

## EVTC's EV Transportation & Technology Summit

The Electric Vehicle Transportation Center will host three days of meetings with key EV stakeholders at the Florida Solar Energy Center, October 20-22. The EV Transportation and Technology Summit will focus on transportation planning and infrastructure requirements needed to support the adoption of many forms of electric vehicles. The Summit will provide an update on the current state of EV deployment, technology and planning.

The Summit speaker list represents a broad cross section of those involved in the deployment of electric vehicles and includes, Ashley Horvat (PlugShare), Kristine Williams (Center for Urban Transportation Research) and Christian Ruoff (Charged Magazine). We believe they will provide a thorough understanding of the benefits and challenges to the broad adoption of all forms of electric vehicles. DOT, DOE, the City of Orlando, and utility company representatives will also present their vision of the future of transportation.

The summit will also provide an opportunity for students of engineering, planning and other disciplines to learn about EVs. More information on the Summit is available at the Summit website



*EV Transportation and Technology Summit*  
*October 20-22, 2015*  
*Cocoa, Florida*  
<http://www.evsummit.org/>



## EVTC Electric Vehicle Market & Technology Workshop

EVTC will conduct an Electric Vehicle Market & Technology Workshop on October 20th, prior to the EV Summit. This workshop will provide attendees with detailed information regarding the various types of electric vehicles currently on the market. There will also be a presentation on how consumers use their EVs and how their charging needs have been met. More information is available at the Workshop website.



*Electric Vehicle Market & Technology Workshop*

*October 20, 2015*

*Cocoa, Florida*

[http://evtc.fsec.ucf.edu/education/short\\_course/EV-Workshop.html](http://evtc.fsec.ucf.edu/education/short_course/EV-Workshop.html)



## EVTC's Dr. Fenton Featured in U.S.DOT Innovation Series



Dr. James Fenton presented, "PV, EV, and Your Home" on July 15th as the featured speaker for USDOT's Transportation Innovation Series hosted by the Office of Research and Technology (OST-R).

The presentation introduced transportation professionals to concepts that allow the transportation and grid infrastructures to work together, allowing PV, EVs and energy efficient buildings to significantly decrease our dependency on fossil fuels. Combining these technologies also mitigates climate change, provides mobile backup power, and increases energy and transportation security. The webinar was largely based on five articles that examine EVs, energy efficient homes, photovoltaics, the smart grid and EV charging; published in the Spring 2015 Interface magazine "PV, EV and Your Home" of the Electrochemical Society.

The link for the Interface articles is:

[http://issuu.com/ecs1902/docs/if\\_spr2015?e=15319453/12267597](http://issuu.com/ecs1902/docs/if_spr2015?e=15319453/12267597).

The link for Dr. Fenton's webinar is:

[http://www.rita.dot.gov/transportation\\_innovation\\_series\\_2015\\_07\\_15](http://www.rita.dot.gov/transportation_innovation_series_2015_07_15)

## Drive Electric Day at the Florida Capital

Drive Electric Floridas Drive Electric Day was a success by just about any measure. The day included a presentation at the Senate Transportation Committee meeting, formal meeting with legislators and staff, EV test drives and meetings with members of the media.



Photo: Drive Electric Florida

<https://www.facebook.com/driveelectricflorida/videos/634925536650647/?fref=nf>

## Drive Electric Orlando and Enterprise Add 14 Chevy Volts to Fleet

Drive Electric Orlando, Enterprise Rent-A-Car and business and community leaders teamed up to announce a major new addition to Enterprises local rental fleet in late September. Officials from Visit Orlando, the Orange County Convention Center, local theme parks and hotels joined Orlando Mayor Buddy Dyer in making the announcement.

Drive Electric Orlando is a consumer education and vehicle demonstration project that provides visitors to Orlando, Florida with a first-hand experience of the benefits of EVs through the availability of rental EVs. Drive Electric Orlando significantly reduces the anxiety that may accompany renting an EV by providing an enhanced level of engagement with the customer, providing a detailed understanding of the operation of the EV and the reassurance that comes with the knowledge that free vehicle charging is available at partner host hotels and theme parks. Rental of the EV is supported by a network of electric vehicle charging stations at hotels and theme parks throughout the region, as well as the City of Orlando's extensive urban EV charging infrastructure. Drive Electric Orlando recently received a \$400,000 grant from the U.S. Department of Energy to expand its EV car rental program. FSECs EVTC and Clean Cities staff will assist in the program expansion.



<http://driveelectricorlando.com/>

EVTC Profile: Dr. Matthieu Dubary



Matthieu Dubarry (PhD, Electrochemistry & Solid State Science, University of Nantes, France), has over 10 years of experience in renewable energy research, with an emphasis on lithium ion batteries. Following his PhD on the synthesis and characterization of materials for lithium batteries, Dr. Dubarry joined the Hawaii Natural Energy Institute (HNEI) at the University of Hawaii at Manoa as a post-doctoral fellow in 2005, where he worked on the analysis of the usage of a fleet of electric vehicles. He was later appointed to a faculty position in 2010 and continues his research on battery testing, modeling and simulation.

Dr. Dubarry pioneered the use of new techniques for the analysis of the degradation of Li-ion cells and developed a collection of software tools to facilitate the diagnosis and prognosis of Li-ion battery degradation both at the single cell and at the battery pack levels. Current projects include the evaluation of grid scale Li-ion battery energy storage systems; the evaluation of the impact of vehicle-to-grid strategies on electric vehicle battery pack degradation; and the testing of emerging battery technologies for grid-connected and transportation applications.

Dr. Dubarry's paper, "State-of-Charge Determination in Lithium-Ion Battery Packs Based on Two-Point Measurements in Life" can be found on the EVTC website at: <http://evtc.fsec.ucf.edu/publications/documents/A877.full.pdf>  
M. Dubarry, C. Truchot\*, A. Devie\* and B. Y. Liaw, J. Electrochem. Soc, 162(6), p. A877 (2015). DOI:10.1149/2.0201506jes

## EVTC Project Spotlight

Hawaii Sustainable Energy Research Facility (HiSERF)

The new state-of-the-art HNEI battery testing laboratory, located at HNEI's Hawaii Sustainable Energy Research Facility (HiSERF) in Honolulu, has been operational since April 15, 2015.

Within this new laboratory, latest generation battery testers are used in tandem with temperature chambers to carry out calendar and cycle aging testing on single cells and modules. A total of 62 channels are capable of sourcing and sinking from 25 to 100 amps, within voltages ranging from five to 25 volts. The battery testing laboratory has been designed with safety in mind. All batteries are tested inside temperature chambers and the laboratory itself is built in a retrofitted industrial fridge with its own air conditioning and ventilation system to provide complete isolation from the rest of the facility. Each temperature chamber is equipped with smoke, CO<sub>2</sub> and H<sub>2</sub> sensors to detect any gassing. Automatic detection will shut down all testing, flood the chamber with nitrogen, sound an alarm and notify personnel. The battery testing laboratory is internally nicknamed Pakali lab after the Hawaiian word for battery.



*Battery testing laboratory entrance, inside the temperature chamber, temperature chamber and battery tester & a commercial 18650 Li-ion cell used for the UTC project in a battery holder. (Photos: Dr. Arnaud Devie, HNEI)*

HNEI conducts research of state and national importance to develop, test and evaluate novel renewable energy technologies. The Institute leverages its in-house work with public-private partnerships to demonstrate real-world operations and enable integration of emerging technologies into the energy mix. Founded in 1974, HNEI was established in statute in 2007 to address critical state energy needs.

## General Interest

After several years of delay, Tesla officially launched its Model X SUV on September 28th. The X is expensive, starting at \$132,000. Porsche's top end SUV, the Cayenne Turbo, has an MSRP of \$114,700, plus the gas guzzler tax that comes with it.

The X can seat as many as seven and has a 257 mile range before needing a recharge. Like its sedan counterpart, the SUV is extraordinarily safe, having achieved a five-star safety rating in every category...a first for an SUV. Some of the other specs are: 90 kWh battery, 762 horsepower and 0-60 mph in as little as 3.2 second.

More information can be found at: <http://www.teslamotors.com/modelx>



*Photo: Tesla Motors*

## Meetings & Conferences

### Tuskegee EVTC Activity Days

Tuskegee, AL (October 6)

### Electric Vehicle Transportation Center EV Summit

Cocoa, FL (October 20-22)

### Electric Vehicle Transportation Center EV Market & Technology Workshop

Cocoa, FL (October 20)

### Florida Automated Vehicles Summit

Jacksonville, FL (December 1-2)

### SAE 2016 Hybrid & Electric Vehicle Technologies Symposium

Anaheim, CA (February 9-11, 2016)

## Useful Links

### *Electric Vehicle Transportation Center*

EVTC's website includes a complete listing of all EVTC information, research projects, reports and staff. <http://evtc.fsec.ucf.edu/index.htm>

### *Alternative Fuels Data Center*

Visit the U.S. Department of Energy's Alternative Fuels Data Center site for electric vehicles. The site contains information on the different types of electric vehicles, the benefits and considerations of owning an EV, a recharging station locator, information on incentives and legislation and much more. <http://www.afdc.energy.gov/fuels/electricity.html>

### *University Transportation Centers*

This site provides information about the University Transportation Centers, including a listing of UTC centers, publications and external links related to transportation education and training sites. <http://www.rita.dot.gov/utc/>

### *Transportation Research Board*

See the schedule of conferences and webinars hosted by the Transportation Research Board (TRB) at: <http://www.trb.org/Calendar/Calendar.aspx>

### *American National Standards Institute (ANSI)*

ANSI serves as a coordinator for the development of EVSE and PEV standards by the Society of Automotive Engineers (SAE), the National Highway Traffic Safety Administration (NHTSA) and many others. Their November 2014 Progress Report, "The Standardization Roadmap for Electric Vehicles" is an excellent source of information on standards development for electric vehicles and the associated infrastructure. [http://publicaa.ansi.org/sites/apdl/evsp/ANSI\\_EVSP\\_Progress\\_Report\\_Nov\\_2014.pdf](http://publicaa.ansi.org/sites/apdl/evsp/ANSI_EVSP_Progress_Report_Nov_2014.pdf)

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Project Partners

