

EVTC News

Volume 1, Issue 1 Spring 2015

A Message from Dr. David Block, EVTC Director

I am extremely pleased to write this beginning note to the Electric Vehicle Transportation Center's first newsletter. Our intent is to present brief news and information about EVTC projects so that all of our readers can obtain insight to the new and exciting field of electric vehicles for our nations transportation system. See <http://evtc.fsec.ucf.edu/index.htm> for information on the U.S. Department of Transportation funded Electric Vehicle Transportation Center. In each of the newsletters we will highlight one of our EVTC researchers. I also wish to recognize Doug Kettles as the newsletter editor. Please read on.

EVTC Dedicates New EV Chargers

A significant effort on the part of the EVTC staff has resulted in the donation and installation of a DC Fast Charging station by Nissan and NovaCharge. The 50kW station is installed on Florida Solar Energy Center (FSEC) property and will be used for research and public use. The Signet Systems FC50K-CC charger is equipped with the CHAdeMO connector. The charger's location at FSEC provides the first fast-charge coastal location for PEV owners traveling between Orlando and Floridas Space Coast; including visitors to the Kennedy Space Center and Cocoa Beach.

UCF's re-charging facility at FSEC also includes a 240-volt dual Level 2 charger, which can charge electric vehicles using the SAE standard J1772 connector.

The public grand opening of UCF's re-charging facility at FSEC was held on March 20th. Nissan and General Motors conducted Ride & Drives with the all-electric Nissan LEAF® and the Cadillac ELR. A variety of electric and plug-in hybrid vehicles were also on display.

<http://blog.floridaenergycenter.org/echronicle/2015/03/ucf-first-ev-fast-charger-grand-opening/>



EVTC Sponsors Electrathon Race

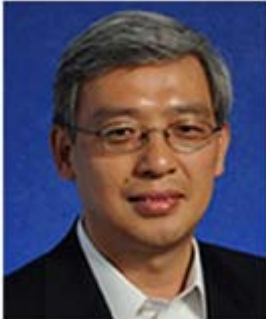
EVTC will sponsor an Electrathon of America race as an event at the Florida Solar Energy Centers annual *EnergyWhiz* event on May 2nd. The race, for go-cart size electric vehicles, compliments EVTC's STEM initiatives, teams are composed primarily of high school and college students. More information on Electrathon racing can be found on their website at:

http://electrathonamerica.org/Welcome_to_Electrathon_America.html



Image courtesy of Electrathon Florida

Meet EVTC's Co-Director, Dr. Zihua Qu



Dr. Qu joined the Department of Electrical Engineering at UCF in 1990, his research interests include system theory, advanced controls, and their applications to autonomous vehicles, smart grid, and other intelligent systems. As a part of the EVTC's multi-year Project 13, Optimal Charger Scheduling for Electric Vehicles on the Florida Turnpike, Dr. Qu's group has published several papers: Project 13's, [Scheduling and Cooperative Control of Electric Vehicles Charging at Highway Service Stations](#) in *2014 IEEE Conference on Decision and Control*, Stochastic Distributed Optimization of Reactive Power Operations Using Conditional Ensembles of V2G Capacity in *2015 American Control Conference*, and A Distributed Solution to Real-Time Economic Dispatch Problem Under Power Flow Congestion in *2015 IEEE PES General Meeting*.

Since 2010, Dr. Qu has been the Chair of Electrical and Computer Engineering (ECE) Department. He is a Professor of ECE, the SAIC Endowed Professor in the College of Engineering and Computer Science, as well as a Pegasus Professor of UCF. He is also the Director of the FEEDER Center funded by the U.S. Department of Energy.

EVTC Project Highlight

EVTC's Project 13, [Optimal Charger Scheduling for Electric Vehicles on the Florida Turnpike](#) goals are to analyze roadway traffic patterns and the expected timing of EV recharging. This project also investigates the requirements for electric vehicle supply equipment (EVSE) siting and the development of a wireless driver assistance application that would optimize the location and timing of charging for individual drivers.



Graphic courtesy of FDOT

EVTC Special Interest Stories

Bills Introduced in Florida Legislature to Exempt EVs from Sales Tax

Senator Daren Soto and Representative John Cortes have introduced legislation that would exempt electric and hydrogen vehicles from Florida sales and use taxes. If passed, Senate Bill 864 and House Bill 905 could possibly take effect as early as July of 2015.

For more information on the legislation, see the CleanTechnica article at:

http://cleantechnica.com/2015/03/20/support-florida-ev-tax-exemptions-plug-america/?utm_source=EV+News&utm_campaign=ad69ca1223-RSS_EMAIL_CAMPAIGN&utm_medium=email&utm_term=0_d002dfc067-ad69ca1223-332014069

Alternative Fuel Transportation Program Final Ruling

Last year, the Department of Energy completed its rulemaking revisions to the Alternative Fuel Transportation Program (AFTP). The primary goal of the program is the management of congressionally mandated adherence to EAct transportation regulatory activities. One of the EAct objectives is to reduce U.S. petroleum consumption through the use of alternative fuels, alternative fuel vehicles (AFVs), and other petroleum-displacement methods.

The first web link below is to last years DOE final ruling for 10 CFR Part 490, the Alternative Fuel Transportation Program. The website contains the latest definitions and logic that DOE is using for evaluating alternatively fueled vehicles, infrastructure, etc. An additional link is provided for the DOE's Vehicle Technology Office, which manages several Energy Policy Act (EAct) transportation regulatory activities.

http://www.ecfr.gov/cgi-bin/text-idx?c=ecfr&tpl=/ecfrbrowse/Title10/10cfr490_main_02.tpl
<http://www1.eere.energy.gov/vehiclesandfuels/epact/index.html>

Go Electric and Save, Alabama Power

Alabama Power offers an alternative rate for customers with a Plug-in electric vehicle (PEV) during off-peak hours. The rate rider allows customers to charge their electric vehicle at a discounted rate during the off-peak hours of 9 p.m. to 5 a.m. Customers must own a PEV that is manufactured primarily for use on public streets, roads, and highways. Customers wishing to participate in the program can call Alabama Power at 1-800-990-2726 for more information.

Alabama Power is also studying the impact of electric transportation on grid reliability, including vehicle-to-home and vehicle-to-grid technologies and is helping to develop industry standards for future plug-in electric vehicles.

More information on Alabama Powers program and electric vehicles is available at:

<http://www.alabamapower.com/environment/electric-transportation/go-electric.asp>

Florida Power and Lights Parent Company to Buy Hawaii Electric Industries

EVTC research partner University of Hawaii may have a new power service provider. NextEra Energy, parent company of Florida Power & Light, is purchasing Hawaii's biggest electricity company. NextEra believes that Hawaii provides a good opportunity to understand and integrate renewable energy and energy storage. Approximately 11 percent of Hawaiian Electric customers have rooftop solar systems, one of the highest penetrations of solar in the U.S. The estimate total value of the transaction is \$4.3 million.

Formula E Race Held in Miami

The inaugural race of Formula E in the U.S. was held in Miami in March. Formula E is a variation of the traditional Formula 1 racing series but uses cars that are all electric. Twenty identically prepared cars start the race and another 20 cars are exchanged midway through the 45-minute race. The cars produce 270 horsepower and reach a top speed of 140 mph. This was the fifth race of the international series which began in Beijing, the next U.S. race is in Long Beach, California on April 4th.

More information can be found at the FIA website:

<http://www.fia.com/championship/fia-formula-e-championship/2014/fia-formula-e-championship>



Photo courtesy of FIA

Alternative Fuel Vehicle Training Grant Awarded To Florida Solar Energy Center

The University of Central Floridas Solar Energy Center (FSEC) has been awarded a two-year \$600,000 grant to establish an alternatively fueled vehicle (AFV) safety training network for the state of Florida. The network will provide training on electric drive, CNG and propane vehicles for first responders, college instructors and tow-truck and salvage operators. The Central Florida Clean Cities Coalition, hosted by FSEC and coordinated by EVTC staffer Colleen Kettles, will develop and administer the program.

EVTC Staffer to Present at 3rd Annual University Transportation Center Conference for the Southeast Region.

Kevin Schleith will be presenting his paper on the impact and implications of EV sales on state and federal highway revenues at the 3rd Annual University Transportation Center Conference in Birmingham, Alabama on March 26th and 27th. Kevin is the Principle Investigator for EVTC's Project 1, [Implications of Electric Vehicle Penetration on State and Federal Highway Revenues](#). This project reviews existing industry and government reports, and details the impacts and shortfalls to highway funding as a result of EV market penetration.

Upcoming Conferences

[Third Annual University Transportation Center Conference for the Southeast Region](#)
Birmingham, AL; March 26-27

[2015 Alternative Clean Transportation \(ACT\) Expo](#)
Dallas, TX; May 4-7

[Transportation for Sustainability, an International Conference](#) (TRB Sponsored)
Washington, D.C.; May 7-8

[IEEE Wireless Power Transfer Conference](#)
Boulder, CO; May 13-15

TRB's [Fifth Annual International Conference on Transportation Systems Performance Measurement and Data](#)
Boulder, CO; May 31-June 2

[EV Roadmap 8](#)
Portland, OR; July 29-30

[International Symposium on Systematic Approaches to Environmental Sustainability in Transportation](#)
Fairbanks, AK; August 2-5

Useful Links

Electric Vehicle Transportation Center

Electric Vehicle Transportation Centers 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 Energys 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

This e-newsletter is published by the Electric Vehicle Transportation Center at the University of Central Florida, under contract with the U.S. Department of Transportation. For additional information please contact:

Doug Kettles

Email: dougkettles@fsec.ucf.edu

Electric Vehicle Transportation Center

1679 Clearlake Road

Cocoa, FL 32922-5703

Tel: (321) 638-1527

Project Partners

