

Organizers:



Supporting University:



## **FULL DAY JOINT SEMINAR ON NEW GENERATION REFRIGERANTS, ITS APPLICATION & RISK MANAGEMENT**

**Date:** 4 December 2017 (Monday)  
**Time:** 9:30am to 17:00pm (registration start at 9:15am)  
(6-hour CPD certificate will be provided)  
**Venue:** N002, The Hong Kong Polytechnic University, Hung Hom

### **Rundown:**

09:30 - 10:45: **Next generation – HFO or natural refrigerants? – by Dr. Philip Yu**  
(Session 1)  
10:45 - 11:00: Break  
11:00 - 12:30: **Ammonia Refrigeration Systems – by Prof. Douglas Reindl**  
(Session 2)  
12:30 - 14:00: Break  
14:15 - 15:30: **Update of Refrigerant Trend in Split Type Unit – by Mr. Mitsuru Matsui**  
(Session 3)  
15:30 - 15:45: Break  
15:45 - 17:00: **Refrigerant Handling & Risk Management – by Prof. Douglas Reindl**  
(Session 4)

### **Program Highlight:**

For protecting our ozone layer & climate, most of common refrigerants with high ozone depletion potential and global warming potential have been or are being phased out. Government, Developers, Consultants, and Contractors are loving to see new generation refrigerants coming to the market asap.

In this seminar, we are honorable to invite 3 experts to discuss various new refrigerants that may be used in industrial, commercial, and residential building. Participants can know more about the history & evolution, and the comparison of existing options with some new options including efficiency, flammability, changes to equipment, components and working procedures.

Recent incidents and accidents along with application trends will provide the back drop to discuss the refrigerant handling & risk management. Relative standards, regulations and legislations will be also discussed.

### **Session 1 - Next generation – HFO or natural refrigerants?**

The HVAC industry has started transitioning to the next generation refrigerants along with the enforcement of the latest global regulations to reduce the hydrofluorocarbons (HFCs) as part of the global effort to lower the global warming potential (GWP) or protect the climate.

Many common refrigerants with high GWP such as R404A, R410A and R134a started to see their successors, of which some are existing options but with renewed interest (e.g. hydrocarbons) while mostly are olefin-based (HFO) new refrigerants or blends. Obviously the lower the GWP the more sustainable is the next-gen refrigerants but many become flammable. It is challenging to both equipment R&D for safe use and applications safety. This presentation will review the refrigerant selection in considerations of environmental impact and safety.

Organizers:



Supporting University:



## Honorable Speaker:



**Dr. Philip Yu**  
*PhD RPE CEng LEEP-AP*  
*Director, Trane Pacific*

Ir Dr Philip Yu is environmental & applications engineering director of TRANE, co-leader for Trane next-gen centrifugal chiller new product development project. Philip also devoted a lot of effort in green building movement together with Rob Watson (father of LEED) in early 2000's and well recognized by his expert member to China GBC since founded in 2008. He is also well known as an active member of ASHRAE, serving as the President of HK Chapter, Vice

President of Regional XIII, Chairman of Asia Pacific Conference and recently serving on "Climate Change Position Document Committee" for ASHRAE Headquarters.

## Session 2 - An Introduction to Ammonia Refrigeration Systems

[GBCI Approved | 1 CE Hour | 0920002609 AIA Approved|1LU|REINDL01]

Industrial refrigeration systems have used anhydrous ammonia for more than a sesquicentennial. Although ammonia has a long history of use in the industrial sector, the interest in ammonia as a potential refrigerant for non-industrial applications has grown recently. This presentation will provide an overview of the ammonia refrigeration systems that have been the mainstay in the industrial sector and emphasize unique characteristics that differentiate ammonia systems from traditional halocarbon refrigeration systems.

## Honorable Speaker:



**Douglas T. Reindl,**  
*Ph.D., P.E., ASHRAE Fellow Member & Distinguished Lecturer*  
*Professor, University of Wisconsin-Madison*

Douglas Reindl is a professor in the Departments of Engineering Professional Development and Mechanical Engineering at the University of Wisconsin-Madison. In addition, he is the founding director of the Industrial Refrigeration Consortium (IRC) at the UW. He received his B.S. in Mechanical Engineering Technology from the Milwaukee School of Engineering and his M.S. and Ph.D.

degrees from the University of Wisconsin-Madison. He is a registered professional engineer in the State of Wisconsin.

As faculty member at the University of Wisconsin since 1996, Professor Reindl has taught at all levels: undergraduate, graduate, and continuing professional development. Professor Reindl has developed an internationally-recognized series of professional development courses focused on industrial refrigeration systems with an emphasis on the safe use of ammonia as a refrigerant. Through the IRC, Professor Reindl works with some of the world's leading food companies to improve the safety, efficiency, reliability and productivity of industrial refrigeration systems and technologies.

In addition to be an ASHRAE Fellow, Professor Reindl is also a member of the International Institute of Ammonia Refrigeration. He is a past recipient of ASHRAE's Distinguished Service Award and the first recipient of ASHRAE's George C. Briley Award for the best refrigeration article in the *ASHRAE Journal*. He is a past chair and member of ASHRAE's Standard 15 committee – Safety Standard for Refrigeration Systems.

Professor Reindl has published 6 books and nearly 100 technical papers on topics including: industrial refrigeration, building mechanical systems, energy systems, indoor air quality, and solar energy.

Organizers:



Supporting University:



### Session 3 – Update of Refrigerant Trend in Split Type Unit

- 1) Available Choices for Next Generation Refrigerant's for stationary A/C
- 2) Risk Assessment of Possible Refrigerants
- 3) Standard for refrigerants
- 4) Market Penetration of R32 A/C

#### Honorable Speaker:



### Mr. Mitsuru Matsui

*General Manager  
Daikin Group*

Mr. Mitsuru Matsui has been in long years of service in Daikin Group and is now in the position of General Manager in Asia-Oceania Marketing in Daikin Group. His current role is to work with government officials, university professors and implementation agencies for environmental issue in the region for recent trend of technology. He has delivered speeches on Next Generation Refrigerant in ASHRAE Taiwan Chapter in 2016 and is also speakers in various organizations in the region.

### Session 4 - Refrigerant Handling & Risk Management

This presentation will discuss aspects of refrigerant safety design, construction, installation, and operation. Common misapplications of the standard will be presented and discussed. Recent incidents and accidents along with application trends will provide the back drop to discuss systems and practices needed to maintain safe installations.

**Instruction Media:** English

**Fee:** HK\$800 (ACRA & ASHRAE-HKC & CGBC\* members)  
HK\$1,000 (Standard)

**Application:**

1. For reservation, please complete the “[Online Registration Form](#)” or at the following “<https://goo.gl/VWQhyY>”
2. After online registration, please complete and return the application form and a crossed cheque payable to “[ASHRAE Hong Kong Chapter](#)” to [the P.O. Box 35612, King's Road Post Office, North Point, Hong Kong](#)” before 27 November 2017 (Monday), attention to [Mr. Joe Chow](#)
3. Registration is opened to ALL and Members of ACRA & ASHRAE-HKC & CGBC will be given priority. Number of participants is limited to 160. Places will be allocated on a first-come-first-served basis. Successful applicants will be informed individually by e-mail on or before 1 December 2017 (Friday). If typhoon signal no. 8 or black rainstorm signal is in force and still hoisted after 5:00 pm on that date, the talk would be cancelled without further arrangement or notification.
4. Receipt in electronic form will be issued to you upon receipt of payment.

Organizers:



Supporting University:



**Application Form**

**Full day joint seminar on new generation refrigerants,  
its application & risk management**

Name (Dr./Ir/Mr./Mrs./Ms.) : (Surname) \_\_\_\_\_ (Given Name) \_\_\_\_\_

ACRA/ASHRAE/CGBC\* Membership No: \_\_\_\_\_

Company: \_\_\_\_\_

Contact Tel. No.: (Mobile) \_\_\_\_\_ (Office) \_\_\_\_\_

E-mail Address: \_\_\_\_\_

Enquiry: Mr. Albert Lo at 9468 4707(ACRA)

Mr. Joe Chow at 6593 9494 (ASHRAE – HKC)

Mr. Ken Miao at 2994 0495 (CGBC – HK)

Email enquiries can be sent to <cttc2018@gmail.com>.

Registration For reservation, please complete the “[Online Registration Form](#)” or at the following “<https://goo.gl/VWQhyY>”

After Online Registration, please complete and return this application form with a crossed cheque payable to “ASHRAE Hong Kong Chapter” to the P.O. Box 35612, King’s Road Post Office, North Point, Hong Kong before 27 November 2017 (Monday) and attention to Mr. Joe Chow

Notes:

\*CGBC members include GBL Managers