

You are cordially invited to attend the following seminar.

Jointly Organized by

School of Electrical & Electronic Engineering (EEE),  
Nanyang Technological University (NTU) and  
IEEE Industry Applications and Power Electronics Joint Chapter, Singapore.

Title:

## **A Green Power Interface for “Living & Mobility”**

Speaker:

**Dr Udaya Madawala,**  
**Department of Electrical and Computer Engineering,**  
**University of Auckland, New Zealand**

Venue: Seminar Room (S2-B2B-77) at School of EEE, NTU

Time: 10:00 – 11.00 am

Date: 9 November (Monday)

### **Abstract:**

Depletion of fossil energy reserves and environmental pollution, caused by the inefficient and irresponsible rate at which energy is consumed, are major global concerns at economic, environmental, industrial and community levels. As such worldwide focus amongst politicians, scientist, manufacturers, environmentalists and consumers alike, is now on harnessing renewable energy together with energy savings at generation, transmission, distribution and even consumption. This seminar proposes a novel ‘Living and Mobility’ Green Power Interface, which allows easy integration of multiple renewable energy sources while utilizing plugin- electric vehicles for storage of renewable energy as well as for transportation or mobility. The proposed system, which comprises of multiple renewable energy sources, an energy storage, a bi-directional power module with a grid-interface, a web and wireless communication interface and a contactless power module for plug-in electric vehicles, is supervised by an efficient energy management unit (EEMU). The amount and the direction of power flow amongst the sub-systems, which include the grid, renewable energy sources, household load and vehicles, are controlled by the EEMU in accordance with the systems variables. The seminar presents innovative technologies in relation to both energy generation and utilization, and focuses particularly on a ‘wireless’ Power Transfer interface, which enables efficient and contactless power transfer between multiple of plug-in electric vehicles and household power modules.

### **Speaker Biography:**

Dr. Udaya K. Madawala (Senior Member IEEE) graduated with B. Sc. (Electrical Engineering) (Hons) from The University of Moratuwa, Sri Lanka in 1987 and received his PhD (Power Electronics) from The University of Auckland, New Zealand in 1993. He was employed by Fisher & Paykel Ltd, New Zealand, in 1993, where he worked as a Research and Development Engineer in the area of novel concepts on motor design and control. In 1996 he joined the

Department of Electrical and Computer Engineering at The University of Auckland, New Zealand, as a Research Fellow and worked on energy related various power electronics projects. At present, he is a fulltime Senior Lecturer, and serves as an Associate Editor for IEEE Transactions on Industrial Electronics, IEEE Transactions on Power Electronics and International Journal on Industrial Electronics and Motor Drives. He is the Chairman of the Joint Chapter of IEEE Industrial Electronics and Industrial Applications Society, New Zealand (North), and a member of the Power Electronics Technical Committee of IEEE Industrial Electronic Society. He has more than 70 international publications and 3 patents. His research interests are in the fields of renewable energy, power electronics, inductive power transfer and green power, and he works as a consultant to industry in these fields.