



Energy for
generations



Faculty of Science & Engineering and ESB Visiting Lecture Series

PRESENTATION BY:

Dr. James Fenton, University of Central Florida

PRESENTATION TITLE:

In Florida, Photovoltaic Panels on Your Roof Are Your Best Investment, along with Electric Vehicles, Energy Storage & Energy Efficiency

Thursday 15th November 2018, 5pm to 6pm

Analog Devices Building, University of Limerick Campus

(Light refreshments will be served at 4.30pm)

To reserve a place please email:

eileen.madden@ul.ie

Please see below for Speaker Profile and Abstract



In Florida, Photovoltaic Panels on Your Roof Are Your Best Investment, along with Electric Vehicles, Energy Storage & Energy Efficiency

Today, in Florida the installed cost of PV on your roof can be as low as \$2.00 per peak Watt. At this price, the levelised cost of electricity from your roof is almost one-third the cost from the utility (about 4¢ per kWh from your roof versus about 11.8¢ per kWh from the utility). New and Retrofitted Net-Zero Energy Homes with additional PV for Electric Vehicle use are more than cost effective today. There are over 20 models of electric vehicles that are so efficient, that the solar system on your roof produces electricity at the gasoline equivalent of \$0.27 a gallon. As prices for solar and EVs continue to decrease, and as range anxiety is eliminated through 200 mile range EVs, consumer adoption rates for both technologies will increase dramatically, resulting in an integration of solar energy, energy efficient buildings and electric transportation infrastructure. Will we get out in front and surf the wave created by the solar and EV tsunami or will we drown?

Plug-in EVs through Vehicle 2 Grid (V2G) connections can meet frequency regulation and peak shaving requirements. Unfortunately, load shifting and back-up power require 1000's of plug-in EVs, while fuel cell plug-in hybrid electric vehicles (FC-PHEVs) can participate in all grid services and meet energy needs with 10's of FC-PHEVs and tanks. To meet new demands (EV charging) and address old issues (solar variability), hydrogen may be employed as an energy source (fuel cells) or energy sink (electrolysis). Both the production and consumption of hydrogen may occur at community levels to support EV charging as well as meet local energy demands.



Speaker Profile

James M. Fenton is the Director of the University of Central Florida's Florida Solar Energy Center (FSEC), where he leads a staff of 70 in the research and development of energy technologies that enhance Florida's and the nation's economy and environment and educate the public, students and practitioners on the results of the research. FSEC leads national programs funded by the U.S. Departments' of Energy and Transportation in: "Building America" energy efficient homes, Photovoltaic Manufacturing, Hot-Humid PV testing of large-scale PV to show bankability, Solar-Ready Vets and train-the-trainers education for solar installations, programs to decrease the soft-costs of PV installation, Electric Vehicle Transportation (U.S. DOT's only EV Transportation Center) and "Clean Cities" (alternative fuel transportation). He received his PhD in Chemical Engineering from the University of Illinois in 1984 and his BS from UCLA in 1979. He is serving as Secretary of The Electrochemical Society, an Electrochemical Society Fellow and received the Research Award of the Electrochemical Society's Energy Technology Division in May 2014 for his work on Automobile Proton Exchange Membrane Fuel Cells. He is the author of over 200 publications.

