The Institution of Engineers, Malaysia
(Penang Branch)

Mechanical & Electrical Convention 2023

Convention Synopsis

The IEM Penang Branch is set to host its first-ever Mechanical and Electrical (M & E) Convention 2023, a groundbreaking event dedicated to promoting knowledge sharing, safety compliance, sustainability advocacy, adoption of cutting-edge technology, and collaborative networking amongst industry professionals. This one-and-a half day convention of diverse technical talks centred around the theme "Generative Talents for Sustainability" is expected to draw over 100 attendees, including industry experts, consultants, academicians and government officials primarily from the Northern Region of Peninsular Malaysia. This event is poised to serve as a defining moment for the progress of the mechanical and electrical sectors. By bringing together the diverse array of multidisciplinary experts and by fostering a dynamic and collaborative environment this event is dedicated to the advancement of the mechanical and electrical fields and to the exchange of knowledge therein.

17 Nov 2023(Fri) 8.30am-5.30pm
18 Nov 2023(Sat) 8.30am-1.00pm

SPICE Convention Function Room

BEM CPD Hours: 9
Ref: IEM23/PG/419/T
MBOT CPD: Applied

Convention AND *Annual Dinner*	
Special Rate	Normal Rate
RM300**	RM400

Convention OR *Annual Dinner*	
Special Rate	Normal Rate
RM200**	RM250

** Special rate is only for the first 60 sign-ups or until 31st Oct whichever comes first

REGISTER ONLINE @
event.iempenang.org
by 10th Nov 2023

Mr. Alvin Sia Wee Chew
Syfonic Roof Rainwater Drainage System

Dr. Zhao Xijing
Building Electrification: Carbon Emission Reduction by Recovering Chiller Condenser Heat & Advancing Sustainability in the Construction Industry through Innovative VRF Technology

Mr. Darien Phan Tay Hin
Pre-action Valve: System, Application and Design

Assoc. Prof. Ir. Ts. Dr. Jasrul Jamani Bin Jamian
Solar Photovoltaic Energy Optimization And Challenges In Reactive Power Management

Ir. Muhamad Faizal Bin Osman
Distribution Automation - Application of SCADA Technology in TNB

Pn. Norsalizawati Binti Hashmawi @ Yusof
TNB's Energy Transition towards Greener & Sustainable Nation via Green Technology

Mr. Gaurav Yadav
Lighting Design for Health and Sustainability

Ir. Ts. Dr. Yew Ming Chia
Fire-Rated Materials for Smoke Extraction Ductwork System and Electrical Cables

Ir. Zahir Mohamed Shaffy
JKKP Requirement on New Installation, Modernization and Maintenance Contract of Lift and Escalator

Ir. Dr. Mui Kai Yin
Project Risk Management: Applying PMI® PMBOK® Guide Knowledge to Mitigate M&E Project Risks

Strategic Partner:
TAM 1946
PERSATUAN TEKNOLOGI MALAYSIA

Mechanical & Electrical Convention 2023

Day-1 (17 Nov 2023)

8.30am	Registration
9.00am	Event speech by IEM Penang Branch Chairman (Ir. Chan Wah Cheong)
9.05am	Welcoming Speech by IEM President Ir. Prof. Dr. Norlida Bt Buniyamin
9.10am	Speaker #1 – Mr. Alvin Sia Wee Chew *(Syfonic Roof Rainwater Drainage System)*
10.10am	Tea break + Exhibition walkabout
10.30am	Speaker #2 – Dr. Zhao Xijing *(Building Electrification: Carbon Emission Reduction by Recovering Chiller Condenser Heat) & (Advancing Sustainability in the Construction Industry through Innovative VRF Technology)*
11.30am	Speaker #3 – Mr. Darien Phan Tay Hin *(Pre-action Valve: System, Application and Design)*
12.30pm	Certificate presentation to speakers & group photos
12.45pm	Lunch break + Exhibition walkabout
2.30pm	Speaker #4 – Assoc. Prof. Ir. Ts. Dr. Jasrul Jamani Bin Jamian *(Solar Photovoltaic Energy Optimization And Challenges In Reactive Power Management)*
3.30pm	Speaker #5&6 – Ir. Muhamad Faizal Bin Osman & Pn. Norsalizawati Binti Hashmawi @ Yusof *(Distribution Automation - Application of SCADA Technology in TNB) & (TNB's Energy Transition towards Greener & Sustainable Nation via Green Technology)*
4.30pm	Tea break + Exhibition walkabout
4.50pm	Speaker #7 – Mr. Gaurav Yadav *(Lighting Design for Health and Sustainability)*
5.50pm	Certificate presentation to all speakers & group photos

Day-2 (18 Nov 2023)

8.30am	Registration
9.00am	Speaker #8 – Ir. Ts. Dr. Yew Ming Chian *(Fire-Rated Materials for Smoke Extraction Ductwork System and Electrical Cables)*
10.00am	Tea break + Exhibition walkabout
10.30am	Speaker #9 – Ir. Zahir Mohamed Shaffy *(JKKP Requirement on New Installation, Modernization and Maintenance Contract of Lift and Escalator)*
11.30am	Speaker #10 – Ir. Dr. Mui Kai Yin *(Project Risk Management: Applying PMI® PMBOK® Guide Knowledge to Mitigate M&E Project Risks)*
12.30am	Certificate presentation to all speakers and group photos

Speaker #1 – Mr. Alvin Sia Wee Chew

Syfonic Roof Rainwater Drainage System

Alvin Sia began his career in 1996 with a leading metal roofing manufacturer and after 7.5 years, he joined Syfon Systems, setting up their first office/factory outside Australia in Shah Alam. Although not academically trained in engineering, Alvin is supported by more than 30 engineers in Malaysia alone. He spent his first 1-2 years creating awareness of the syfonic system and introducing MSMA to architects, engineers and owners/developers. With the first syfonic test rig built in Shah Alam, many witnessed first-hand the effectiveness and efficiency of the syfonic discharge and the advantages that it brings to the architects, builders and facility managers. Alvin went on to secure many distinguished projects thereafter e.g. One Utama New Wing, Sunway Pyramid, IKEA and IKANO at Mutiara Damansara, University Teknologi Petronas etc. He also travelled frequently to neighbouring countries such as Indonesia, Philippines, Singapore, Vietnam and Macau and has been invited to conduct many presentations at both locally and abroad. Today Alvin leads the Asian team in Malaysia with more than 150 staff but he still enjoys the challenges of providing technical solutions to sophisticated projects.

Synopsis

An introduction to Syfonic Roof Rainwater Drainage System and the many advantages in today's application from design, material, installation, construction and maintenance perspective. The presentation will also cover the application of syfonic system in the rainwater harvesting management system including the introduction of first flush tanks, particle diverters and their wastewater discharge, diversion valves, tank overflow and the demarcation of scope. The topic will expand to flood lines and some of the common issues with conventional RWDP systems as well.

Speaker #2 – Dr. Zhao Xijing

Building Electrification: Carbon Emission Reduction by Recovering Chiller Condenser Heat & Advancing Sustainability in the Construction Industry through Innovative VRF Technology

Dr. Zhao Xijing is working with Daikin Asia Applied Product, System Solution team as a Senior Manager. She has more than 20 years experience in HVAC system application, building energy solution and decarbonization, green building certification, chiller plant and HVAC system retrofitting and verification.

After graduated from National University of Singapore with a Ph.D degree in Mechanical Engineering, she worked with Trane Air Conditioning, Johnson Control, and Singapore Building and Construction Authority Green Mark department in areas of HVAC product solution, chiller plant energy audit & retrofitting, solution saving strategy, Green Mark assessment, and HVAC system measurement &verification before joining Daikin. She is Singapore Certified Energy Manager, Green Mark Facility Professional, and LEED AP BD+C.

Synopsis

In order to achieve the global goal of carbon neutral for sustainable environment, building decarbonization is critical and HVAC industry is playing an important role in building carbon emission reduction. One of the key strategies is building electrification, which means the conversion of fossil fuel heating system to equipment using electrical power. This topic discusses how to minimize the heating energy consumption by recovering the “free” condenser heat from more efficient electric driven heat recovery or heat pump chiller to provide reheat, domestic hot water, laundry heating, process heating etc. in SEA. The presentation also demonstrates how water cooled heat pump to provide both cooling and heating capacity in tropical region for domestic hot water application to save energy and reduce carbon emission.

Speaker #3 – Mr. Darien Phan Tay Hin

Pre-action Valve: System, Application and Design

Darien Phan graduated from UNITEN with a Degree in Bachelor of Electrical & Electronics Engineering (2003). He is currently the Managing Director of Imprexis Solutions & Engineering (M) Sdn Bhd and is very much focusing on mechanical solutions for plumbing, fire and HVAC systems. He has 20 years of working experience in technical applications and solutions, 8 years in factory and building automation industries and recent 12 years in construction buildings. As a technical engineering specialist, he is pushing to change the traditional market practice which relies on skilled labors to a more value-added, advanced, efficient and reliable methods. He had conducted numerous seminars on topics related to mechanical systems for M&E consultants, contractors and building owners. In addition, his insight experience and hands-on work in project sites including exchanging knowledge with engineers and laborers further complements his wonderful career.

Synopsis

Choosing the right Preaction System solutions and technical support allows an Engineer to design the system accordingly and implement it on various types of applications together with various types of sprinklers. To date, Engineers face multiple challenges in choosing the correct products and designing them in accordance to the codes for fire protection systems. They also face different types of questions especially on how to maintain the complicated preaction systems. This presentation topic will address as many questions as possible about this system so that the Engineers will have a better understanding before proposing the use of Preaction systems to their clients.

Speaker #4 – Assoc. Prof. Ir. Ts. Dr. Jasrul Jamani Bin Jamian

Solar Photovoltaic Energy Optimization And Challenges In Reactive Power Management

Jasrul Jamani Bin Jamian graduated from the Universiti Teknologi Malaysia in 2008 with a Bachelor of Engineering (B. Eng. (Hons)), a Master of Engineering (M. Eng.), and a Ph.D. in electrical (power) engineering, respectively. He is currently the Kolej Perdana or residence principal of the Universiti Teknologi Malaysia. As a principal investigator and project manager for consultancy projects with numerous businesses, including Petronas and Tenaga Nasional Berhad, Dr. Jasrul is actively engaged in research that emphasizes on relay coordination projects and off-grid solar PV design. More than 80 articles in the international journals and proceedings in the field of power systems and energy are either co-written or written by him. His areas of interest in research include renewable energy, optimisation methods, and network reconfiguration.

Synopsis

Learn about the critical issues facing solar PV with a focus on power factors. Due to their ability to produce renewable energy, solar photovoltaic (PV) systems have become extremely popular even though they occasionally experience power factor problems that require maintenance. The power factor measures system efficiency by comparing real power (in kW) to apparent power (in kVA). Reduced power quality, higher line losses, and inverter overloading can all result from lower power factors. To maximise energy yield, reduce electricity waste, and improve PV system performance, power factor issues must be fixed. Join us as we investigate potential answers to increase solar PV efficiency and guarantee a future powered by sustainable energy. For a greener world, act today!

Speaker #5 – Ir. Muhamad Faizal Bin Osman

Distribution Automation - Application of SCADA Technology in TNB

Muhamad Faizal graduated from the Universiti Tenaga Nasional in 2007 with a Bachelor of Electrical Engineering. He is currently the Zone-Head for Project DA Northern Distribution Automation, TNB. He is also the 11kV TNB Authorised Person (AP) as well as the Professional Engineer registered with BEM. He was previously a team member for Project DA (Kuala Lumpur) Distribution Automation, Project DA (Northern) Distribution Automation, and Project DA-Programme for Primary Equipment Distribution Automation. He was an 11kV Controller in the Operation Planning ERCC, NERCC Seberang Jaya under Kendalian Sistem Pembahagian, TNB.

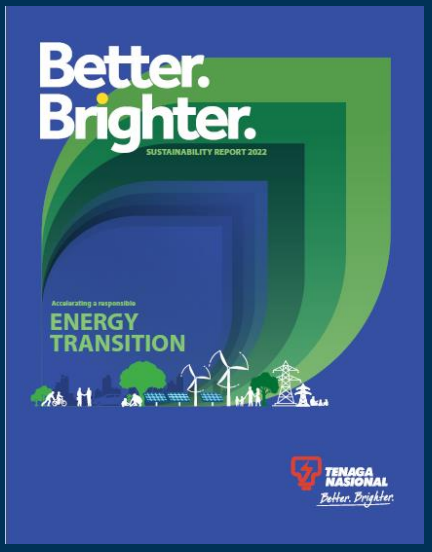
Synopsis

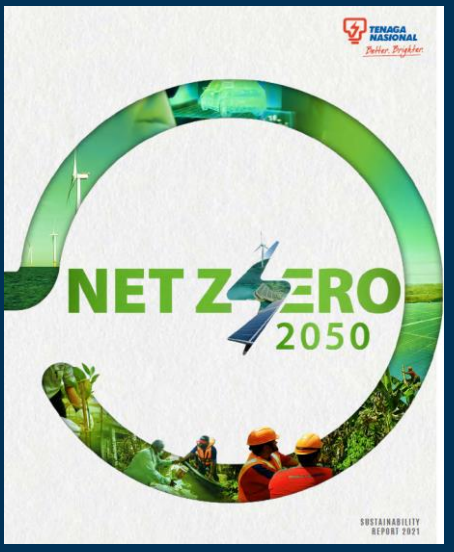
Distribution Automation (DA) is an initiative under TNB transformation program (Reimagining TNB) that uses Supervisory and Data Acquisition (SCADA) Technology by Equip substations with remote monitoring/control facility whilst improving the network reliability and productivity. The installation of DA facilities will minimize the supply interruption duration time during breakdowns of the Distribution Network System, which in turn reduces the System Average Interruption Duration Index (SAIDI).

Speaker #6 –Pn. Norsalizawati Binti Hashmawi @ Yusof

Sustainable Nation via Green Technology

Ts. Norsalizawati binti Hashmawi @ Yusof is currently working in Lead Customer Engagement at TNB Retail Division - P.Pinang. She graduated with a Bachelor's Degree in Electrical & Electronics Engineering from Universiti Tenaga Nasional (UNITEN) and possesses a Master's in Business Administration from Universiti Teknologi Mara (UiTM). She has 18 years of working experience with Tenaga Nasional in various departments including project, planning, operation, and maintenance of 11kV electrical system, organizational management, and customer service unit. She is always passionate about providing ultimate customer satisfaction while focusing on driving beyond kWh business and TNB's Sustainable Energy Solutions for residential, commercial, industrial and government sectors especially in Pulau Pinang.





Synopsis

The conventional electricity business models are being challenged by decarbonization, decentralisation, digitalization, deregulation and more, which is causing the worldwide energy supply industry to change. To tackle this changing landscape, the electricity industry has developed resilience through greater cost and energy efficiency. Hence, as a player in the energy sector, TNB is now committed to operate and grow in a sustainable manner, while providing reliable and affordable energy and its related solutions through TNB Energy Transitions Plan. Supporting by TNB's vision to be a leading provider of sustainable energy solutions in Malaysia and internationally, TNB is now expanding its services into Green Technology Solutions including solar energy, smart meter solutions and other digital solutions to align with international efforts to mitigate climate change for a better today and brighter tomorrow.

Speaker #7 – Mr. Gaurav Yadav

Lighting Design for Health and Sustainability

Mr. Gaurav Yadav is a seasoned Product Marketing Manager with 12+ years of experience in leading end-to-end strategy & cross-functional market execution for complex, high-growth product portfolios, with a focus on speed to market, product quality, and profitability. Skilled in product management, product marketing, innovation management, new product & platform development, brand launches, and market research across consumer durables and lighting domains. He fully believes in integrated marketing: that the customer comes first, that every brand touchpoint matters and that data underpins good marketing decisions. He is excited by the challenges of new category creation, particularly the aspects of portfolio management and devising a product strategy & executing it. Currently, he is working as a Senior Product Marketing Manager at Signify Malaysia (formerly Philips Lighting). Gaurav obtained a Master of Business Administration Degree from "North-western University – Kellogg School of Management" in the field of Marketing and Strategy in 2018. He also did a master's in mechanical engineering/industrial management in 2010 from Indian Institute of Technology.

Synopsis

Sustainable lighting design is an approach that aims to minimize the environmental impact and maximize the human well-being by better lighting systems. It considers factors such as energy efficiency, natural light, material selection, life cycle, and visual comfort. In order to safely and comfortably perform their tasks, occupants need lighting that provides adequate visibility without causing discomfort or distraction. Qualified lighting conditions in buildings not only provide functional and comfortable spaces, but it can also achieve greater efficiency.

Speaker #8 – Ir. Ts. Dr. Yew Ming Chian

Fire-Rated Materials for Smoke Extraction Ductwork System and Electrical Cables

Dr Yew's primary research focuses on developing Intumescent Coatings and Advanced Fire Protection Materials, ensuring compliance with relevant British Standards. He is also involved in research related to Cool Roofing Technologies Systems, Fire Protection Composite Materials and Advanced Materials Technology after gaining experience in the building and Oil & Gas industries. Dr. Yew has been recognized for his research contributions through numerous international-level awards. In addition, he is a prolific inventor with ten intellectual property rights. He received the Most Innovative Excellent Award from UTAR for his outstanding work. His research outcomes, derived from his patented intellectual property and ongoing collaboration with industries, have earned him recognition as an expert in his field. Dr. Yew's dedication to research, extensive publication record, involvement in consultancy, and active engagement in the academic community have established him as a respected figure in the field of fire protection engineering.

Synopsis

Intumescent fire protective coatings (IFPCs) are commonly used in smoke extraction ductwork systems and for enhancing the fire resistance of electrical cables. These coatings provide an additional layer of protection by expanding and forming an insulating char when exposed to high temperatures, thus slowing down the spread of fire and protecting the underlying materials.

Smoke Extraction Ductwork System:

The coating is typically sprayed or brushed onto the duct surfaces, forming a fire-resistant barrier. IFPCs for ductwork are designed to be durable and long-lasting. They are resistant to mechanical damage, moisture, and other environmental factors to ensure the coating's effectiveness over time.

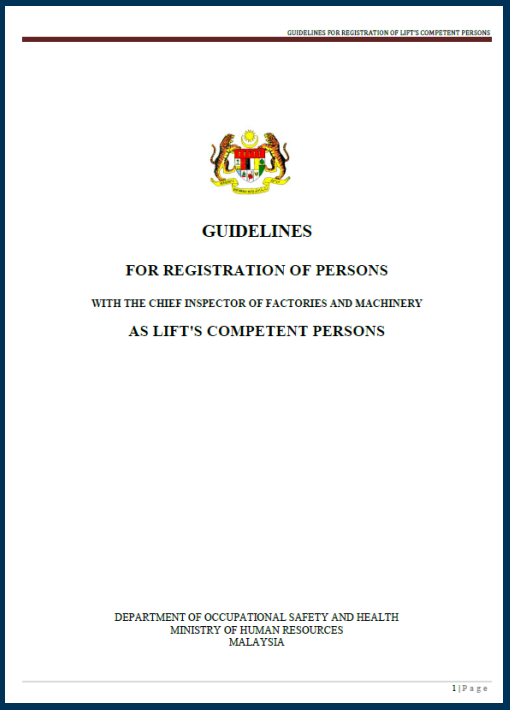
Electrical Cables:

IFPCs can be applied directly to the surface of electrical cables. The coating is typically sprayed or applied using a brush, covering the cable insulation and providing an additional layer of fire resistance. IFPCs for electrical cables comply with relevant fire safety standards and regulations.

Speaker #9 – Ir. Zahir Mohamed Shaffy

JKKP Requirement on New Installation, Modernization and Maintenance Contract of Lift and Escalator

Zahir Mohamed Shaffy has been working in the lift industry for 31 years. He has a vast experience in Project Management, Quality Assurance, and Safety Management in the aspect of lifts and escalators. Zahir is also a Lift Competent Person (Grade One) registered with JKKP since year 2002. Currently, Zahir is based in Penang and is the director of Mitsubishi Elevator.



GUIDELINES FOR REGISTRATION OF LIFT'S COMPETENT PERSONS

GUIDELINES

FOR REGISTRATION OF PERSONS

WITH THE CHIEF INSPECTOR OF FACTORIES AND MACHINERY

AS LIFT'S COMPETENT PERSONS

DEPARTMENT OF OCCUPATIONAL SAFETY AND HEALTH
MINISTRY OF HUMAN RESOURCES
MALAYSIA

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Synopsis

Lift and Escalator are equipment regulated by Factory and Machinery Act under jurisdiction of Department of Occupational Safety and Health (JKKP) to safeguard public safety. Speaker will share with audience on the JKKP requirement on new installation and modernization for lifts and maintenance contract of both lift and escalator.

Speaker #10 – Ir. Dr. Mui Kai Yin

Project Risk Management:

Applying PMI® PMBOK® Guide Knowledge to Mitigate M&E Project Risks

Dr. Mui had more than 25 years of working experience in leading, directing and managing various project portfolios in the Electronics, Telecommunication, Automotive and Construction industries, professional development, as well as not-for-profit organizations, and led more than >100 local and global new product introduction/launch and industrial projects successfully. Today, Dr. Mui focuses on providing project management training, coaching and consultancy services to local and overseas clients and not-for-profit organizations. He is currently the subject matter expert cum certified instructor for the PMI® Project Management Professional (PMP®), Agile Certified Practitioner (PMI-ACP®), and Certified Associate in Project Management (CAPM®) exam preparation boot camp, helping aspirant Project Managers/Directors, Project Leaders and Project Teams to prepare and pass the PMP®, PMI-ACP® and CAPM® credential exams.

Synopsis

Project Risk Management includes the processes of conducting risk management planning, identification, analysis, response planning, response implementation, and monitoring risk on a project (PMBOK® Guide, Sixth Edition, page 395). The objectives of Project Risk Management are to increase the probability and/or impact of positive risks and to decrease the probability and/or impact of negative risks, in order to optimize the chances of project success. Project risk has its origins in the uncertainty present in all projects. Known risks are those that have been identified and analyzed, making it possible to plan responses for those risks. Known risks that cannot be managed proactively, should be assigned a contingency reserve. Unknown risks cannot be managed proactively and therefore may be assigned a management reserve. A negative project risk that has occurred is considered as an issue. This talk introduces the Project Management Institute, PMI®, A Guide for Project Management Body of Knowledge, PMBOK® Guide, seven (7) effective steps on managing project risks that are applicable in any project environment, including the mechanical & electrical building construction projects.