

Organizers:



Technical Seminar on HVAC Research Highlights from the Western Cooling Efficiency Center at the University of California Davis

Date : July 10th, 2013 (Wednesday)
Time : 19:00 – 20:30
Venue : Room EF 312, The Hong Kong Polytechnic University

Abstract:

This presentation will give an overview of the research program, and highlight some recent research findings, from the Western Cooling Efficiency Center at UC Davis. Topics to be covered will include: initiatives to significantly improve the performance of new and existing RTUs (Roof Top Units) in dry climates, the use of aerosolized sealant particles to seal building envelopes, the use of encapsulated phase change material (PCM) beads to improve the carrying capacity of hydronic distribution systems, and recent findings related to water chemistry, bleed rates and scaling of evaporative cooling systems. The Western Cooling Challenge has inspired manufacturers to produce RTUs that reduce energy consumption and peak electricity demand by 40%, and the use of aerosols to seal building envelopes is a new concept that builds upon a similar process developed for sealing duct leaks, and has recently been demonstrated in several single-family residences. Our research suggests that the addition of PCMs to hydronic systems should decrease pumping power by 60% without impacting thermal performance. Finally, side-by-side testing of different water management strategies indicates that the two key dissolved solids in hard water, calcium and magnesium, behave very differently with respect to water bleed. Our results indicate that scale production can often be reduced while also reducing water consumption.

Honorable Speaker:



Professor Mark P. Modera

Associate Director, Energy Efficiency Center
Director, Western Cooling Efficiency Center (WCEC)
Professor, Civil and Environmental, Mechanical and Aeronautical Engineering
Sempra Chair in Energy Efficiency
University of California, Davis

Mark P. Modera is a Professor in Civil and Environmental Engineering, as well as Mechanical and Aerospace Engineering, and holds the Sempra Energy Chair in Energy Efficiency, all at UC Davis. Professor Modera is also the Director of the UC Davis Western Cooling Efficiency Center (WCEC), and a Fellow of the American Society of Heating Refrigerating and Air-conditioning Engineers. Dr. Modera joined the WCEC from Carrier Corp., and from Lawrence Berkeley National Laboratory (LBNL). At LBNL, Dr. Modera was a Principal Investigator on many research projects, and developed a new research program focused on thermal energy distribution in buildings. While at LBNL, Mark developed an aerosol-based duct sealing process, and he subsequently established AeroSeal, Inc. to commercialize the technology. AeroSeal's technical success and market promise became recognized by Carrier, who bought the business in 2001 and retained Mark to help manage it. The WCEC currently consists of more than 20 people working to help facilitate the implementation of efficient HVAC technologies through manufacturer/utility/customer partnerships, as well to develop and test new energy-efficient and peak-demand-sensitive HVAC technologies.

Organizers:



Instruction Media: English

Fee: Free of charge for members of Organizers
Free of charge for full time students or staff of The Hong Kong Polytechnic University

Remark: 1½ hour CPD certificate will be provided.

Application:

This is a joint activity organised by ASHRAE-HKC, HKIE-BSD and CIBSE HK Branch. Registration is opened to all members of the organising institutions. Please complete and return the application form by e-mail on or before 30th June 2013. Number of participants is limited to 60. Places will be allocated on a first-come-first-served basis and will be distributed evenly among the three institutions and HKPU as far as possible. Successful applicants will be informed individually by e-mail on or before 5th July, 2013.

Application Form:
Technical Seminar on HVAC Research Highlights from the Western Cooling Efficiency Center at the University of California Davis

Name (Dr./Ir/Mr./Mrs./Ms.)* : (Surname) _____ (Given Name) _____

Membership* : Organization: _____ Membership No.: _____

Company* : _____

Position : _____

Email Address* : _____

Contact Numbers : (Mobile)*: _____ (Office): _____

* Information must be filled.

Enquires: For enquiry, please contact Mr. Cecil Man at 95033649 (ASHRAE – HKC), Ir. KT Cheuk at 92092155 (HKIE-BSD) or Ir. Stanley CHOW at 91339259 (CIBSE HK Branch). Email enquiries can be sent to cecil@hensen.com.hk.

Registration: Please send the filled application form before 30th June 2013. The applicant may email the above information to cecil@hensen.com.hk for place reservation. Successful applicants will be notified by email on or before 5th July 2013.