

PROGRAMME & PAPER SCHEDULE

Daily Programme Line-up

<u>Date</u>	<u>Time</u>	<u>Programme Description</u>	<u>Room</u>
18 July	9.00 am – 5.00 pm	Pre-event Workshop: Floating Structures by The Institution of Structural Engineers (IStructE) <i>[Separate workshop fee payable]</i>	335
19 July	9.00 am – 12.30 pm	WES-CUE Opening Ceremony & Plenary Session	324 - 326
	12.30 pm – 4.30pm	Test Drive by BlueSG <i>[Must have valid driving license]</i>	Booth B17
	2.00 pm – 5.00 pm	Track Break-out Sessions (Please refer to Paper Schedule)	324 - 330
	2.00 pm – 4.00 pm	Side-event: Low Carbon Technologies Forum by IChemE Energy Centre <i>[Free to participate as part of the conference]</i>	303
	5.00 pm – 6.00 pm	Special Session: Peer Review Workshop by Elsevier Science <i>[Free to participate as part of the conference]</i>	324
20 July	9.00 am – 5.00 pm	Track Break-out Sessions (Please refer to Paper Schedule)	324 - 330
	9.00 am – 12.30 pm	Side Event: WISER Forum by IES-Women in Science, Engineering and Research Group <i>[Free to participate as part of the conference]</i>	335
	10.00 am – 4.30pm	Test Drive by BlueSG <i>[Must have valid driving license]</i>	Booth B17
	1.30 pm – 3.30 pm	Special Session by CIBSE	324
	4.00 pm – 5.00 pm	Special Session on Nuclear Energy	329
	6.30 pm – 9.30 pm	WES-CUE Conference Dinner	404AXF
21 July	9.00 am – 12.30 pm	Track Break-out Sessions (Please refer to Paper Schedule)	324 - 329
	9.00 am – 6.00 pm	Side-Event: Distinguished Lecturers Seminar by ASHRAE <i>[separate event fee payable]</i>	335
	10.00 am – 4.30pm	Test Drive by BlueSG <i>[Must have valid driving license]</i>	Booth B17
	2.00 pm – 5.00 pm	Technical Site Visits (Please refer to Technical Site Visits)	offsite

Important Note:

- Morning tea-break will be served from 10.30 am – 11.30 am; lunch will be served from 12.00 pm – 2.00pm; afternoon tea-break will be served from 3.30pm – 4.30pm
- Information is correct at time of print. Please go to the Registration Counter for announcement or updates.
- All PE, SCEM, RE/RTO must sign in to receive their PDU/STU points everyday.



PROGRAMME & PAPER SCHEDULE

Paper Schedule – 19 July, 2.00 pm – 3.30 pm

Room 324	Room 325	Room 326	Room 327	Room 329	Room 330
Session Chairs: Looi Teik Soon / Yu Xiaoling	Session Chairs: Lee Poh Seng / Kozo Takase	Session Chairs: Norman Lee / Lalit Saini	Session Chairs: Dalson Chung / Ren Hongbo	Session Chairs: Li Hailong / Lee Kwee Hiong	Session Chairs: Geoffrey Hammond / Eugene Khoo
TRANSPORT	BUILDING	INDUSTRY	ENVIRONMENT	POWER & ENERGY	URBAN PLANNING
<p>Keynote Speaker: Fong Saik Hay, Chief Technology Officer, ST Engineering</p> <p>Papers for Energy Management: (123) A highway multi-lane partition model for the introduction of unmanned vehicles (256) Development of a multi-purpose infrastructure for sustainable mobility. A case study in a smart cities application (277) Autonomous Vehicles and Energy Impacts: A Scenario Analysis</p>	<p>Papers for Green Buildings: (103) Enhanced bamboo composite with protective coating for structural concrete application (122) Eco-friendly building: using ceramic waste and laterite as ingredients in mortar (167) Overcoming Solar PV Intermittency using Demand Response Management in Green Buildings (203) Framework for evaluating and optimizing algae façades using closed-loop simulation analysis integrated with BIM</p>	<p>Papers for Industrial Processes: (16) Numerical investigation on ash deposition on the surface of tube bundle (52) Enhancing Energy Efficiency of FMCG Sector Through Efficient Use of Steam (56) Energy Efficiency in Industrial Processes (97) Innovative Organic Rankine arrangements for Water Savings in Waste Heat Recovery Applications</p>	<p>Keynote Speaker: Joseph Boey, Project Director, IWMF, NEA</p> <p>Papers for Waste to Energy: (7) Recycling Solid Waste and Bioenergy Generation in MFC Dual- Chamber Model (29) Bio Gas plant green energy from poultry wastes in Singapore (67) Biomethanation of different household wastes using laboratory scale anaerobic digester</p>	<p>Keynote Speaker: Frank Phuan, Managing Director, Sunseap</p> <p>Papers for Energy Storage: (6) Effects of Void Spaces in a Phase Change Material Based Thermal Energy Storage System (117) Investigation of storage materials for packed bed cold storages in liquid air energy storage (LAES) systems</p>	<p>Keynote Speaker: Hee Li Min, Director, Centre for Liveable Cities</p> <p>Papers for Smart and Sustainable Urban Design: (9) Development of Solar City: Experience and Lessons learned from Turpan Demonstration District, China (23) Smart & Safe Energy Society - Toward durable peace and evolution (107) Harvesting 3D Multiphysics Modelling Techniques for Smart and Sustainable University Campus</p>

PROGRAMME & PAPER SCHEDULE

Paper Schedule – 19 July, 4.00 pm – 5.00 pm

Room 324	Room 325	Room 326	Room 327	Room 329	Room 330
Session Chairs: Catherine Ross / Eugene Khoo	Session Chairs: Kozo Takase / Lee Poh Seng	Session Chairs: Lee Kwee Hiong/ Li Hailong	Session Chairs: Ren Hongbo / Dalson Chung	Session Chairs: Lee Jim Yang / Lalit Saini	Session Chairs: Geoffrey Hammond / Ho Kwong Meng
TRANSPORT	BUILDING	INDUSTRY	ENVIRONMENT	POWER & ENERGY	URBAN PLANNING
<p>Papers for E-Mobility:</p> <p>(11) Electric Vehicle Deployment in Singapore and Technical Considerations for Public Charging Infrastructure</p> <p>(76) The prospect of electric vehicles in the absence of policy support</p>	<p>Papers for Green Buildings:</p> <p>(262) Development of an Innovative Energy Modelling Framework for Design and Operation of Building Clusters in the Tropics</p> <p>(273) Practice of net Positive Energy House in the Suburb of Tokyo</p> <p>(281) Facilitating systemic changes towards green buildings: Developing a conceptual framework of socio-technical transitions</p>	<p>Papers for Industrial Processes:</p> <p>(58) - Corrosion monitoring of pipelines in critical locations using ultrasonic guided wave tomography</p> <p>(97) Experimental Observation of CO2 Dry-Ice Behavior in Evaporator/Sublimator in Ultra-Low Temperature Cascade Heat Pump System</p> <p>(129) Optimal configuration for propylene-propane separation using vapor recompression and self-heat recuperation</p>	<p>Papers for Waste to Energy:</p> <p>(75) Environmental performance assessment of the application of high temperature phase change materials in waste-to-energy plants</p> <p>(224) Waste to Energy Solution – The Sludge Treatment Facility in Tuen Mun, Hong Kong</p> <p>(240) Experimental study on the safety of R32 domestic air conditioner in the process of recovering the refrigerant</p> <p>Abstract for Waste to Energy:</p> <p>(31) Enhanced bioenergy production from wasted sludge in an extreme thermophilic single-stage anaerobic sludge digester</p>	<p>Papers for Energy Storage:</p> <p>(63) Lithium Iron Phosphate (LiFePO4) Battery Power System for Deepwater Emergency Operation</p> <p>(118) Improving liquefaction process of small scale Liquid Air Energy Storage through waste heat recovery and absorption chiller</p> <p>(223) The thermal conductivity of molten NaNO3, KNO3, and their mixtures.</p> <p>(239) Morphological Studies of Mixed Methane Tetrahydrofuran Hydrates in Saline Water for Energy Storage Application</p>	<p>Papers for Others:</p> <p>(113) To Construct Buildings onto Seabed Directly Without Land Reclamation</p> <p>(301) Study of the secondary energy products' prices and financial analysis of distributed energy station project</p> <p>Urban Planning (others) Abstract:</p> <p>(98) Truly Smart City? Gaps and challenges of Chinese smart cities- the case of Ningbo China</p> <p>(102) The practice of ecological sustainability in China: a study of three types of ecological development in Chongming Island</p>

PROGRAMME & PAPER SCHEDULE

Paper Schedule – 20 July, 9.00 am – 10.30 am

Room 324	Room 325	Room 326	Room 327	Room 329	Room 330
Session Chairs: Mervyn Sirisena / Catherine Ross	Session Chairs: Michael Leung / June Tay	Session Chairs: Hang Yu / Ong Eng Hong	Session Chairs: Song Jie / SK Chou	Session Chairs: Ngin Hoon Tong / Pushpendra Jain	Session Chair: Jin Liwen
TRANSPORT	BUILDING	INDUSTRY	ENVIRONMENT	POWER & ENERGY	POWER & ENERGY
<p>Keynote Speaker: Paul Stein, Chief Technology Officer, Rolls Royce</p> <p>Papers for Energy Management: (304) Recovering energy from train braking for traction and grid use (73) Progressing Towards DC Electrical Systems for Marine Vessels</p> <p>Papers for Others: (156) Optimal selection of charging stations for EV users</p>	<p>Keynote Speaker: Heah Soon Poh, Assistant Chief Executive, JTC Topic: Engineering Sustainable Infrastructure</p> <p>Papers for Energy Efficiency: (8) The status quo of operation of HVAC water-side systems in China: a perspective from BAS data (18) Effect of different renovation actions, their investment cost and future potential (24) Role of ICT in Creating Intelligent, Energy Efficient Buildings</p>	<p>Paper for Industrial Processes: (207) Low-grade waste heat driven hybrid systems for cooling and power (208) Monitoring compressed air systems energy performance in industrial production: lesson learned from an explorative study in large and energy-intensive industrial firms. (215) Dynamic study of orc evaporator operating under fluctuating thermal power from waste heat sources</p>	<p>Keynote Speaker: Suneet Manjavkar, Water Solutions Consultant-South Asia, Bentley Systems, India</p> <p>Papers for Waste to Energy: (274) Research on Production Decision and Sharing Responsibility Mechanism of Dual Responsibility Closed-loop Supply Chain</p> <p>Papers for Others: (14) A Study on Mechanical Properties and Leaching Behaviour of Municipal Solid Waste (MSW)</p>	<p>Keynote Speaker: Lester Chia, Senior Engineer, Energy Research Building and Research Institute, HDB</p> <p>Papers for Renewable Energy: (5) Low-cost solar power satellites for clean baseload power generation (15) Experimental and numerical study on the combustion of a 32 MW wood-chip grate boiler with internal flue gas recirculation technology (20) Innovative Microgrid Solution for Renewable Energy Integration within the REIDS Initiative</p>	<p>Abstracts: (109) Field Test Analysis of A Urban Sewage Source Heat Pump System Performance (121) Preparation and Performance of Composite Building Materials with Phase Change Material for Thermal Storage (194) Research on The Clean Energy Heating Systems in Rural Beijing (197) The Study on Thermal Comfort Simulation of Airflow in Air Conditioning, Heating and Natural Ventilation in Ancient Buildings (198) Technical Feasibility Analysis of Biomass Stove Heating System</p>

PROGRAMME & PAPER SCHEDULE

Paper Schedule – 20 July, 9.00 am – 10.30 am (continued)

Room 324	Room 325	Room 326	Room 327	Room 329	Room 330
Session Chairs: Mervyn Sirisena / Catherine Ross		Session Chairs: Hang Yu / Ong Eng Hong	Session Chairs: Song Jie / SK Chou		
TRANSPORT	BUILDING	INDUSTRY	ENVIRONMENT	POWER & ENERGY	POWER & ENERGY
(285) Analytical and Experimental Study of Micro Gas Turbine as Range Extender for Electric Vehicles in Asian Cities		Papers for Others: (10) Development of a multidisciplinary approach to compute sustainability index for manufacturing plants - Singapore perspective (40) Smart Aquaponics System for Urban Farming	(45) Super well point technology with advancements in soil improvements for land reclamations (46) Analysis of heavy metals in Incineration Bottom Ash in Singapore and potential impact of pre-sorting on ash quality		

PROGRAMME & PAPER SCHEDULE

Paper Schedule – 20 July, 11.00 am – 12.30 pm

Room 324	Room 325	Room 326	Room 327	Room 329	Room 330
Session Chairs: Gongsheng Huang / Chan Yun Ching	Session Chairs: June Tay / Michael Leung	Session Chairs: Ong Eng Hong / Hang Yu	Session Chairs: SK Chou / Song Jie	Session Chairs: Pushpendra Jain / Ngin Hoon Tong	Session Chair: Jin Liwen
BUILDING	BUILDING	INDUSTRY	ENVIRONMENT	POWER & ENERGY	POWER & ENERGY
<p>Keynote Speaker: Jeffery Neng, Asst. Managing Director, Building Environment Research & Innovation Institute</p> <p>Papers for Smart Homes: (114) Implementation of Smart LED Lighting and Efficient Data Management System for Buildings (137) Energy storage systems for refrigerated warehouses (166) Promoting Energy Efficiency of HVAC Operation in Large Office Spaces with a Wi-Fi Probe enabled</p>	<p>Papers for Energy Efficiency: (53) Probabilistic analysis of mist coolers for chiller systems in commercial buildings (110) Distributed Pumping Chilled Water Hydronic System for Air-conditioning Systems (134) Implementation of effective and low-cost building monitoring system(BMS) using raspberry PI (138) Integrating Composite Desiccant and Membrane Dehumidifier to Enhance Building Energy Efficiency</p>	<p>Papers for Others: (93) Optimization of a compact falling-droplet absorber for cooling power generation (104) Tracking Multilayer Energy Flows Embodied in China’s Interregional Trade: An Input-Output Network Analysis (185) Computational Fluid Dynamics for Industry Optimization (195) Design and Costing of a PVSA-Based Industrial Scale Propylene/Propane Separation Process</p>	<p>Papers for Others: (94) Modelling the clogging dynamism of dual-media pre-treatment rapid filters for seawater desalination (115) Deployment of green materials as alternative coarse media in dual-media rapid filters (120) Environmental and resource burdens associated with an urban community and its surrounding bioregion (180) Fabrication of conductive carbon nanomaterial from carbonaceous waste</p>	<p>Papers for Renewable Energy: (27) Modelling of ash deposition in biomass boilers: a review (34) Design and Development of an Automatic Solar Tracker (38) Study on offshore wind farm layout optimization based on decommissioning strategy (70) Implementation of a Fuzzy Controlled Buck-Boost Converter for Photovoltaic Systems</p>	<p>Abstracts: (214) Design method of radiant cooling area based on the relationship between human thermal comfort and thermal balance (228) Heat transfer performance of buried extremely long ground-coupled heat exchangers with concentric pipes (231) Experimental investigation on the charge-discharge performance of the commercial lithium-ion batteries</p>

PROGRAMME & PAPER SCHEDULE

Paper Schedule – 20 July, 11.00 am – 12.30 pm (continued)

Room 324	Room 325	Room 326	Room 327	Room 329	Room 330
Session Chairs: Gongsheng Huang / Chan Vun Ching	Session Chairs: June Tay / Michael Leung		Session Chairs: SK Chou / Song Jie		
BUILDING	BUILDING	INDUSTRY	ENVIRONMENT	POWER & ENERGY	POWER & ENERGY
Paper for Green Buildings: (300) Model Predictive Control Based Energy Optimization in Building Environment Using IoT Platform	(142) Thermodynamic and thermo-economic analysis of integrated organic Rankine cycle for waste heat recovery from vapor compression refrigeration cycle		(201) Municipal solid waste management in Indonesia – A study about selection of proper solid waste reduction method in D.I. Yogyakarta Province		

PROGRAMME & PAPER SCHEDULE

Paper Schedule – 20 July, 1.30 pm – 3.30 pm

Room 324	Room 325	Room 326	Room 327	Room 329	Room 330
Session Chairs: Loh Hsieh-Min / Yat H. Yau	Session Chairs: Clive Ford / Ang Choon Keat	Session Chairs: Lalit Saini / Seow Tiang Keng	Session Chairs: Adrian Law / Alfred Wong	Session Chairs: Victor Nian / Lee Kwee Hiong	Session Chairs: Subhrajit Guhathakurta / Looi Teik Soon
BUILDING	BUILDING	INDUSTRY	ENVIRONMENT	POWER & ENERGY	URBAN PLANNING
<p>CIBSE Keynote Speaker: Peter Bull, Principal, ARUP</p> <p>CIBSE Abstracts: (191) Building Performance Evaluations (192) Hemis-Designing for Zero Carbon in the Himalayas</p> <p>Papers for Energy Efficiency: (237) A data mining approach to discover critical events for event-driven optimization in building air conditioning systems (303) Technical Economy Feasibility Analysis of Biomass Stove Heating System</p>	<p>Papers for Energy Efficiency: (172) A prediction approach of energy station's output in community energy system based on the attenuation and delay of pipes (177) Thermal Analysis for Underground Data Centres in the Tropics (199) Getting Nature to Help in Energy Efficiency (221) Experimental Investigation on Moisture Transfer of Carbon Nanotube Membranes (230) Operation strategy optimization for building cooling heating and power system with thermal energy storage</p>	<p>Papers for Others: (25) Asset Performance Management for Power Grids (112) Dynamic exergetic and environmental assessments of the small-scale LNG cold utilized micro power generation systems. (168) Persistent and adaptive power system for solar powered sensors of Internet of Things (IoT) (232) Recovering Natural Gas from Gas Hydrates using Horizontal Wellbore (308) Three Phase Fully Controlled Converter with SAF controlled by optimized I.Cosφ control algorithm</p>	<p>Papers for Others: (241) Numerical Simulation of Soil Thermal Response Test with Thermal-dissipation Corrected Model (242) Estimation of the urban heat island using remotely sensed thermal infrared data (243) Calculation of turbulent stress through steady-state RANS and LES validation (245) Assessment and improvement of the accuracy of radiation heat transfer estimation in simplified urban canopy models</p>	<p>Keynote Speakers: Bernard Nee, Asst. Chief Executive, EMA</p> <p>Papers for Renewable Energy: (71) The marginal social footprint of permanent magnet production based on rare earth elements - a social life cycle assessment (SLCA) (72) Investigation on the mid-temperature solar thermochemical power generation system (77) Solar Energy Hybrid System for Seawater Distillation in the Coastal Regions</p>	<p>Keynote Speaker: Lam Wee Shann, Group Director (Technology & Industry Development) Land Transport Authority, Singapore</p> <p>Papers for Low Carbon Economy: (216) Impact of Industrial Structure Adjustment and Energy Consumption Structure Adjustment on Urban Carbon dioxide emission and Embodied Carbon Emission: Taking Beijing as a Case (287) Climate change, the built environment and triple helix innovation</p>

PROGRAMME & PAPER SCHEDULE

Paper Schedule – 20 July, 1.30 pm – 3.30 pm (continued)

Room 324	Room 325	Room 326	Room 327	Room 329	Room 330
Session Chairs: Loh Hsieh-Min / Yat H. Yau			Session Chairs: Adrian Law / Alfred Wong		Session Chairs: Subhrajit Guhathakurta / Looi Teik Soon
BUILDING	BUILDING	INDUSTRY	ENVIRONMENT	POWER & ENERGY	URBAN PLANNING
(306) Effect of fin location on the latent heat storage: a numerical study			(253) Raman Spectroscopic Studies on Hydrate-based Carbon Dioxide Separation from Fuel Gas in the Presence of THF Paper for District Cooling & Heating: (143) Effects of Building Mix on Energy Performances of the District Heating and Cooling System		Papers for Smart and Sustainable Urban Design: (293) Smart & Safe Energy Society - Toward durable peace and evolution - (305) From Numerical Model to Computational Intelligence: The Digital Transformation of Urban Energy System

PROGRAMME & PAPER SCHEDULE

Paper Schedule – 20 July, 4.00 pm – 5.00 pm

Room 324	Room 325	Room 326	Room 327	Room 329	Room 330
Session Chairs: Yat H. Yau / Loh Hsieh-Min	Session Chairs: Ang Choon Keat / Clive Ford	Session Chairs: Seow Tiang Keng / Lalit Saini	Session Chairs: Yan Jinyue / Alfred Wong	Session Chair: Victor Nian	Session Chair: Geoffrey Hammond
BUILDING	BUILDING	POWER & ENERGY	INDUSTRY	POWER & ENERGY	URBAN PLANNING
<p>Papers for Energy Efficiency:</p> <p>(238) Calibration of cooling loss-associated parameters using Bayesian inference</p> <p>(244) Inverse estimation of the urban heat island using district-scale building energy calibration</p> <p>(246) A coordinated VAV control with integration of heat transfer coefficients for improving energy efficiency and thermal comfort</p>	<p>Abstracts for Others:</p> <p>(146) Performance evaluation of air flow and thermal comfort in the room with wind-catcher using different CFD techniques under neutral atmospheric boundary layer</p> <p>Papers for Others:</p> <p>(43) A feasibility study of Building Information Modelling (BIM) for Green Mark New Non-Residential</p> <p>(61) A Meta Model Based Bayesian Approach for Building Energy Models Calibration</p> <p>(270) A Comprehensive Case Study of Climate Change Impacts on the Cooling Load in an Air-Conditioned</p>	<p>Papers & Abstract for Others:</p> <p>(310) Comparative Analysis of the Relationship between Oil Price and USD Exchange Rate Fluctuation before and after the Financial Crisis</p> <p>(233) Numerical modelling of methane hydrate dissociation within porous media by depressurization for energy recovery</p> <p>Papers for Energy Storage:</p> <p>(251) Experimental Analysis on Crucible Selection of Thermal Properties of Nitrate Salt</p> <p>(74) Non-Eutectic Phase Change Materials for Cold Thermal Energy Storage</p>	<p>Papers for Data Centres:</p> <p>(219) Free cooling technologies for data centers: energy saving mechanism and applications</p> <p>(248) Dynamic simulation of a multi-generation system for electric and cooling energy provision, employing a SOFC cogenerator and an adsorption chiller</p>	<p>Abstracts & Papers for Nuclear Energy:</p> <p>(21) Global developments in advanced reactor technologies and international cooperation</p> <p>(66) Factors Shaping the Outlook for Nuclear Energy</p> <p>(133) International Legal Framework for the Safe, Secure and Peaceful Uses of Nuclear Energy: Recent Developments</p> <p>(311) The Southeast Asian dynamics in nuclear energy</p>	<p>Papers for Smart and Sustainable Urban Design:</p> <p>(132) From Numerical Model to Computational Intelligence: The Digital Transformation of Urban Energy System</p> <p>(260) A Generalizable Method for Estimating Household Energy at a Neighborhood Scale in US Urban Regions</p> <p>(266) Energy efficient neighborhood design under residential zoning regulations in Shanghai</p> <p>(275) How Have Political Incentives for Local Officials Reduced the Environmental Pollution of Resource-depleted Cities?</p>

PROGRAMME & PAPER SCHEDULE

Paper Schedule – 21 July, 9.00 am – 10.30 am

Room 324	Room 325	Room 326	Room 327	Room 329
Session Chairs: Anders Avelin / Victor Nian	Session Chairs: Michael Leung / Li Hailong	Session Chairs: Ren Hongbo / Muhammad Aziz	Session Chairs: Yan Jinyue / Alfred Wong	Session Chair: Liu Qibin
POWER & ENERGY	BUILDING	POWER & ENERGY	ENVIRONMENT	POWER & ENERGY
<p>Papers for Renewable Energy:</p> <p>(154) CIGS photovoltaics for the urban tropics</p> <p>(169) Biodiesel production in a reactive distillation column catalyzed by heterogeneous potassium catalyst</p> <p>(174) Optimum Study on Primary Design of Geothermal Heat Pipe with CO2 Based Rankine Cycle</p> <p>(184) Cold gas micro propulsion development for satellite application</p> <p>(218) Decentralized algal energy system design at various urban densities and scales</p>	<p>Papers for Energy Efficiency:</p> <p>(247) The effect of urban density on energy consumption and solar gains: the study of Abu Dhabi's neighborhood</p> <p>(255) Energy saving potential of an air treatment system for improved building indoor air quality in Singapore</p> <p>(278) Mining gradual patterns in big building operational data for building energy efficiency enhancement</p> <p>(283) Optimal Carbon Reduction Strategies in the Building Sector with Emission Trading System (ETS)</p>	<p>Paper for Energy Storage:</p> <p>(99) Combined Nitrogen Production, Ammonia Synthesis, and Power Generation for Efficient Hydrogen Storage (Ammonia)</p> <p>Papers for Smart Grids:</p> <p>(26) Load and Renewable Energy Forecasting for a Microgrid using Persistence Technique</p> <p>(65) Smart Community Solution for Energy Management - A Review of Critical Parameters for Commercial or Residential Energy-Efficient Users to Participate in Demand-side Management of Singapore Electricity Market</p> <p>(116) Application of Hybrid Generator System in Smart Grid</p> <p>(178) Energy management for a smart campus</p>	<p>Keynote Speaker:</p> <p>Harry Seah, Chief Engineering and Technology Officer, PUB</p> <p>Papers for Others:</p> <p>(261) Formation Behaviors of CO2 Hydrate in Kaoline and Bentonite Clays with Partially Water Saturated</p> <p>(297) Use Eye Tracker to Design an Intelligent Patient Bed</p> <p>Papers for Climate Change Mitigation:</p> <p>(235) Systematic evaluation of semi clathrate-based pre-combustion CO2 capture in presence of tetra-n-butylammonium fluoride (TBAF): effect of TBAF concentration and kinetic additives</p>	<p>Papers for Renewable Energy:</p> <p>(86) Optimal Scheduling of Multi-Source Microgrid Considering Power to Gas Technology and Wind Power Uncertainty</p> <p>(141) Thermo-hydraulic modelling for Direct Steam generation</p> <p>(149) Siting assessment for Kinetic Energy Turbines: an emplacement study for sea and river applications</p> <p>(150) The rise of Renewable Energy implementation in South Africa</p> <p>(152) Solar Forecasting using ANN with Fuzzy Logic Pre-processing</p>

PROGRAMME & PAPER SCHEDULE

Paper Schedule – 21 July, 11.00 am – 12.30 pm

Room 324	Room 325	Room 326	Room 327	Room 329
	Session Chairs: Li Hailong / Michael Leung	Session Chairs: Muhammad Aziz / Ren Hongbo		Session Chair: Liu Qibin
POWER & ENERGY	BUILDING	POWER & ENERGY	ENVIRONMENT	POWER & ENERGY
	<p>Papers for Energy Efficiency:</p> <p>(295) Simulation analysis on summer conditions of ancient architecture of gate tower based on CFD</p> <p>(296) Preparation and Performance of Composite Building Materials with Phase Change Material for Thermal Storage</p> <p>(298) Field Test Analysis of a Urban Sewage Source Heat Pump System Performance</p> <p>(299) Research on the clean energy heating systems in rural Beijing</p>	<p>Papers for Smart Grids:</p> <p>(209) Planning tool for polygeneration design in micro-grids</p> <p>(259) Scheduling Capacity Evaluation of Aggregated Thermostatically Controlled Loads Based on Fuzzy Set Method</p> <p>(267) Design and Evaluation of a CCHP based Micro-grid for an Urban Area</p> <p>(286) Optimal Operation Control of Pumped Hydro Storage in the South African Electricity Market</p> <p>(291) Performance Evaluation of Peer-to-Peer Energy Sharing Models</p>		<p>Papers for Renewable Energy:</p> <p>(265) Data-Driven Short-Term Forecasting of Solar Irradiance Profile</p> <p>(276) Potential of wind energy and design configuration of wind farm on Puger beach at Jember Indonesia</p> <p>(288) Advanced solar photocatalytic asphalt for removal of vehicular NOx</p> <p>(292) Injection power cycle applied in OTEC power plants</p>

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TECHNICAL SITE VISITS, 21 JULY 2017

HDB Centre of Building Research

The Centre of Building Research (CBR) is HDB's master laboratory. Set up in 2009, it spearheads research and development (R&D) efforts in building and environmental sustainability, as well as nurtures new technologies for future generations of public housing. The CBR focuses its R&D initiatives in 5 areas – Energy, Urban Greenery, Living Environment, Waste & Water, and Building Technology. This is aligned with HDB's Roadmap to Better Living in HDB Towns to build 'Sustainable Towns'. Prototypes of new technologies are developed and test-bedded at the CBR before implementation in HDB estates. The CBR brings to fruition, HDB Building Research Institute's vision to be a leader in research, innovations and solutions in developing quality homes, and creating a pleasant, green living environment for its residents.

Duration/No. of Visitors for tour: 3 pm – 4.15 pm/40 pax only

Marina District Cooling

District cooling is a new urban utility which centralise the production of chilled water for air conditioning to developments within a district. DCS is, in fact, a "chilled water cloud".

Singapore District Cooling was incorporated as one of the utility services for the Singapore's new business district at Marina Bay. This is the world's largest underground DCS which provides air conditioning, 24/7, for 23 iconic buildings in the premium financial district, including Marina Bay Sands and Marina Bay Financial Centre.

The Marina Bay DCS achieves world-class reliability and maintain high supply quality as there was no chilled water supply interruption since the first day of supply in 2005. With economic of scale, the system significantly reduces unused equipment capacity, saving costs and space. The thermal storage system reduces the capacity requirement of the electricity grid by storing chilled water at night and discharge when needed e.g. electricity outages. The plant also seamlessly integrated with the development which every part of the system is away from public view, making this huge industrial facility in the city centre "invisible".

Duration/No. of Visitors for tour: 3 pm – 4 pm/30 pax only

Tuas South Waste-To-Energy Plant

Tuas South Incineration Plant is the fourth and largest refuse incineration plant in Singapore.

Built at a cost of S\$890 million and completed in June 2000, it was designed to incinerate 3,000 tonnes of refuse daily. The plant is sited on 10.5 ha of reclaimed land and enables all incinerable waste generated in Singapore to be disposed of by incineration. The Plant was built with state-of-the-art technology. The various processes are highly automated and controlled via a digital control system. Modern equipment incorporating advanced technology is used in the plant to ensure a high level of efficiency and reliability.



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Incineration achieves about 90% reduction in volume of the refuse. Hence, all incinerable refuse are disposed of at the incineration plants while non incinerable refuse and ash from the incineration plants are disposed of at the Semakau Landfill. This helps to conserve the use of scarce land in Singapore. Tuas South Incineration Plant, together with the other incineration plants and the Semakau Landfill, will meet the refuse disposal needs of Singapore and help in achieving a clean living environment for all Singaporeans.

Duration/No. of Visitors for tour: 3 pm – 4 pm/30 pax only

Panasonic Vertical Farming

Panasonic Factory Solutions Asia Pacific (PFSAP) has been known as one of global leaders in the design, manufacturing, assembly & exporter of high-accuracy Auto-insertion & Surface Mount Technology machineries widely used in various product applications namely consumer electronics, automotive & industrial.

Most people may not easily associate the brand “Panasonic” with agriculture business, but that is precisely the business that they recently ventured into. Inspired to answer the ever-increasing need for food security and demand for high quality food supply, PFSAP fused Panasonic’s technology and factory automation expertise into agriculture, creating a new motion in 2013.

Panasonic’s vision is to offer advanced systems and solutions in urban farming industry to promote sustainable healthy lifestyle globally. They are the first and currently the only company in Singapore which has attained both Farm License and Salad Processing License within a single site. Their signature product is the “Veggie Life” salad series which are available in most of the major supermarkets in Singapore.

Duration/No. of Visitors for tour: 2.30 pm – 5 pm/40 pax only

Important note:

The above technical sites have limited seat availability so registration is based on first-come-first-serve.

Please report to the registration counter on level 3 at Suntec Convention Centre on 21 July by 1.30 pm. Delegates will board the land transfer at Lobby Pick-up Point at designated timing. Timing will be announced during the conference and lateness will not be entertained.

