ASHRAE DL Seminar on
"Moving Closer to Net Zero Buildings with IAQ Procedure of ASHRAE Standard 62.1 and Filtration Technologies in Cleanrooms"

Date & Time: *23 May 2018 (Wednesday) (2:00pm – 5:15pm)*
Venue: *Singapore Polytechnic Graduates' Guild (SPGG), Ballroom, Level 2*

▶ Moving Closer to Net Zero Buildings with the IAQ Procedure of ASHRAE Standard 62.1-2016

Being able to achieve IAQ goals while reducing energy consumption is one of the more valuable aspects of using ASHRAE Standard 62.1-2016: "Ventilation for Acceptable Indoor Air Quality". By meeting the requirements of the IAQ Procedure, one is allowed to take credit for the application of validated air cleaning technologies and reduce the amount of ventilation air that has to be heated and/or cooled. Revisions to Standard 62.1 have caused some confusion in its use and the application of energy conservation measures. This presentation will discuss the status of the Indoor Air Quality Procedure, review the applicable provisions of the Standard, discuss IAQ models in use, and provide examples where the IAQ Procedure has been successfully employed as part of an energy conservation program. There will also be a discussion of current activities to make it easier to validate the IAQ Procedure and make it more useful to the engineering community when designing "net zero" energy buildings.

▶ Gas-Phase Air Filtration in Cleanroom Manufacturing Applications

Air handling systems in cleanroom are designed to provide and maintain environments sufficiently well-controlled as to minimize process defects, assure product quality, and to provide for worker safety and health. Typically, cleanrooms are designed to provide contaminant-free manufacturing environments by maximizing the control of airborne particulates - both viable and non-viable. However, there is another important type of airborne contaminant that is not controlled with traditional filtration technology. This is the non-particulate or molecular (chemical) contaminant. This session focuses on the problems associated with chemical contamination and application of gas-phase air filtration in cleanroom manufacturing applications such as pharmaceutical, biotechnology, life science, semiconductor, and microelectronics manufacturing.

Speaker Profile

Chris Muller
ASHRAE Distinguished Lecturer (DL)

Technical Director, Purafil, Inc.
Doraville, Georgia
The United States

Chris Muller is Technical Director for Purafil, Inc. with responsibilities for technical support services and various research and development functions. He also serves as their Global Mission Critical Technology Manager responsible for Purafil's data center business development program. Prior to joining Purafil, he worked in the chemical process and pharmaceutical manufacturing industries in plant management and quality assurance/quality control.

In the 30 years he has spent with Purafil, Chris has become a recognized authority on the subject of indoor/environmental air quality, the application and use of gas-phase air filtration, corrosion control and monitoring, and electronic equipment reliability. He has written and spoken extensively on these topics and counts over 175 articles and peer-reviewed papers, more than 100 seminars, and 8 handbooks to his credit. He is named as a Distinguished Lecturer and is a frequent speaker at ASHRAE Chapter and Regional meetings both domestically and abroad and has received ASHRAE's Distinguished Service Award. He is a voting member of ASHRAE's Standing Standard Project Committee 62.1 – Ventilation for Acceptable Indoor Air Quality and is a co-author of the Standard 62.1 User's Manual. He is a voting member of Technical Committees (TC) 2.3 – Gaseous Air Contaminants and Gas Contaminant Removal Equipment and TC 9.9 – Mission Critical Facilities, Technology Spaces and Electronic Equipment.

Registration Form:
– ASHRAE DL Seminar on
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Date: 23 May 2018 (Wednesday)
Time: 2.00pm – 5.15pm
(*Registration starts 1.30pm)*
Speaker: Chris Muller
ASHRAE Distinguished Lecturer

Fee for early registration by 30 April 2018:
S$5 for ASHRAE Singapore Chapter (ASC) members
Free for ASC Student Member (limited to 10)
S$30 for ASHRAE/IFMA/IES members
S$60 for non-members

Fee for registration after 30 April 2018
S$5 for ASC members
Free for ASC Student Member (limited to 10)
S$40 for ASHRAE/IFMA/IES members
S$70 for non-members
(1 Tea Break will be provided)

Venue:
Singapore Polytechnic Graduates' Guild
Ballroom, Level 2, 1010 Dover Road
Singapore 139658 (Singapore Poly Gate No. 4)

Register by email to elta.ascsecretariat@gmail.com before **17 May 2018**, with the required Registration Details below.

Please make the payment by issuing a cheque to ***ASHRAE Singapore Chapter,*** *c/o 159 Sin Ming Road, AMTECH Building, Lobby 2 #07-02, Singapore 575625*

Professional Engineers Board (PDU) Points: Pending
SCEM-PDU Points: Pending

For enquires on program and registration matters please contact:
Dr. Yuichi Takemasa [Email: y.takemasa@kajima.com.sg], ASHRAE Singapore Chapter CTTC Chair

Registration Details

Name of Participant	ASHRAE Membership No.:	ASC Reg No.:	PE Reg No.:

Organization: _____ Designation: _____

Mailing Address: _____

_____ Postal Code _____

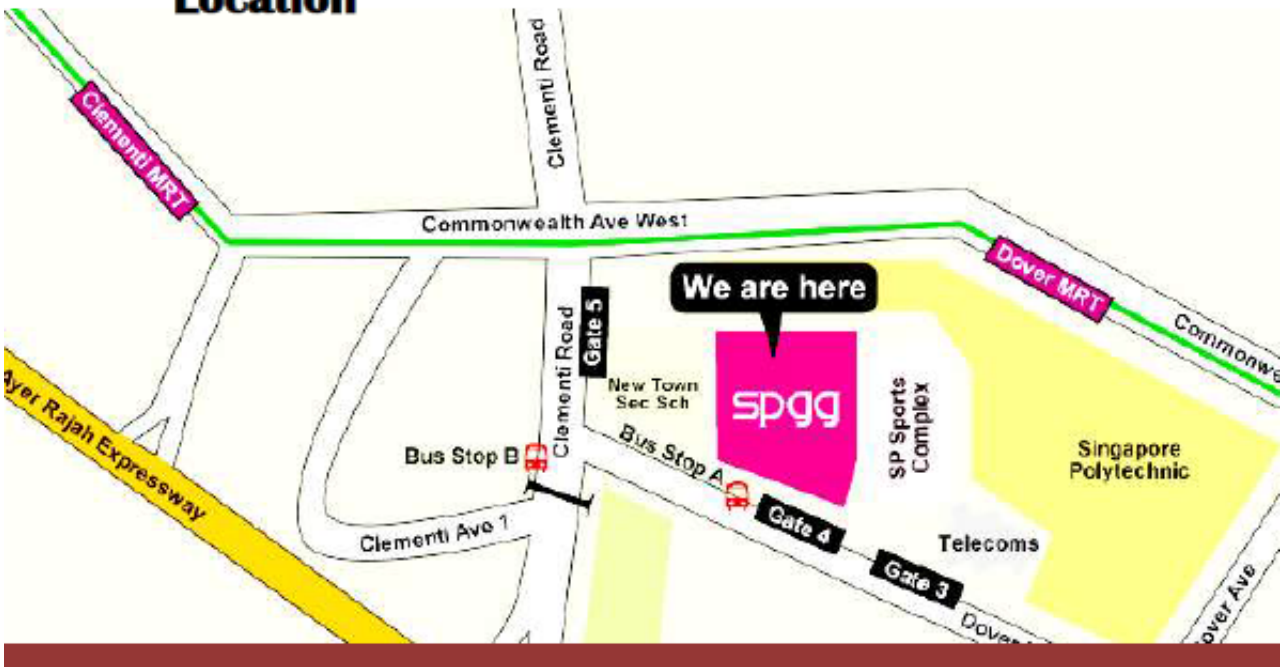
Telephone / Mobile No.: _____ Fax no.: _____

Email: _____

_____ .....

Signature **Date**

Location



- Located at 1010 Dover Road (SP Gate 4)
- **10 mins walk from Dover MRT**
- Bus Services to SPGG:
  - Bus Stop A: SBS 33 & SBS 196
  - Bus Stop B: SBS 96, 151, 183