

**Report of 2015 IEEE Circuits and Systems Society Outreach Awarded
Proposal ID# 1264
(Technical Seminars on Selected Topics on Circuits and Systems)**

By

Dr. Chi Seng Lam, State Key Laboratory of Analog and Mixed Signal VLSI, University of
Macau, Macao, China

Technical Seminar #1

Date: 16 October 2015 (Friday)

Time: 19:00pm – 22:00pm

Venue: E11 -1015, University of Macau, Macao, China

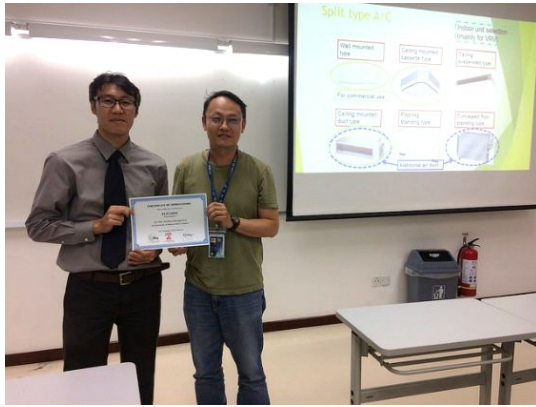
Name of Speaker: Mr. Ka-Ip Leong, E&M Senior Engineer, Functional Head of E&M Facilities in Facility
Operations and Maintenance Section, University of Macau

Topic: Facilities Management in University of Macau New Campus

Abstract: University of Macau (UM) in August 2014 relocated to the new campus and it covers approximately 1.09 square kilometres, is 20 times larger than the old campus, and can accommodate at least 15, 000 students. Many electrical and mechanical (E&M) facilities and systems are being used in the new campus and a good management for such facilities are essential to guarantee all building facilities and systems operating effectively and efficiently and ensuring a safe campus environment to all UM communities. In this seminar, it is mainly to introduce the E&M facilities and systems, the green design in new campus, the operation and maintenance and the energy saving measures being adopted in UM. The facilities management should be included by not limited to avoid any unnecessary maintenance causing any inconvenience to the community and besides the most important is to avoid any life and property lost. In additional, low cost with high productivity and quality is the goal as well. The system design, operations and maintenance (O&M) working examples and experiences in facilities management of different facilities and systems will be shared and discussed.

Speaker Biography:

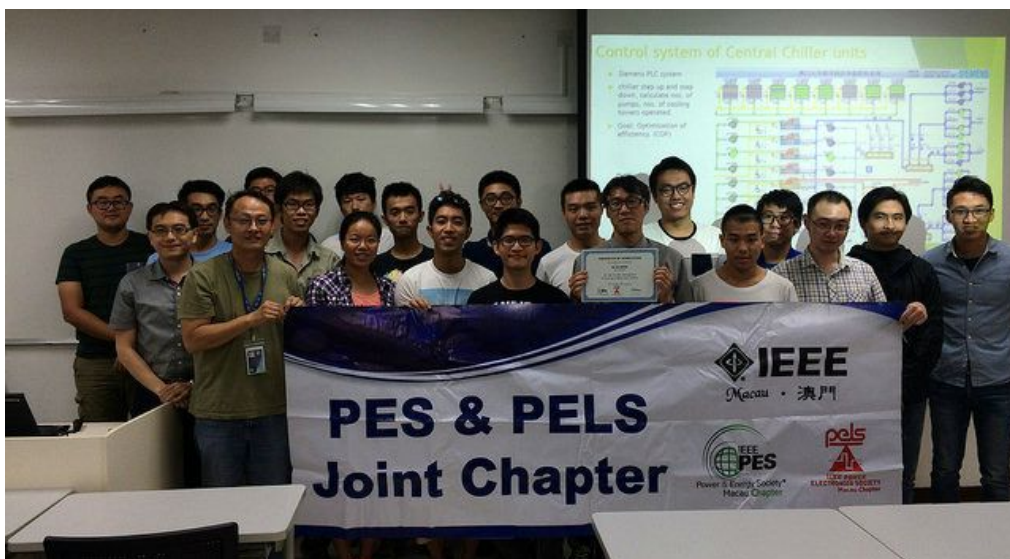
Mr. Leong obtained the Bsc and Msc of electromechanical engineering from the UM in 1999 and 2006 respectively. He joined engineering private company after graduated in 1999 and mainly work on the air conditioning and electrical power system. Two years later, he joined UM in 2002 as an assistant engineer. He has been working for E&M facilities for more than 15 years. He now works in Facility Operations and Maintenance Section as a Functional Head of E&M facilities and his main responsibility is to oversee, plan and manage the E&M facilities in UM. Mr. Leong has widely experience in design, operation and maintenance of building facilities. He has also joined the new campus construction project since the design stage and is familiar with the design of various E&M facilities using in this new campus.



Dr. Man-Chung Wong presents souvenir to Mr. Ka-lp Leong



Mr. Ka-lp Leong shares his experience to students and young engineers



Group photo

Technical Seminar #2

Date: 23 October 2015 (Friday)

Time: 16:30pm – 17:30pm

Venue: E11-1012, University of Macau, Macao, China

Name of Speaker: Prof. Shu-Hung Henry CHUNG, Department of Electronic Engineering, City University of Hong Kong, Hong Kong

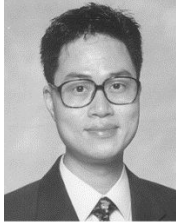
Topic: From Energy Generation and Conversion to System Prognostics in Microgrid

Abstract: Microgrid has been a popular topic in various areas, including power system engineering, power electronics, energy storage system, and control engineering. Major research activities have been emphasized on energy conversion, utilization, and storage. It is foreseeable that the next research emphasis will be placed on smart system diagnostics. The speaker will share with audience the subject

of applying some evolutionary computational techniques for various converter designs and prognostics of battery storage system. He will use some practical examples to illustrate how the techniques can be implemented on an embedded system.

Speaker Biography:

Henry Shu-hung Chung received his B.Eng. degree in 1991 and PhD degree in 1994 in electrical engineering, both from The Hong Kong Polytechnic University. Since 1995 he has been with the City University of Hong Kong. He is currently professor of the Department of Electronic Engineering, and Director of the Centre for Smart Energy Conversion and Utilization Research. He has edited one book, and authored eight research book chapters, and over 320 technical papers including 160 refereed journal papers in his research areas, and holds 34 patents. He is currently Editor-in-chief of the IEEE Power Electronics Letters, and Associate Editor of the IEEE Transactions on Power Electronics, and IEEE Journal of Emerging and Selected Topics in Power Electronics.



Dr. Man-Chung Wong presents souvenir to Prof. Shu-Hung Henry CHUNG



Prof. Shu-Hung Henry CHUNG presents his topic



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Technical Seminar #3

Date: 04 December 2015 (Friday)

Time: 16:30pm – 17:30pm

Venue: E11-G015, University of Macau, Macao, China

Name of Speaker: Prof. Fan Shaosheng, Department of Electrical & Information Engineering, Changsha University of Science & Technology, China

Topic: Research & Application on Key Technology of Operating Robot in Power System

Abstract: The operating robot is widely used in power system such as the unattended substation, live operating in high-voltage transmission line, and etc. This seminar will discuss about some key technology used in the operating robot of the power system. The machine vision detection method is used in auto navigation while the operating robot following the line printed on the road. And the cross line indicate that the monitoring point has been reached, then the robot will stop and take the picture of the equipment installed in the unattended substation. Another application is detecting the deformation of the boiler in the power plant, a mark is installed on the frame of the boiler which is monitored by the fixed camera, and the displacement of the mark which reflect the deformation of the boiler can be detected by the machine vision. Another technology is about the visual servo system, which is used in controlling of the robot arm to position and seize the bolt of the insulator in the transmission line. The robot should to position the bolt from the camera accurately and control the arm steadily to perform a serious of elaborated actions, and the torque controlling will be also considered carefully. The third aspect is about the power supply of the operating robot. A wireless power transmission technology is used in the robot working on the ground. While some new energy power supply system is equipped on the tower of the transmission line and supply the living operating robot through the wireless power transmission to isolated itself from the high voltage network.

Speaker Biography:



Fan Shaosheng, born in June 1966. Received his BS degree from Southwest Jiaotong University in 1987, majored in electrical engineering, MS and Ph.D. degree from Hunan University in 1995 and 2005 respectively, majored in control engineering, from 1987 to 1993, he was an electrical engineer at CSR Zhuzhou Electric Locomotive CO.,LTD , from 2010 to 2011, He was a visiting professor at University of Liverpool, UK. He is currently a professor, and the associated dean of the college of electrical and information engineering, Changsha University of Science and Technology, and the director of the Institute of automation of

Changsha University of Science and Technology.

Prof. Fan has been engaged in teaching and scientific research work in the field of automation for a long time. His main research interest includes operating robot in power system, machine vision, power Electronics and drives, he has successfully developed three kinds of operating robot applied in power system. The products of condenser dirt measuring instrument, condenser cleaning robot, power patrol robot has been widely used in power, petrochemical companies. His research achievements include of the First Class Prizes of Chinese Ministry of Education Scientific and Technological Progress Award in 2009, the first prize for scientific and technological progress in Hunan Province, 2 projects financial assisted by the National Natural Science Fund, 2 invention patents, 2 utility model patents, and published more than 40 papers in the domestic and foreign academic journals, with 2 SCI indexed and 15 EI indexed.



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Dr. Man-Chung Wong presents souvenir to Prof. Shao Sheng Fan



Prof. Shao Sheng Fan presents his topic

