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# EMERGING COMPANIES

*The NAATBatt 2014 Annual Meeting and Symposium*



One of NAATBatt's key missions is to promote the commercialization of new electrochemical energy storage technology. In furtherance of this mission, a committee of NAATBatt member firms has selected the following 20 emerging companies to make "flash" presentations at the annual meeting about the technologies they are working to commercialize. NAATBatt member firms are urged to contact any of these companies whose technology is of interest. Each of these emerging companies is seeking partnership opportunities within the industry to help bring their technology to market.

Ambri  
Shamrock Energy  
FastCAP Systems  
Dreamweaver International  
Altium Energy  
Battery Innovation Center  
Eos Energy  
Faraday Energy  
Von Ardenne  
Earl Energy  
Paper Battery Company  
XG Sciences  
XL Hybrids  
Voltaiq  
Porous Power Technologies

Design Flux Technologies  
Meecontech  
Princeton Power  
Southern Energy Technology Institute  
Spider9



**PRESENTER:** Mike Kearney, [mkearney@ambri.com](mailto:mkearney@ambri.com)

**DESCRIPTION:** Ambri (formerly Liquid Metal Battery Corporation) is developing an electricity storage solution that will change the way electric grids are operated worldwide. Ambri will enable the more widespread use of renewable generation like wind and solar, reduce power prices and increase system reliability. Ambri's technology — the liquid metal battery — was invented in the lab of Dr. Donald Sadoway, a professor at the Massachusetts Institute of Technology.



**PRESENTER:** Charlie Gibson, [cgibson@shamrockenergycorp.com](mailto:cgibson@shamrockenergycorp.com)

**DESCRIPTION:** Shamrock Energy Corporation is working to commercialize ultracapacitors that offer more than 40% higher energy density than conventional ultracapacitors through combined use of: (1) our proprietary low-cost activated carbon, which offers 20% higher specific capacitance than the industry standard YP-50; (2) our novel breakdown inhibitors, which increase operating voltage by 10%; and (3) our low-cost composite separators.



**PRESENTER:** Riccardo Signorelli, [jamie@fastcapsystems.com](mailto:jamie@fastcapsystems.com)

**DESCRIPTION:** FastCAP Systems, an MIT spin off specializing in rugged ultra-high temperature, energy and power ultracapacitor technologies, seeks to transform the automotive industry by commercializing its high-power, high-energy and low-cost energy storage devices. FastCAP's proprietary nanotechnology based solutions have enabled breakthrough performance of up to 10X the power and 5X the energy when compared with commercially available ultracapacitors



**PRESENTER:** Brian Morin, [Brian.Morin@dreamweaverintl.com](mailto:Brian.Morin@dreamweaverintl.com)

**DESCRIPTION:** DreamWeaver International, Inc. (DW) is an innovative advanced materials company with unique nanofiber-based battery separator technology which dramatically improves rechargeable battery performance for use in cell phones, laptop and tablet computers and electric vehicles.



**PRESENTER:** Neil Kane, [neildkane@gmail.com](mailto:neildkane@gmail.com)

**DESCRIPTION:** Altium Energy, Inc. is a startup formed to commercialize a patented flow battery, with twice the electrochemical potential of any flow battery on the market today, invented at the Gas Technology Institute in Des Plaines, Illinois.



**PRESENTER:** Chuck LaSota, [Charles.lasota@BICIndiana.com](mailto:Charles.lasota@BICIndiana.com)

**DESCRIPTION:** The Battery Innovation Center is a unique not for profit organization that incorporates work-class technical and scientific leadership from Universities, Industry, and Government Laboratories to collaboratively focus on the rapid development, testing and commercialization of safe, reliable, and lightweight energy storage systems for commercial applications and defense customers.



**PRESENTER:** Philippe Bouchard, [pbouchard@eosenergystorage.com](mailto:pbouchard@eosenergystorage.com)

**DESCRIPTION:** Eos Energy Storage is developing a proprietary rechargeable zinc battery technology with six hours of storage that is less expensive than existing energy storage technologies and lower in cost than incumbent gas fired peaking plants and traditional T&D upgrades



**FARADAY ENERGY**  
NEW FRONTIERS IN MATERIAL SYNTHESIS

**PRESENTER:** Steve Lipka, [steve.lipka@uky.edu](mailto:steve.lipka@uky.edu)

**DESCRIPTION:** Faraday Energy manufactures advanced carbon materials with tailored properties for energy storage applications. Faraday Energy also offers solutions for assembly and integration into energy systems including batteries and supercapacitors using sustainable, biocompatible materials with ultra-high purity derived from renewable sources.



**PRESENTER:** Martin Fischer, [Fischer.Martin@vonardenne.biz](mailto:Fischer.Martin@vonardenne.biz)

**DESCRIPTION:** Von Ardenne develops and manufactures advanced coating equipment that enables the deposition of microscale to nanoscale functional layers on materials such as glass, metal strip, wafers and polymer films.



**PRESENTER:** Doug Moorehead, [dmoorehead@earlenergy.com](mailto:dmoorehead@earlenergy.com)

**DESCRIPTION:** Earl Energy is a product development company that integrates advanced energy storage and power conversion technologies to hybridize commercial and military generators drastically reducing fuel consumption, maintenance, and emissions.



**PRESENTER:** Shreefal Mehta, [smehta@paperbatteryco.com](mailto:smehta@paperbatteryco.com)

**DESCRIPTION:** Paper Battery Company's proprietary materials processing technology gives it a strong industry leadership position in the thinnest, high power, ultracapacitor devices (PowerPatch™) that can be wrapped around lithium batteries, or fitted between or around components with minimal change in design required. Ultracapacitors can also increase densification of components, circuit boards and devices, enabling more compact products with better battery and device performance, a major driver for the portable electronics industry, and smartphones in particular.



**PRESENTER:** Rob Privette, [r.privette@xgsciences.com](mailto:r.privette@xgsciences.com)

**DESCRIPTION:** XG Sciences manufactures energy storage materials based on the company's xGnP® graphene nanoplatelets and XG Leaf™ graphene sheet products. XG Sciences Inc. is a leading supplier of graphene nanoplatelets and custom, graphene-based products to global corporations serving energy storage, aerospace, automotive, industrial and consumer markets. In addition to its electrode materials, XG Sciences makes thermal management materials, and electrically and thermally conductive inks, coatings and adhesives based on its graphene nanoplatelets.



**PRESENTER:** Tod Hynes, [thynes@xlhybrids.com](mailto:thynes@xlhybrids.com)

**DESCRIPTION:** XL Hybrids has developed and commercialized a cost-effective hybrid electric powertrain for class 1-6 commercial fleet vehicles which can easily be integrated in multiple makes and models and leverages a proprietary cloud based software platform to optimize fuel savings.



**PRESENTER:** Tal Sholklipper, [tal@subwaylabs.com](mailto:tal@subwaylabs.com)

**DESCRIPTION:** Voltaiq helps companies develop better, longer lasting energy devices. Our flagship product, Voltaiq Core, is an integrated data informatics platform to track energy device performance throughout the product lifecycle, from R&D to deployment. Voltaiq Core automates routine data management tasks, providing real-time, interactive access to battery data.



**PRESENTER:** Tim Feaver, [tfeaver@porouspower.com](mailto:tfeaver@porouspower.com)

**DESCRIPTION:** Ceramic-filled SYMMETRIX® separators from Porous Power Technologies are abuse tolerant and stable at high voltage, enabling a proven combination of Safety, Cycle Life and Performance not available from traditional polyolefin separators.



**PRESENTER:** Kent Kristensen, [kkristensen@designfluxtech.com](mailto:kkristensen@designfluxtech.com)

**DESCRIPTION:** Design Flux Technologies, LLC designs and sells Software-Defined Power Management Systems(TM) which reduce cost, enhance performance, and ease integration of energy storage systems for Original End Manufacturers by eliminating the need for traditional battery infrastructure.



**PRESENTER:** Tom Xu, [tom@meeotech.com](mailto:tom@meeotech.com)

**DESCRIPTION:** Meeotech offers a variety of energy storage materials, including cathode materials and anode materials for lithium ion batteries.



**PRESENTER:** Darren Hammell, [fdieso@princetonpower.com](mailto:fdieso@princetonpower.com)

**DESCRIPTION:** Princeton Power Systems is a leading global designer and manufacturer of technology products for energy management, micro-grid operations, and electric vehicle (EV) charging.



**PRESENTER:** Scott Pogue, [ScottPogue@setillc.com](mailto:ScottPogue@setillc.com)

**DESCRIPTION:** As energy represents a significant and highly volatile area of expenditure for most businesses, the Southern Energy Technology Institute (SETI) focuses upon fresh solutions for troublesome problems – an example is REMOTA™ - a mobile “Grid on the Go.”



**PRESENTER:** Michelle Chitambar, [mj@spider9.com](mailto:mj@spider9.com)

**DESCRIPTION:** Spider9 makes the world’s most advanced energy storage system controllers to enable higher reliability, longer life, and 40% lower lifetime costs for stationary energy storage. Spider9’s patented controls and Spider Sense software platform is the only solution that adapts in real time to optimize system performance, absorbs component failures to eliminate downtime, and future-proofs a system against changing technologies and revenue streams.