



**ASHRAE** 美國供暖製冷及空調工程師學會  
**AMERICAN SOCIETY OF HEATING, REFRIGERATING AND  
 AIR-CONDITIONING ENGINEERS, INC. - Hong Kong Chapter**

P.O. Box 35612, King's Road Post Office, North Point, Hong Kong

<http://www.ashrae.org.hk>

**Technical Seminar on  
 Prediction method for flow-generated noise  
 from in-duct elements in ventilation system**

**Date:**

15th May 2009

**Time / Duration:**

7:15pm for 7:30pm - 8:30pm

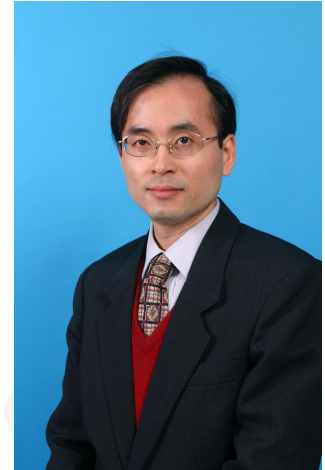
**Venue:**

Room Y303, The Hong Kong Polytechnic University, Hung Hom, Kowloon, Hong Kong.

**Honourable Speaker:**

**Dr. Cheuk Ming Mak, BEng PhD CEng RPE MCIBS  
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Dr. Mak is the Associate Professor in the Department of Building Services Engineering, the Hong Kong Polytechnic University. He teaches various subjects at postgraduate, undergraduate and sub-degree levels and undertakes research in the fields of building services engineering. He is the programme leader of the full-time self-financed bachelor degree programme in Building Services Engineering. His main research interests are the fields of noise and vibration control in building services and the applications of CFD to the field of building services engineering. He is the Immediate Past Chairman of the Hong Kong Institute of Acoustics and the Building Services Discipline Advisory Panel Member of the Hong Kong Institution of Engineers. He is also the PolyU Student Branch Advisor of ASHRAE-HK Chapter.



**Program Highlight:**

Flow-generated noise is produced by in-duct elements such as dampers, sensors, bends, transition pieces, duct corners, branch points, or even splitter attenuators in a ventilation system. At long distances from the fans in an air duct, flow noise produced by in-duct elements can be very serious. The current design guides that are usually adopted, such as the ASHRAE handbook and the CIBSE guide, provide design methods for the prediction of flow noise only from a single, isolated element in an air ductwork system.

Prediction of flow noise produced by multiple spoilers requires the values of the ratio of the mean drag forces, the phase relationship between the fluctuating drag forces, and the coherence function of the noise sources. The latter is empirically derived from the measured results of experiments, where the predicted results agree well with the experimental results within 3 dB at most frequencies except for very high frequencies. The derived method provides the basis of a generalized predictive technique. The early part of the session will discuss the problems. The later part will introduce the methods and discuss the accuracy.

**Free of charge**

Open to ASHRAE members, HVAC Engineers or other professions interested in this topic etc. Please complete and return the below application form by e-mail or by fax before 12 May 2009. Number of participants is limited to 80. Quota will be allocated on first-come-first-served basis. Successful applicants will be informed individually by e-mail. Applicants who do not receive a reply before 14 May 2009 may assume their application is unsuccessful.

**Fee:**

**Application:**

**Application Form - Technical Seminar on Prediction method for flow-generated noise from in-duct elements in ventilation system**

Name (Dr/Mr/Ms) : \_\_\_\_\_  
 Membership Class : \_\_\_\_\_ No.: \_\_\_\_\_ (ASHRAE)  
 Company Name : \_\_\_\_\_  
 E-mail Address : **(Must be provided)** \_\_\_\_\_

**For any inquiries, please contact: Mr. Kenny Lee (3428 5140 / [kenny.lee@royalbest.com.hk](mailto:kenny.lee@royalbest.com.hk))**

***Please e-mail this form to: / [kenny.lee@royalbest.com.hk](mailto:kenny.lee@royalbest.com.hk) or fax to 2304 7066***