line for battery electrodes offers the flexibility Li-Ion battery electrode developers need to continue to develop cost effective solutions,” continued Uberoi. “Their coatings can be applied continuously, in lanes or intermittent (‘skips’); single-side (in sequence or tandem) or both sides simultaneously. If their specifications call for corona-treating aluminum substrate, we can do it here. Unlike many pilot lines, ours includes a fully



instrumented 3-zone flotation dryer commercially proven with a wide range of substrates and tensions.”

### **Tailor new technology on systems specially designed to meet auto industry demands**

Companies creating Li-Ion battery electrode technology will appreciate another feature of MEGTEC’s Pilot Line.

“We can mix slurry using each developer’s raw materials and additives in order to match unique chemistries,” Uberoi said. “This enables them to custom-tailor formulae in order to test and validate potentially patentable alternatives on-the-spot, during their trial run. While no pilot line is production *scale*, ours certainly is production *grade*. At MEGTEC you’re using the same systems and technology found on commercial machines currently producing Li-Ion auto batteries of commercial quality at production line speeds.”

Jeff Quass, MEGTEC Vice President, Global Operations and a 20-year veteran of engineering, R&D and operations management in equipment for advanced web materials processing, offered his thoughts on the advanced technology designed into these MEGTEC systems.

“It’s no accident that our line is the first and only one of its type currently producing electrode materials for the Li-Ion auto industry. Although some manufacturers of battery coating and drying systems may boast 15 or more years of Li-Ion experience, these lines are relatively slow and are virtual clones of one another.

“Contrast that with the demands of today’s auto battery industry,” added Quass. “Here we’re dealing with much larger, more complex systems. An auto battery can easily have over 100 cells. Auto battery coating lines call for much higher speeds, wider webs and more advanced systems. In short, there are major differences in the batteries themselves and in the technologies required to produce them.”

### **Game-changing technologies demand fresh production perspectives**

Quass believes the lack of flexibility as well as speed could also be major issues among larger-scale battery electrode manufacturers.



“Operations running at 20 meters per minute today will need to get to 40-50 meters per minute. When you consider the numerous new and diverse concepts being generated in the U.S. and elsewhere in order to produce truly affordable electric automobiles, current manufacturing operations don’t fill the bill. Trying to shoehorn new technologies into prepackaged lines simply doesn’t work.”

According to Quass, MEGTEC’s forte is developing custom solutions in high-speed, high-volume production.

“MEGTEC engineers have decades of experience in designing and building leading edge production drying systems for a broad spectrum of industries and applications. Rather than coming to the auto industry with preconceived answers or limitations, we first talked directly to key players about their needs for now and the foreseeable future. Then we proceeded to develop advanced technologies specifically tailored for battery electrode manufacturing.”

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“The critical step for most companies developing Li-Ion technologies is to develop test materials for validation of their chemistries. Our Pilot Line allows them to do this,” Quass said, noting a typical trial run takes about a week. This includes three days of actual testing, during which a number of trials can be performed. As long as raw materials are available, they can reformulate new slurries, run new products, and be positioned to optimize their process and move into production modeling.

“The world is waiting for truly viable electric vehicles to arrive *en masse*,” Quass said. “The Pilot Line at MEGTEC is ready for the power generators of tomorrow to take their next step.”

### **About MEGTEC**

MEGTEC Systems is a leading global turnkey supplier of custom coating, drying and environmental solutions for applications such as battery electrodes, photovoltaic cells, battery separators, solar films, membranes, clean room processes, and many more. MEGTEC’s vertical or horizontal dryer configurations can effectively dry or cure thin substrates of single-

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sided or simultaneous two-sided coated webs. For detailed information about the company's drying and coating line, laboratory coater, pilot coating line or solvent recovery and purification systems, contact Jim Nennig at (920) 337-1529 or submit your inquiry to [info@megtec.com](mailto:info@megtec.com).