

Seminar Talk

Ru-Min Chao

Department of Systems and Naval Mechatronics Engineering

National Cheng Kung University

Tainan, Taiwan 701, ROC

rmchao@mail.ncku.edu.tw

Friday, October 3, 2014

3:00 p.m. KH 224

Title:

A Distributed PV Power Generation System: Development and Applications.

Abstract:

This talk gives a brief review of the use of photovoltaic energy system consisting of the PV panels, maximum power point tracker, DC/DC converter and DC/AC inverter. In order to avoid the extra power loss due to panel degrading, partial shading effects, etc, the distributed PV system is also introduced. Recent research activities at NCKU on the development of a new distributed PV system will be addressed. A few possible MPPT methods associated with the system will also be discussed, such as the quadratic maximization, the particle swarm optimization and the steepest decent method. Finally, we will also discuss two possible applications for the proposed PV system: (1) The PV shelter design for EV recharging station or battery exchanging for electric scooter; (2) Solar auxiliary power boat design.

Short Biography:

Dr. Ru-Min Chao received his doctoral degree from University of Pittsburgh in Mechanical Engineering in 1991 and then joined the Department of Systems and Naval Mechatronics Engineering, National Cheng-Kung University as a faculty. His current research interest is developing the smart photovoltaic power harvest and energy management system. He has three patents. His recent one is a maximum power point tracking method for photovoltaic system. In 2013, he and his student team won the annual Green Engineering Award of the sixth National Instruments Technical Application Contest.

