



THE SINGAPORE ENGINEER presents

COOLING TOWER TECHNOLOGIES FOR SUSTAINABLE BUILDINGS AND HEALTHY LIVING SEMINAR

Supported by the IES M&E Engg. Technical Committee and Mechanical Engg. Technical Committee

8.30am – 6.00pm

1 Nov 2018 (Thu)

Holiday Inn Singapore Atrium

GUEST OF HONOUR

Prof Chou Siaw Kiang

Professor, Department of Mechanical Engineering, NUS & Past President, IES

**7 PDU (PE & SCEM),
7 STU (M&E) (Approved)
SDU (Pending approval)**

Singapore has designated 2018 as the Year of Climate Action. In recognition of this important initiative, the seminar will address the challenges and technological solutions related to the sustainable functioning of cooling towers in buildings. These technologies seek to minimise the use of water, energy, and chemicals (and by extension, toxicity levels), while still eliminating microbial contamination in order to ensure high indoor air quality.

Who should attend?

This seminar is intended for building owners, mechanical & electrical engineers, environmental sustainability design consultants, facility managers, equipment suppliers, water treatment operators, testing & certification professionals, R&D personnel, and academics in this field.

Seminar Fees:

IES Member; RE/RTO: **S\$270.00**; CIJC Member: **S\$320.00**; Non-Member: **S\$350.00** (all prices before GST)

***Group Booking** : Enjoy 10% group discount for 5 or more persons

Topics and Speakers

- **Operation of Cooling Towers – Meeting Regulatory and Sustainability Objectives** – Er. Tong Kok Kwang, Director/Principal Mechanical Engineer, NTU Engineering Services Division
- **Development of Cooling Towers and Infill Media** – Mr Nari Lulla, CEO, Lulla-Motion
- **Cooling Towers – Design Consideration & Optimisation** – Mr TS Lim, Manager, Truwater Cooling Towers
- **New Technologies for Water Treatment and Management of Cooling Towers** – Mr Sumalya Nag, Senior Sales Operations Director, SUEZ
- **Standards and Certification Scheme for Cooling Tower & Cooling Tower Water Treatment** – Ms Chew Wenyi, Manager, Singapore Green Building Council
- **Cooling Water Treatment Chemicals in Buildings** – Mr San Linn Nyunt, Technical Manager, Kurita Singapore
- **A Sustainable Approach to Cooling Tower Water Management** – Mr Ng Bee Keong, Managing Director, Innovative Polymers
- **Energy Efficient Cooling Tower Technology** – Assoc Prof Lee Poh Seng, Department of Mechanical Engineering, NUS

For more information, please contact Mr Desmond Teo (desmond@iesnet.org.sg) or Mr Queek Jiayu (jjayu@iesnet.org.sg)

REGISTER NOW

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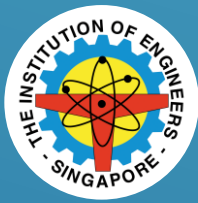


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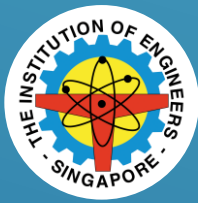
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Time	Programme	Speaker
0830	Registration	
0900	Welcome Speech	Dr Chandra Segaran, Chairman, Publications Committee, IES
0905	Opening Address	Prof Chou Siaw Kiang, Professor, Department of Mechanical Engineering, NUS
0915	Operation of Cooling Towers – Meeting Regulatory and Sustainability Objectives	Er. Tong Kok Kwang, Director / Principal Mechanical Engineer, NTU Engineering Services Division
1000	Development of Cooling Towers and Infill Media	Mr Nari Lulla, CEO, Lulla-Motion
1045	Tea Break	
1115	Cooling Towers – Design Consideration & Optimisation	Mr TS Lim, Manager, Truwater Cooling Towers
1200	New Technologies for Water Treatment and Management of Cooling Towers	Mr Sumalya Nag, Senior Sales Operations Director, SUEZ
1245	Q&A Session 1	
1310	Lunch	
1410	Standards and Certification Scheme for Cooling Tower & Cooling Tower Water Treatment	Ms Chew Wenyi, Manager, Singapore Green Building Council
1455	Cooling Water Treatment Chemicals in Buildings	Mr San Linn Nyunt, Technical Manager, Kurita Singapore
1540	A Sustainable Approach to Cooling Tower Water Management	Mr Ng Bee Keong, Managing Director, Innovative Polymers
1625	Tea Break	
1655	Energy Efficient Cooling Tower Technology	Assoc Prof Lee Poh Seng, Department of Mechanical Engineering, NUS
1740	Q&A Session 2	
1800	End of Seminar	



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Seminar Topic Synopses



Er. Tong Kok Kwang
Director / Principal
Mechanical Engineer, NTU
Engineering Services
Division

Operation of Cooling Towers – Meeting Regulatory and Sustainability Objectives

The speaker will introduce the basic working principle of a cooling tower and will proceed to address relevant topics such as the amount of energy and water it consumes, in percentage terms; the effect of cooling tower water condenser temperature and flowrate on other associated equipment in a central air-conditioning system and its monitoring and control practices; the health and safety aspects, with particular reference to the possible presence of Legionella bacteria; cycles of concentration for water conservation; and NTU's experience in the adoption of Green Mark criteria as the guiding principles for the pursuit of sustainability.



Mr Nari Lulla
CEO, Lulla-Motion

Development of Cooling Towers and Infill Media

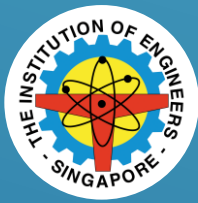
Cooling towers are important components of air-conditioning systems in buildings and infrastructural developments, especially in tropical environments. The presentation provides a brief history of, as well as a comparison between, the different types of cooling towers, particularly in terms of their functional efficiency and maintainability. In addition, the properties of materials, such as wood, steel and fibre-reinforced polymers (FRP), used in the construction of cooling towers, as well as the role and performance of materials used as the infill media, are explained.



Mr TS Lim
Manager, Truwater
Cooling Towers

Cooling Towers – Design Consideration & Optimisation

This presentation approaches the design of cooling towers from the perspective of energy efficiency, water consumption, space allocation, environmental / aesthetic impact and acoustics. These considerations have challenged the manufacturer and designer to think 'out of the box' and continue to innovate or optimise the cooling tower design, to suit various applications. The presentation will delve deeper, to explore what cooling towers can offer in terms of design, without compromising the basic necessity of heat removal in various industries.



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New Technologies for Water Treatment and Management of Cooling Towers

The presentation will provide a brief overview of the fundamentals of cooling water treatment from the system reliability stand-point, water balance in cooling towers, and the possible methods to conserve water, improve efficiency and re-use water. There have been significant improvements in recent times in managing lean water and mitigating the risk of corrosion. The presentation will cover a new chemistry and automation solution developed by SUEZ, to provide trouble-free water treatment, and remote monitoring of cooling towers using lean water.



Mr Sumalya Nag
Senior Sales Operations
Director, SUEZ

Standards and Certification Scheme for Cooling Tower & Cooling Tower Water Treatment

Green buildings reap tangible benefits: Saving building owners money through lower energy costs and by achieving an improved quality of life for building users through higher environmental standards. This has prompted a significant increase in the demand for green products and service. This presentation will share in greater depth on green procurement, Singapore Green Building Product (SGBP) criteria development and the certification process, an overview of the standards and certification considerations for Cooling Tower & Cooling Tower Water Treatment and the recognition of SGBP Certification.



Ms Chew Wenyi
Manager, Singapore Green
Building Council

Cooling Water Treatment Chemicals in Buildings

The evaporation of water from a cooling tower concentrates the dissolved salts and this may cause corrosion, scaling and microbiological fouling in cooling water systems. Cooling water treatment chemicals are used to inhibit these processes. Without appropriate control of chemicals and water quality, problems could result, such as a drop in cooling tower efficiency, energy losses in the chiller system, wasteful water consumption, unexpected equipment failure, an outbreak of Legionnaires' disease etc. The 'Keep Clean' treatment concept will be presented, with some case studies. The availability of additional equipment such as side stream filtration equipment and automatic blowdown control devices will also be discussed.



Mr San Linn Nyunt
Technical Manager,
Kurita Singapore



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Mr Ng Bee Keong
Managing Director,
Innovative Polymers

A Sustainable Approach to Cooling Tower Water Management

Whilst buying good chillers and cooling towers is important, it is the day-to-day maintenance of the system that ensures peak performance. Challenges in cooling water management include the formation of scale within, and corrosion of, cooling towers, piping and heat exchangers, as well as bacterial contamination of the water.

There is a new and better way to address the above problems, compared to the conventional approaches. This new electro-chemical method has been successfully deployed in several commercial and industrial environments, and offers the advantages of substantial water and energy savings, the elimination of the use of chemicals, optimal disinfection of the water, and reduced maintenance.



Assoc Prof Lee Poh Seng
Department of
Mechanical Engineering,
NUS

Energy-efficient Cooling Tower Technology

Thermal loads and environmental conditions affect the performance of cooling towers. Microbiological deposits, corrosion, water discharge, thermal efficiency, and reliability, are among the biggest challenges in cooling tower technology. To mitigate the effects of these challenges, the prediction and optimisation of various parameters in cooling towers are imperative, based on the application. Control and optimisation are necessary to minimise the power consumption. The intention is to develop energy-efficient cooling tower technologies for various locations in the world, considering the challenges related to design, space, mechanical equipment and cost.



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TERMS & CONDITIONS

Registration

Registration will be on a first-come-first-served basis and will only be confirmed upon receipt of full payment by the Committee unless otherwise invoiced to company.

All registration must be submitted with the completed on-line Registration Form.

Closing Date & Payment

The closing date for registering for the seminar shall be by Thursday, 25 October 2018. The payment via credit card, Paypal and invoice should be settled at least 3 business days before the event.

Confirmation of Registration

Confirmation of registration will be given 5 business days prior to the seminar via email. We reserve the right to allow only confirmed registrants to attend the event.

Refunds and Cancellations

No refunds will be made for withdrawals. Replacement will be allowed only if written notice is received by us at least 3 business days before the seminar. However, when an IES member is replaced by a non-member, the participant shall pay the difference in the relevant fees at least 3 business days before the seminar.

Course Cancellation/Postponement

Changes in venue, date, time and speakers for the Events can occur due to unforeseen circumstances. The Committee reserves the full right to cancel or postpone the Event under such circumstances without prior reasons. Every effort, however, will be made to inform the participants or contact person of any cancellation or postponement.

Fees will be refunded in FULL if the Event is cancelled by the organiser.

Enquiries

For more information, please email: desmond@iesnet.org.sg or jiayu@iesnet.org.sg