Seminar on Recent Research of Novel Compression Concepts for Heat Pumping, A/C, and Refrigeration Applications

Date : March 23rd, 2017 (Thursday)

Time: 7:00pm to 8:30pm (registration start at 6:45pm)

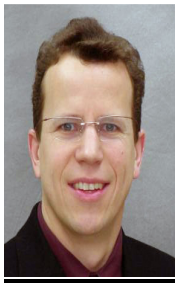
Venue: FJ303, The Hong Kong Polytechnic University, Hung Hom

Recent Research of Novel Compression Concepts for Heat Pumping, A/C, and Refrigeration Applications

Abstract:

The phase-out of CFC and HCFC refrigerants, combined with advances in compressor technology such as reduced noise and vibration and mechanical capacity control, has motivated the development of novel compression concepts for the refrigeration industry. This seminar provides an overview of several new developments for refrigeration, air-conditioning and heat pumping applications, including two novel compressors called the bowtie compressor and z-compressor. The bowtie compressor offers an integrated method of capacity modulation for use in domestic refrigerators/freezers. It modulates the cooling capacity by changing the piston stroke without changes of the clearance volume for better thermodynamic efficiency. The compressor is called bowtie compressor due to its two sector-shaped, opposing compression chambers forming a bowtie. The z-compressor is a dual-chamber hermetic rotary compressor with opposing upper and lower compression chambers separated by z-shaped blade. The compressor offers significantly lower noise and vibration levels than a conventional rolling piston compressor. In addition to presenting these new compressor types, research on flooded compression, miniature-scale compression, and compression processes with multi-port refrigerant injection will also be presented.

Honorable Speaker:



Eckhard A. Groll, Dr. Eng.
Reilly Professor of Mechanical Engineering, Director of the Office of Professional Practice
Purdue University

Dr. Eckhard A. Groll is the Reilly Professor of Mechanical Engineering and also serves as the Director of the Office of Professional Practice at Purdue University. He joined Purdue University as an Assistant Professor in 1994 and was promoted to Associate Professor in 2000, to Full Professor in 2005, and to the Reilly Professorship in 2013. He received his Diploma in Mechanical Engineering from the University of the Ruhr in Bochum, Germany, in 1989 and a Doctorate in Mechanical Engineering from the University of Hannover, Germany, in 1994.

Professor Groll teaches Thermodynamics and his research focuses on the fundamental thermal sciences as applied to advanced thermal systems, components, and their working fluids. He has advised over hundreds of students and project with approximately $10.3 million in research and educational grants. Dr. Groll has authored or co-authored two hundreds archival journal articles, conference papers and conference proceedings. He has given almost hundred invited lectures / seminars / keynote lectures and serves as the Regional Editor for the Americas for the International Journal of Refrigeration and is a Fellow of the American Society of Heating, Refrigerating, and Air Conditioning Engineers

Professor Groll has been recognized for his academic leadership in higher education. He is a 2010-2011 Fellow of the American Council on Education (ACE) and 2009-2010 Fellow of the Academic Leadership Program of the Committee on Institutional Collaboration (CIC-ALP). He has received numerous awards for his research and teaching excellence including the 2010 E. K. Campbell Award from ASHRAE, his induction into the Book of Great Teachers at Purdue University in 2008, and the 2007 Purdue University Faculty Scholar Award.

Instruction Media: English

Fee: Free of charge for ALL and members of ASHRAE will be in first priority. (1.5 hour CPD certificate will be provided.)

Application: Registration is opened to all interested persons on a first-come-first-served basis, but priority will be given to members of ASHRAE. Number of participants is limited to 100 and prior registration is required. Please complete and return the Registration Form via "**Online registration**" before 19 Mar 2017 (Sun). The deadline of application is on 19 Mar 2017 (Sun). Successful applicants will be informed individually by e-mail on or before 21 Mar 2017 (Tue), which has to be presented at the registry of the venue entrance for verification. If the applicants have not received the confirmation e-mail on or before 21 Mar 2017 (Tue), their applications will be regarded as not successful.

For enquiry, please contact Mr. Peter Lam at 92196323 (ASHRAE – HKC). Email enquiries can be sent to < Event_23_Mar_2017@yahoo.com >.