JURUTERA

The Monthly Bulletin of The Institution of Engineers, Malaysia

IEM
The Institution of Engineers, Malaysia

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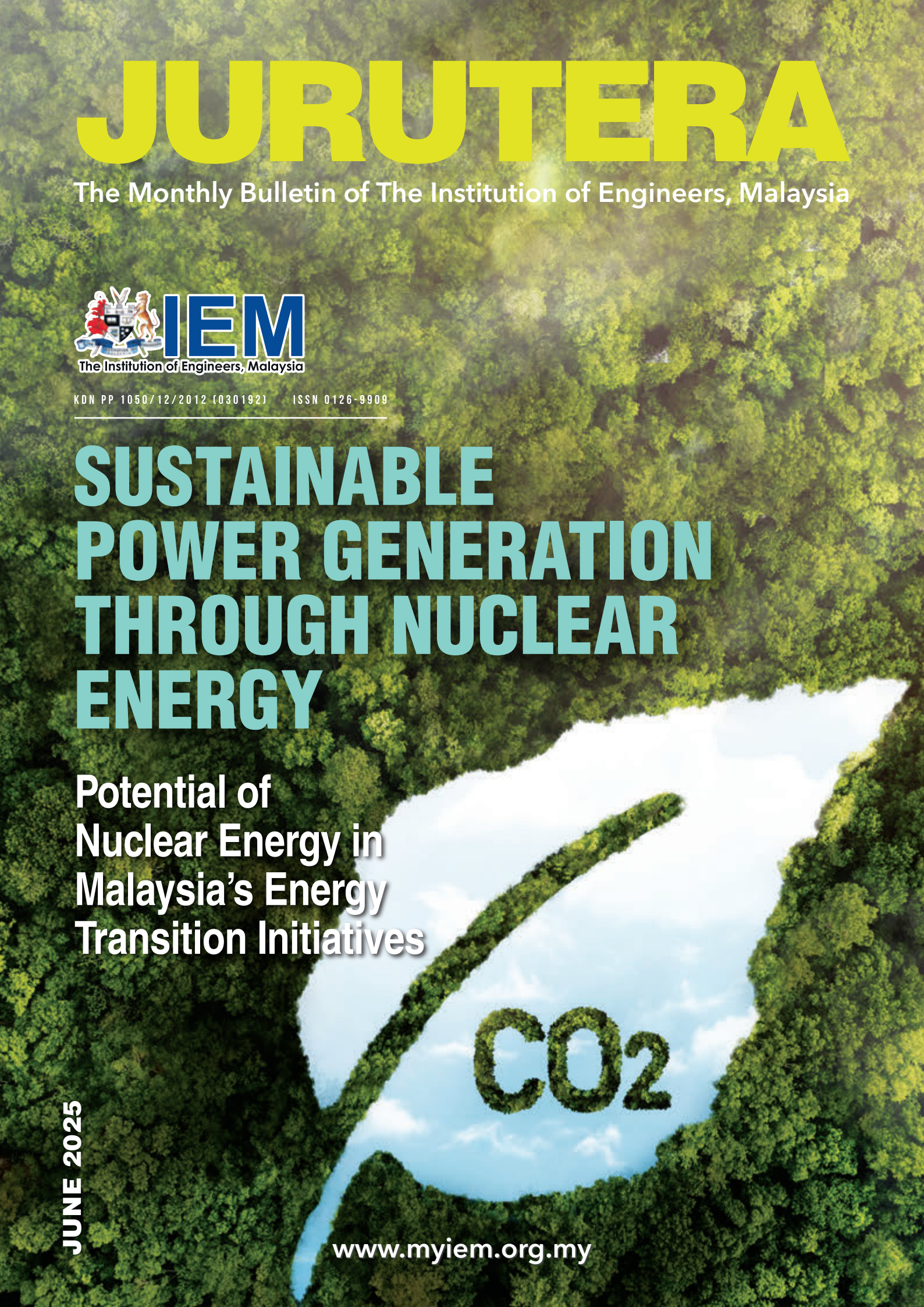
SUSTAINABLE POWER GENERATION THROUGH NUCLEAR ENERGY

Potential of Nuclear Energy in Malaysia's Energy Transition Initiatives



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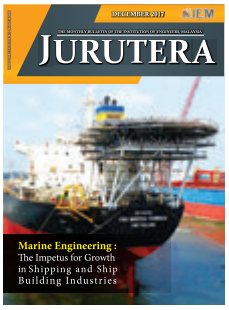

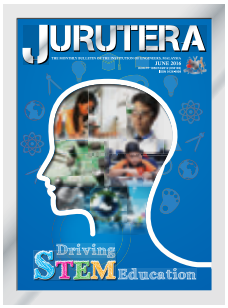

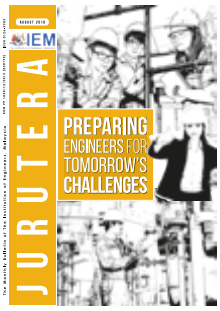

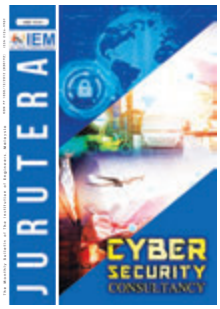

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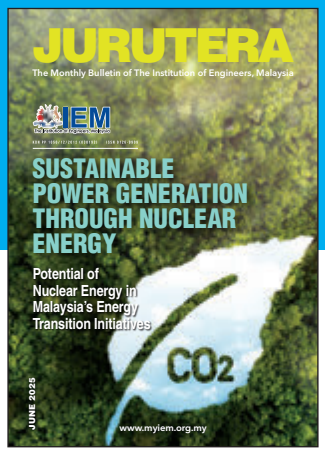

In this month's issue:

UPCOMING BULLETIN ISSUES THEME 2025

July: *AI, Robotics and Cybersecurity*
August: *Solid Waste Management and Circular Economy*

JURUTERA MAY 2025
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Souvenir Programme Book

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Asian Conference on Tunnelling and Trenchless Technology

Organised By: Tunnelling and Underground Space Technical Division

ASIAN CONFERENCE ON TUNNELLING AND TRENCHLESS TECHNOLOGY (ACTT) 2025

10 - 12 September 2025

Level 3 Hall 7A, Kuala Lumpur Convention Centre, Kuala Lumpur

Event Manager: IEMTA – IEM Training Academy Sdn. Bhd.

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The purpose of organising the **Asian Conference on Tunnelling and Trenchless Technology 2025 (ACTT2025)** is to continue the tradition of promoting knowledge exchange, innovation, and technological advancements in tunnelling and trenchless construction across Asia. The conference aims to bring together professionals, academics, industry leaders, and stakeholders from various sectors to discuss challenges, share experiences, and foster collaboration. It will provide a platform for showcasing cutting-edge research, technology, and solutions that contribute to the sustainable development of underground space.

Additionally, ACTT2025 seeks to achieve the following objectives:

Enhance professional development by offering technical sessions, workshops, and discussions on tunnelling and trenchless technology.

Encourage young engineers and students to participate actively through competitions and special sessions designed to highlight emerging talents.

Strengthen the regional network of tunnelling professionals and foster collaboration between organisations, industries, and academic institutions.

Create opportunities for technical visits to significant tunnelling and trenchless projects, allowing participants to gain practical insights into ongoing or completed works in Malaysia.

Conference Theme

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- Digital transformation and emerging technologies
- Revolutionising subterranean construction
- Innovative and resilient infrastructure for a post-pandemic world

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COVER *Note*

by Ir. Dr. Liew Chee Leong (Ricky)
Chairman, METD

Committed to Future-Forward Engineering

As Chairman of the Mechanical Engineering Technical Division (METD), I am pleased to present this month's issue of *JURUTERA*, which brings together thought-provoking articles and technical insights from our dedicated members. From the evolution of railway technology and the potential of nuclear-powered trains to Malaysia's nuclear energy roadmap and sustainable innovations in shopping malls, this issue reflects METD's commitment to championing future-forward engineering discourse.

These contributions highlight the diverse yet interconnected roles that mechanical engineers play in shaping smart, resilient and energy-conscious infrastructures. The forums and feature articles showcased are not only technical narratives but are also blueprints of how innovation, policy and practical application converge in our field.

Let this issue serve both as a reference and a spark to encourage engineers across generations to embrace sustainability, adaptability, and interdisciplinary collaboration. I extend my gratitude to all contributors and sponsors for their invaluable support in strengthening our professional community. Together, let us continue advancing engineering excellence for the benefit of society and our country. ■

EDITOR'S *Note*

by Ir. Professor Lau Hieng Ho
Chief Editor of Bulletin Editorial Board

Shaping the Nation's Nuclear Future

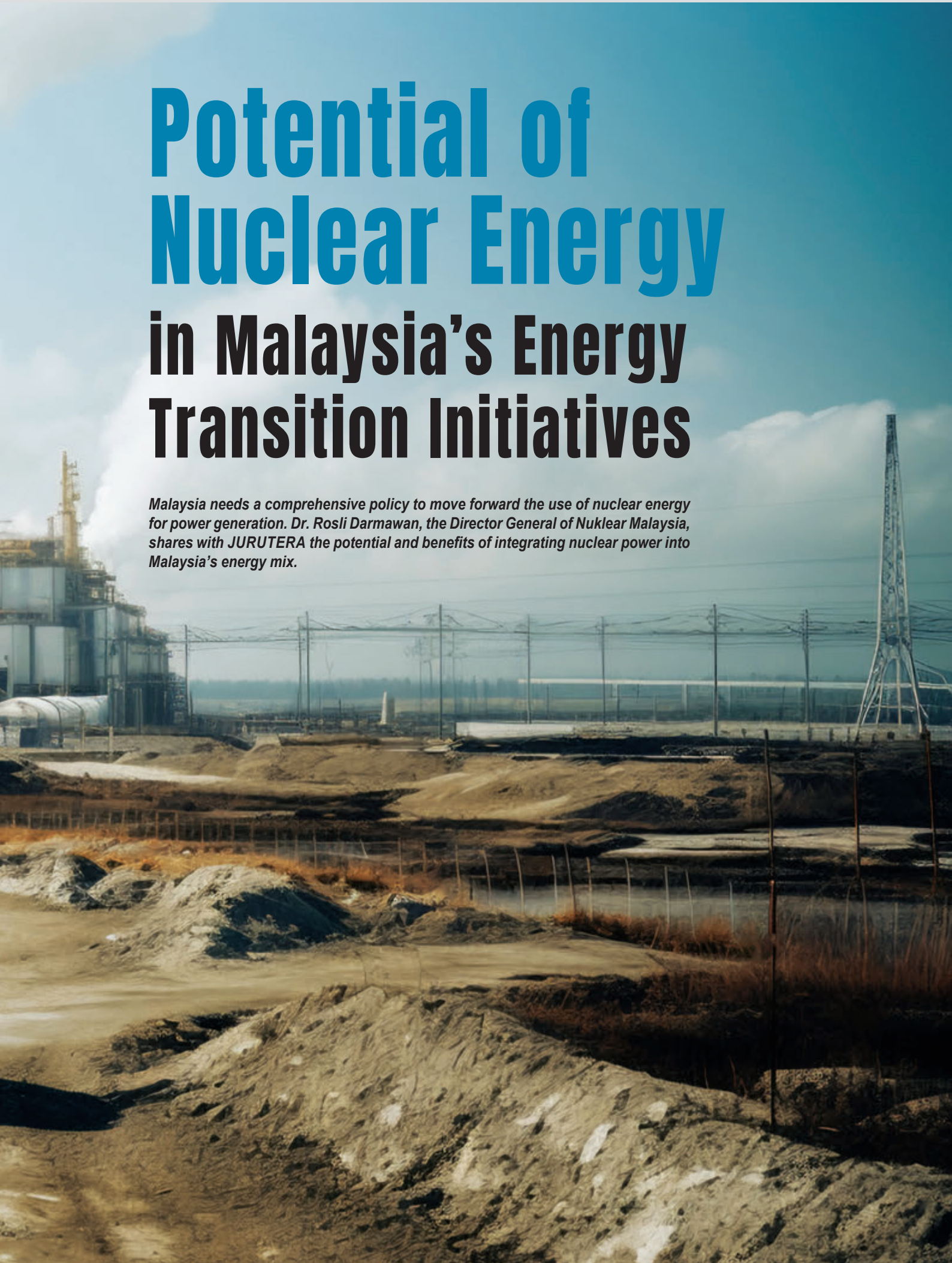
This month, *JURUTERA* reflects on the growing relevance of nuclear science and technology within Malaysia's broader engineering and energy landscape. As the nation explores new strategies to meet future sustainability goals, nuclear-related developments are once again part of the professional conversation. The cover story features insights from the Malaysian Nuclear Agency, offering a high-level view of the potential, considerations, and developments that can shape the nation's nuclear future. It underscores the importance of strategic foresight, policy coherence, and continued investment in engineering capabilities.

This issue also presents diverse perspectives across the engineering profession, from railway technology innovations and discussions on gender dynamics in engineering to technical forums on mechanical systems, retail infrastructure, and workplace safety. Each article contributes to a broader understanding of how engineering continues to adapt and lead in response to technological, societal, and environmental shifts. Together, these contributions reinforce *JURUTERA*'s role as a platform for reflective thought, critical engagement, and professional exchange within the engineering community.

As the editorial direction continues to evolve, the editorial team remains committed to supporting the IEM mission to address both current and emerging themes in engineering practice and policy. ■

Potential of Nuclear Energy in Malaysia's Energy Transition Initiatives

Malaysia needs a comprehensive policy to move forward the use of nuclear energy for power generation. Dr. Rosli Darmawan, the Director General of Nuklear Malaysia, shares with JURUTERA the potential and benefits of integrating nuclear power into Malaysia's energy mix.



From left: Dr. Julia Abdul Karim, Nuklear Malaysia's Director of Technical Support Division; Ir. Ts. Dr Sara Lee Kit Yee, Secretary/Treasurer of IEM's Mechanical Engineering Technical Division (METD); Dr. Fairuz Suzana Mohd. Chachuli, Nuklear Malaysia's Director of Planning and International Relations; Ir. Assoc. Prof. Dr. Hasril Hasini, Committee Member of METD; Dr. Rosli Darmawan, Nuklear Malaysia's Director-General; and Ir. Tony Cheng Yew Leong, Deputy Chairman of IEM's METD

Malaysia's energy sector is currently undergoing a major transformation in tandem with global energy transition — shifting from fossil-based with high carbon emissions intensity to clean and renewable energy (RE) sources (wind power, solar power, bioenergy and hydroelectric) while addressing the energy trilemma of security, affordability and sustainability. Non-RE sources, including coal, natural gas, oil and nuclear energy will deplete over time, hence the emphasis on RE sources. Malaysia's Power Generation Development Plan 2019 has considered the energy trilemma through the implementation and adoption of the Government's policies and planning criteria. According to Tenaga Nasional Bhd's Report on Peninsular Malaysia Generation Development Plan 2019 covering the period 2020–2030, Malaysia's electricity demand over the next 11 years is expected to grow at 1.8% p.a. Over the same period, 9,321MW of new capacity is required to meet demand growth, replacing retiring power plants and ensuring system reliability, with the reserve margin projected to reach below 25% by 2030.

While RE is widely hyped as the future of energy to reduce greenhouse gas (GHG) emissions into the atmosphere, nuclear power has also been discussed as a potential part of Malaysia's energy mix. This is based on the United Nations' agenda of pushing towards net-zero emissions by 2050 and keeping the increase in global average temperature below 1.5 degrees Celsius above pre-industrial levels. Regarded as the way to bridge the energy gap, nuclear energy is not only clean but also considered reliable as it addresses the intermittent nature of RE sources. Nuclear energy is also deemed important to the global clean and sustainable energy transition, which is the key to achieving net zero emissions (refers to achieving a balance between the carbon emitted into the atmosphere and the carbon removed from it). At the 28th Conference of the Parties of the United Nations Framework Convention on Climate Change (COP28) in 2023 held in Dubai United Arab Emirates, the UAE consensus reflected a clear commitment to triple RE and double energy efficiency by 2030, aiming to achieve net-zero Greenhouse Gas (GHG) emissions by 2050 and keep the increase in global average temperature below 1.5 degrees Celsius above pre-industrial levels. Malaysia is one of the parties committed to the COP28 consensus.

The Malaysian government aims to achieve 70% RE installed capacity by 2050 through the National Energy Transition Roadmap (NETR) launched in August 2023. Currently, Malaysia's energy sources are predominantly fossil fuels, with coal and natural gas contributing to over 80% of local electricity generation. Malaysia has vast potential for RE, particularly from solar and other sources. However, scientists have found that nuclear energy is one of the best options to consider when substituting fossil fuels.

Initial Venture into Nuclear Energy

Since 2009, Malaysia had been taking preparatory measures to pave the way for the implementation of a nuclear energy development programme, including establishing Nuclear Power Corporation of Malaysia as the nation's first nuclear energy programme implementing organisation. In fact, Malaysia's foray into nuclear energy began much earlier in 1972 with the establishment of the Tun Ismail Atomic Research Centre (Pusat Penyelidikan Atom Tun Ismail, in short, PUSPATI) for the development of nuclear technology. Placed under the ambit of the then Ministry of Science, Technology and the Environment, PUSPATI spearheaded nuclear research in Malaysia with the historic establishment of Reaktor TRIGA PUSPATI, which is the nation's first and only nuclear research reactor. TRIGA stands for Training, Research, Isotope Production and General Atomic. Located in the Nuklear Malaysia site in Kajang, Selangor, it began operations way back in 1982.

Tun Ismail Atomic Research Centre has gone through several name changes over the years, and in 2006, it was renamed Malaysian Nuclear Agency (Nuklear Malaysia) to reflect the emphasis on nuclear. The Director General of Nuklear Malaysia, Dr. Rosli Darmawan, says Malaysia has considered to develop nuclear energy as part of the country's energy mix but with a higher potential in the usage of oil and gas and new RE sources, the focus on harnessing nuclear energy has taken a back seat. The high costs involved in exploiting nuclear energy have also made it not viable.

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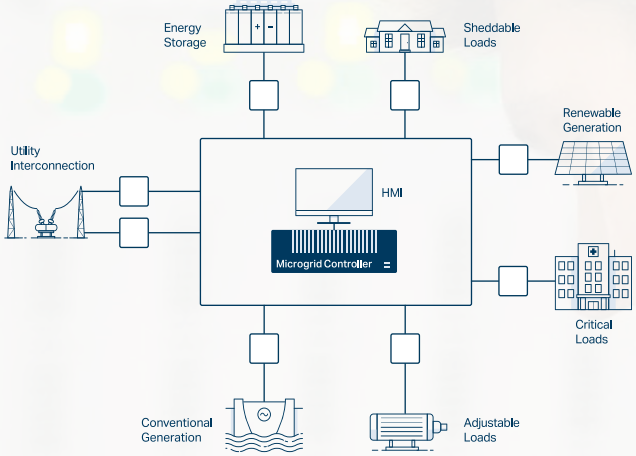

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Members of METD with Dr. Julia Abdul Karim (second from right) on a tour of TRIGA PUSPATI Reactor site

Moreover, he added, nuclear-related disasters such as the Fukushima nuclear accident have caused many countries to rethink the role of nuclear power in their energy mix. This includes Malaysia, which took a no-nuclear stance in 2018.

However, nuclear energy remains in the agenda of powering the nation in the future although there is now less focus on it. Other major reforms can be expected to liberalise the country's rapidly growing power sector to ensure it will be more competitive and self-reliant. Hence, in 2011, the Government formed MyPower Corp under the Ministry of Energy, Green Technology and Water to spearhead the reforms and to drive the Malaysian Electricity Supply Industry (MESI) Transformation initiative in collaboration with the Ministry of Energy Transition and Water Transformation (PETRA). PETRA currently focuses on the implementation of its 3D initiative – Digitalisation, Decentralisation, and Decarbonisation – which underscores its commitment to advancing green investment and technology development.

Focus on Nuclear Science, Technology and Engineering

Meanwhile, Dr. Rosli says Nuklear Malaysia continues to conduct research related to nuclear science, technology and engineering, in addition to harnessing nuclear energy from its TRIGA PUSPATI nuclear reactor. He adds that Nuklear Malaysia focuses on the peaceful use of nuclear technology, with significant achievements in its applications in various areas, including industry, medical, waste technology and environment, agrotechnology and biosciences, radiation health and safety, accelerator technology, radiation processing technology and nuclear technology support facilities. The facilities include laboratories, such as Non-Destructive Testing Laboratory, Electron Beam Processing Service Centre, Gamma Irradiation of Rubber Latex Plant, Radioisotope Production Laboratory, Environmental Laboratory and Radioactive Waste Management Centre. Through these facilities, nuclear science and technology assume significant role in national development.

TRIGA PUSPATI Reactor core submerged in distilled water that serves as a neutron coolant and moderator

Nuklear Malaysia's Director of Technical Support Division, Dr. Julia Abdul Karim, says the nuclear energy sector has advanced significantly through various generations of reactor designs, from Generation 1 to the current

Generation 3+ and Generation 4 reactors, which incorporate rigorous safety measures to mitigate risks. These have robust design features and are built to withstand significant impacts, ensuring their structural integrity and safety.

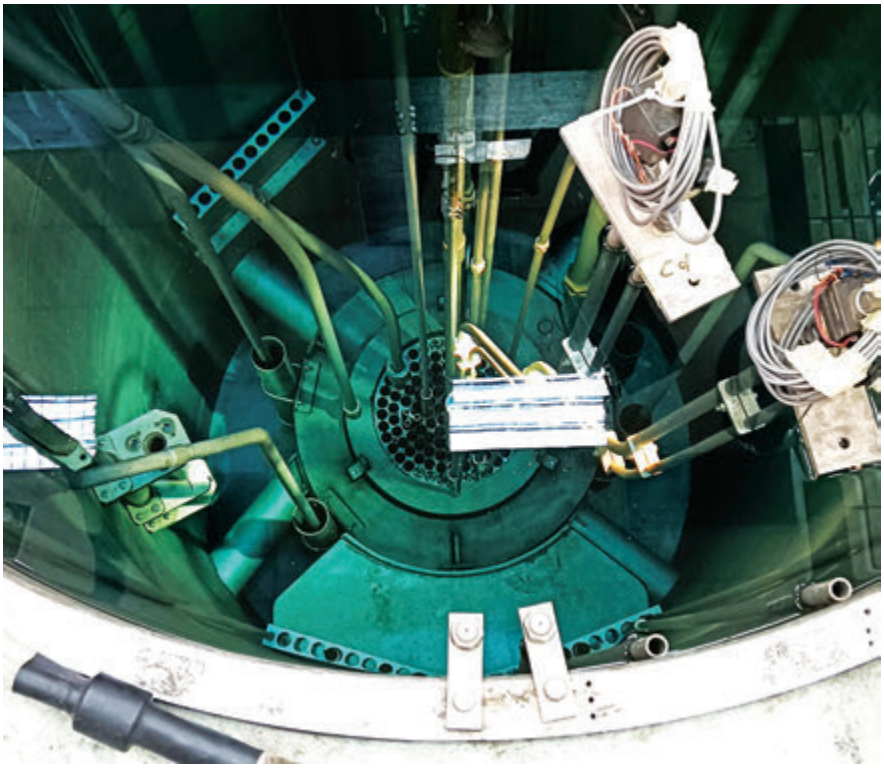
She says Nuklear Malaysia TRIGA PUSPATI Reactor (RTP) is a pool-type research reactor, with 1 MW thermal energy. Its core is located at the bottom of a seven-metre deep aluminium tank and surrounded by a biological shield based on high-density concrete. The solid fuel reactors use enriched uranium and zirconium-hydride (U-ZrH1.6). Distillation water serves as a neutron coolant and moderator, while graphite serves as a neutron reflector.

She explains that RTP was commissioned after gaining first criticality in June 1982. Elaborating, she says during normal reactor operations, nuclear fuel sustains a fission chain reaction or criticality. A reactor achieves criticality when each fission event releases a sufficient number of neutrons to sustain an ongoing series of reactions. Henceforth, the main research activities carried out by Nuklear Malaysia encompass safe operation of RTP and enhance its utilisation; ageing management programme on RTP structures, systems and components (SSC); and safety, security and safeguard of RTP. In irradiation/radioactivity, the RTPs are designed to use neutron sources in the field of nuclear, science and engineering (NSE). Facilities offered for irradiation include rotary rack (for the formation of medium and long-lived radioisotopes, used for neutron activation analysis, diagnosis and therapy and non-destructive testing) and neutron beams (used for physics experiments - neutron scattering, neutron diffraction, etc, as well as neutron radiography), among others.

Nuclear Energy Development

Nuklear Malaysia's Director of Planning and International Relations, Dr. Fairuz Suzana bt. Mohd. Chachuli says Malaysia has developed a significant pool of local nuclear talent and has safely operated the RTP since its inception. From 2011 to 2019, Malaysia pursued nuclear power and established a Nuclear Energy Programme Implementing Organization (NEPIO) following the International Atomic Energy Agency (IAEA) guidelines. IAEA is an inter-governmental organisation that promotes the peaceful use of nuclear energy and inhibits its use for any military purpose, including nuclear weapons. She says Malaysia is a signatory to IAEA since 1969 and IAEA has acknowledged Malaysia's many successes in nuclear-related research, development and commercialisation activities, including in the agricultural industry and the medical field. Although NEPIO was disbanded in 2019, IAEA still recognises Malaysia's efforts as exemplary for newcomer countries and has identified areas for improvement should Malaysia decide to adopt nuclear power.

Proponents of nuclear power have urged Malaysia to reconsider its interest in nuclear energy for power generation. Dr. Rosli says with the advancements in technology and the eventual depletion of fossil fuels, Malaysia should revisit nuclear energy as a viable option. Within ASEAN, Singapore has already signed the 123 Agreement (Section 123 of the United States Atomic Energy Act of 1954, titled "Cooperation With Other Nations", establishing an agreement for co-operation as a prerequisite for nuclear deals between the US and any other nation) with the US, while Thailand signed an MoU with China for nuclear co-operation in 2010. Both the Philippines and Indonesia have signed MoUs with the US in 2022. The Philippines has started exploring the potential for nuclear energy development, while Indonesia is focusing on developing its own Small Modular Reactors (SMRs) which are another promising area of advanced nuclear energy. SMRs which use fission technology are closer to becoming a reality with many experts and investors predicting SMRs will be operational by 2030. Dr. Rosli believes that SMRs will allow for phased deployment, enabling gradual integration into Malaysia's energy grid. He adds that SMRs also offer enhanced safety features. They require lesser land and water usage and have the ability to serve smaller, decentralised energy systems.



The core of TRIGA PUSPATI Reactor at the bottom of a seven-metre deep aluminium tank

Dr. Rosli Darmawan

Director General of Nuklear Malaysia

Dr. Rosli Darmawan was appointed Director-General of the Malaysian Nuclear Agency effective 6 September 2023. He was the agency's former Deputy Director-General (Research and Technology Development) with relevant qualifications, experience and knowledge in nuclear engineering development and research, and nuclear reactor safety systems. He holds a Degree in Mechanical Engineering from the University of the Pacific, United States, and in Manufacturing Systems Engineering and Mechanical Engineering from Universiti Putra Malaysia.

He says these qualities align well with Malaysia's geographic and economic landscape. However, it will take some time for SMRs to become a reality as they are still undergoing testing. Dr. Julia says Malaysia may wait for the technology to reach a certain level of maturity before adopting it.

Securing Sustainable Energy

Says Dr. Rosli, "Looking to the future, fusion technology offers virtually limitless energy with minimal environmental impact. What is required now is for Malaysia to draw up a comprehensive policy on the utilisation of nuclear energy for power generation. A thorough reactor technology assessment study should also be conducted to select the most appropriate technology for the country."

"Our neighbours are already making progress in exploring nuclear energy. Like it or not, nuclear power will come to our region. Malaysia already has the foundation and local expertise. What we need now is our government policy to move forward. Nuclear energy takes time to develop, and investments in its development are very high running to billions but the technology is long lasting, up to about 60 years," he says.

An area of concern is nuclear waste and its disposal, but Dr. Rosli says the safety of modern nuclear reactors comes with proven waste management protocols. This requires the long-term management of radioactive spent fuel and robust governance measures and stringent regulations to ensure a high level of safety, security and safeguards. Furthermore, Malaysia complies with stringent standards and international obligations concerning nuclear energy as well as the relevant local licensing and regulations as spelt out in the Atomic Energy Licensing Act 1984 (Act 304), which is a Malaysian law that provides for the regulation and control of atomic energy and the use of radioactive materials.

Dr. Rosli believes Malaysia is well-positioned to integrate nuclear power into its energy mix, complementing RE sources and supporting the NETR. "We can leverage on the experience from the 2019 NEPIO. Incorporating nuclear energy could lower the emissions intensity of Malaysia's electricity supply," he says, noting that despite the high initial investment in nuclear technology, the long-term benefits include stable and clean energy in the long run, and ultimately securing a sustainable energy future for decades to come. ■

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Malaysia's Nuclear Power Journey: The Road Ahead and Lessons from the Past

by:

Dr. Mohd Syukri Yahya

Director of the Institute of Nuclear Energy at UNITEN, he holds a PhD in Nuclear Engineering from KAIST, with research interests in advanced and innovative reactor technologies.

Malaysia stands at a pivotal moment in its energy transition. As we seek sustainable and reliable energy solutions, nuclear power is emerging as a viable option. With its ability to provide stable, low-carbon baseload electricity, nuclear energy can play a crucial role in enhancing Malaysia's energy security and meeting its long-term climate commitments. However, the path to nuclear power adoption is not without challenges.

Malaysia's interest in nuclear energy is not new. Multiple efforts over the past decades have assessed its feasibility, only to be halted due to policy shifts, economic considerations, and public concerns. Learning from these past experiences is essential to ensuring the success of current initiatives.

This article explores Malaysia's nuclear journey by reviewing historical milestones, analysing key obstacles, and outlining a path forward. As key players in the nation's energy landscape, engineers will play a critical role in ensuring that nuclear aspirations are grounded in technical excellence, regulatory preparedness, and public trust.

History of Nuclear Technology in Malaysia

Malaysia's engagement with nuclear technology spans a century, reflecting a long-standing familiarity with radiation and its applications. From early medical uses to advanced research and regulatory frameworks, the country has steadily built its expertise in nuclear science and technology.

Malaysia's foray into nuclear technology dates back to February 1897, when the first X-ray machine was installed at Taiping Hospital, merely 18 months after Wilhelm Röntgen's discovery of X-rays in November 1895. Given the logistical challenges of transporting such sophisticated equipment at the time, this demonstrated the country's early receptiveness to technological advancements. Since then, nuclear medicine has become a critical component of the healthcare sector, supporting cancer treatment, diagnostic imaging, and radiation therapy.

Beyond medical applications, Malaysia has actively explored nuclear technology across various sectors. A key milestone was the commissioning of Reaktor TRIGA PUSPATI (RTP) in June 1982, Malaysia's only nuclear research reactor. RTP has played a pivotal role in nuclear-related research, radioisotope production, and education, serving as a training ground for scientists and engineers.

Nuclear technology also contributed to Malaysia's industrial and agricultural advancements. Non-destructive testing (NDT) is widely used for structural integrity evaluations, while food irradiation and mutation breeding have enhanced agricultural productivity.

However, our experience with radioactive materials has not been without challenges. The Asian Rare Earth (ARE) plant in Bukit Merah in the 1980s remains a cautionary tale, underscoring the need for stringent regulatory oversight and public engagement in radioactive waste management. In contrast, the Lynas rare earth processing facility in Gebeng demonstrates Malaysia's improved capabilities in handling radioactive materials under stricter safety standards.

Our nuclear journey has been one of continuous learning and adaptation. With a solid foundation in nuclear technology, the country is well-positioned to take the next step in exploring nuclear power as part of its future energy mix.

Nuclear Power Preparatory Activities: Past Attempts and Lessons Learned

Malaysia's nuclear power journey is marked by cycles of interest, feasibility studies, and setbacks. The first structured exploration began in the 1970s, driven by concerns over energy security and economic growth. Feasibility studies under the Fourth Malaysia Plan (1981-1985) assessed nuclear energy's role in the electricity generation. Key players included Unit Tenaga Nuklear (UTN) under the Prime Minister's Department (now Agensi Nuklear Malaysia) and Lembaga Letrik Negara (now Tenaga Nasional Berhad or TNB). At the time, nuclear energy was viewed as a promising option for diversifying the national energy portfolio and reducing dependence on fossil fuels.

However, the initiative lost momentum as the discovery of offshore oil and gas reserves in Terengganu during the 1980s provided us with a readily available and economically viable energy source. As the country became a net energy exporter, the urgency for nuclear power diminished. With stable electricity demand and an expanding fossil fuel base, nuclear power was seen as a long-term option rather than an immediate necessity. The government instead prioritised maximising hydrocarbon resources, leading to the shelving of nuclear power plants.

By the mid-1990s, nuclear energy aspirations had largely faded, particularly with the government's plan to transmit electricity from the Bakun Hydroelectric Dam in Sarawak to Peninsular Malaysia via a High Voltage Direct Current (HVDC) submarine cable. While research efforts continued at Agensi Nuklear Malaysia (then known as Malaysian Institute of Nuclear Technology, MINT), there was no significant progress toward establishing a nuclear power programme.

Renewed interest emerged in the late 2000s, driven by rising energy demand, volatility in crude oil prices, and carbon reduction goals. A pivotal step was the establishment of the Malaysia Nuclear Power Corporation (MNPC) in January 2011. As the Nuclear Energy Programme Implementing Organisation (NEPIO), MNPC was tasked with developing a roadmap, conducting feasibility studies, and preparing the groundwork for a future nuclear power plant. During this period, Malaysia initially aimed for a commercial operational date of 2021; this was later revised to post-2025, for a 2x1000 MWe nuclear power plant. Key preparatory activities included:

- Comprehensive feasibility assessments on technology options, economic viability, and grid integration, conducted in collaboration with stakeholders.
- Evaluation of reactor designs from South Korea, France, Russia, and the United States.
- Preliminary desktop site screening, identifying potential locations for Malaysia's first nuclear power plant.
- Enhancing the regulatory framework to align with International Atomic Energy Agency (IAEA) standards, including steps toward establishing an independent nuclear regulatory body.
- Public outreach programmes to educate stakeholders and the public on nuclear energy.

One significant milestone was an invitation to the IAEA for an Integrated Nuclear Infrastructure Review (INIR) mission in 2016, which concluded that Malaysia was ready to proceed to the next phase of nuclear power deployment. However, political changes in May 2018 led to the dissolution of MNPC in September 2019, and nuclear power was deprioritised in favour of renewables and natural gas.

Public opposition, exacerbated by the Fukushima Daiichi nuclear accident, also posed a major challenge. Concerns over safety and radioactive waste hindered political and societal acceptance. Despite the cancellation of nuclear power plans, Malaysia continued to engage with the IAEA to enhance policy frameworks, regulatory preparedness, and capacity building.

Ongoing Effort: Malaysia's Current Nuclear Power Preparations

Malaysia's nuclear power ambitions have entered a new phase, driven by policy commitments to energy transition, Environmental, Social, and Governance (ESG) requirements, and the rising demands from data centres. Lessons from the MNPC era highlighted three critical factors for success:

1. Bipartisan commitment to long-term energy planning
2. Stronger public engagement to build societal trust
3. A stable, independent regulatory framework to ensure nuclear deployment readiness.

Unlike previous attempts, the current initiative benefits from a clearer strategic vision, broader stakeholder involvement, and a renewed recognition of nuclear power's role in sustainable energy. Malaysia has set a target of net-zero emissions by 2050, making nuclear power an attractive complement to renewable energy sources.

Nuclear research laboratory

The global energy landscape also shifted significantly in favour of nuclear power. Rising fossil fuel costs, energy security concerns, and advancements in nuclear technology such as Small Modular Reactors (SMRs) have strengthened the case for nuclear energy. Many countries, including Japan and South Korea, have reversed anti-nuclear policies, recognising its role in energy independence and decarbonisation.

At home, the Malaysian government has integrated nuclear into its energy transition discussions. Regulatory updates are being aligned with IAEA 3S (safety, security, safeguards) standards. A pre-feasibility study, which was completed in December 2024, explored both conventional large reactors and SMRs, with SMRs gaining traction due to their modularity, scalability, and lower investment requirements.

The current effort involves a multi-stakeholder approach, with several key institutions shaping Malaysia's nuclear power exploration. Despite the progress, challenges remain. Public perception continues to be a significant hurdle, as nuclear energy still faces scepticism due to past incidents like Fukushima and concerns over radioactive waste management. Transparent communication, public education, and stakeholder engagement are critical in building trust and countering misinformation. Initiatives such as academic collaborations, industry roundtables, and community outreach programmes will play a pivotal role in shaping positive public sentiment.

Integrating nuclear power into Malaysia's existing grid infrastructure requires careful planning. Nuclear plants require high-capacity transmission networks, and potential sites must be selected based on geotechnical, environmental, and social considerations. While past feasibility studies have identified potential sites, updated assessments are necessary to align with current energy demands and regulatory requirements.

Given our lack of experience in constructing and operating a nuclear power plant, international collaboration is vital. Strategic partnerships with experienced nuclear nations will facilitate critical knowledge transfer in areas like technology selection, reactor design, and operational best practices. Continued engagement with the IAEA and participation in global nuclear forums will further enhance Malaysia's nuclear capabilities.

In summary, the current approach to nuclear power is more strategic, collaborative, and policy-driven than previous efforts. With stronger governmental backing, enhanced institutional readiness, and alignment with global energy trends, Malaysia has the potential to successfully integrate nuclear power into its energy transition strategy, contributing to energy security, economic growth, and carbon neutrality by 2050.

Engineers' Role in Malaysia's Nuclear Future

Malaysia is not starting from scratch. Instead, we are building on decades of institutional knowledge, past studies, and an established regulatory framework. From the early establishment of the Centre for Application of Nuclear Energy (CRANE) to the dissolution of MNPC, the country has accumulated valuable experience in its nuclear power journey.

However, history had shown that past failures were not due to technical shortcomings but rather to policy shifts and public scepticism. Ensuring success this time around requires political commitment, structured planning, and societal acceptance.

At the heart of this effort lies the critical role of engineers, which extends beyond technical expertise. Engineers must step forward, not just as designers and operators, but also as advocates, problem-solvers, and thought leaders in the national discourse on nuclear energy. Moreover, engineers will play a key role in shaping Malaysia's nuclear safety culture, fostering public trust through transparency, and ensuring adherence to international best practices.

This is a call to action for Malaysia's engineering community:

- Stay informed about nuclear advancements and policy developments.
- Engage in public discourse to counter misinformation.
- Contribute expertise in research, design, construction, and operations.
- Collaborate with policymakers, regulators, and industry stakeholders to ensure a well-coordinated and sustainable nuclear rollout.

Malaysia is at a turning point in its energy future. If nuclear power is to become a reality, it will require the technical excellence, dedication, and leadership of engineers. The opportunity is here but will we rise to meet it? ■

NOTICE OF IEM (NEGERI SEMBILAN BRANCH) OFFICE BEARERS FOR SESSION 2025/2026

The Institution of Engineers, Malaysia (IEM) Negeri Sembilan Branch had its 32nd Annual General Meeting on 31st May 2025 and we are pleased to introduce the new office bearers for session 2025/2026:

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Evolution of Railway Technology: Are We Ready for Nuclear-Powered Trains?

by:

Ir. Yeoh Jit Shiong

A committee member of the Mechanical Engineering Technical Division, he has been involved in the railway industry and railway projects in Malaysia for the last 17 years.

The railway industry has undergone significant transformation since steam locomotives were introduced in the early 19th century. From coal-powered engines to diesel and electrified trains, the demand for more efficient and environmentally sustainable rail transport has driven continuous innovation.

Figure 1: Steam locomotive[1]

As the world accelerates its transition to clean energy solutions, the transportation sector too is undergoing a major transformation to reduce carbon emissions and reliance on fossil fuels. Railways, known for their efficiency and sustainability, are at the forefront of this shift, with innovations in electrification, hydrogen fuel cells, and battery-powered locomotives leading the way. However, to achieve even greater efficiency and long-term sustainability, researchers and engineers are now exploring the feasibility of nuclear-powered trains as a groundbreaking advancement in railway technology.

Nuclear propulsion presents unique advantages over existing systems, offering unparalleled energy density, zero direct emissions, and an extended operational range without frequent refuelling. This can revolutionise long-distance and freight rail transport, reducing dependence on conventional energy sources. However, the integration of nuclear technology into rail infrastructure comes with significant challenges, including stringent safety protocols, high initial investment costs, regulatory hurdles, and public perception concerns. Despite these obstacles, the potential of nuclear-powered trains as a next-generation clean energy solution continues to spark interest and debate in the pursuit of a sustainable future.

Historical Evolution of Railway Propulsion

Railways have seen an evolution in propulsion systems which enhance efficiency and sustainability:

- **Steam Trains (early 1800s to mid-1900s):** Powered by coal and water, steam locomotives were the backbone of early railway networks but they were inefficient and highly polluting.
- **Diesel Trains (1930s to present):** More efficient than steam, diesel locomotives revolutionised rail transport by offering longer range and greater power.
- **Maglev Trains (1960s to present):** Using magnetic levitation for propulsion, maglev trains eliminate friction, achieving extremely high speeds and energy efficiency, with operational systems in Japan and China.
- **Electric Trains (Late 1800s to present):** Utilising overhead power lines or third rails, electric trains became popular in urban transit and high-speed rail due to their efficiency and lower emissions.
- **Battery-Electric Hybrid Trains (21st Century onwards):** Incorporating advanced batteries and hybrid systems, these trains reduce reliance on diesel while enabling operation on non-electrified tracks.
- **Hydrogen-Powered Trains (21st Century onwards):** With advancements in clean energy, hydrogen fuel cell trains have emerged as a zero-emission alternative to diesel, such as Alstom's Coradia iLint, which operates in Germany.

Figure 2: Hydrogen fuel cell train[2]

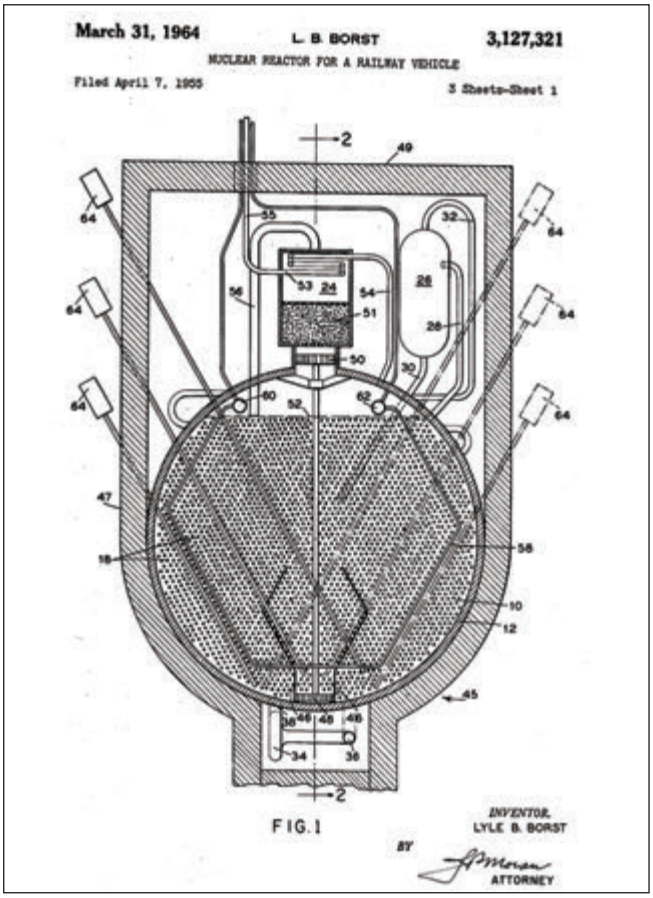

Figure 3: US patent for railway nuclear reactor[3]

The Concept

Nuclear energy, known for its high energy density and low carbon footprint, has been explored as a potential railway propulsion system. The idea is not new; during the Cold War, several nations considered nuclear-powered locomotives, but technological and safety challenges halted progress. It was first considered by Russia in the 1950s and, even as recently as 2011, news of Russia designing a nuclear-powered train surfaced. Early this year Indian Railways is also embarking on nuclear power to achieve its net zero goal by 2030. Nevertheless, we have yet to see the birth of the first Nuclear-Powered train in the world.

Potential Benefits

- **Longer Range & High Energy Density:** Nuclear reactors provide a continuous and reliable power source, allowing trains to travel vast distances without refuelling.
- **Lower Carbon Emissions:** Unlike diesel engines, nuclear power does not produce greenhouse gas emissions.
- **Reduced Dependency on Fossil Fuels:** With a shift toward nuclear propulsion, reliance on oil-based fuels for rail transport could decrease.
- **Consistent Power Supply:** Unlike battery-electric or hydrogen-powered systems that require recharging or refuelling, a nuclear reactor can operate for years without interruption.

Major Challenges

- **Safety Concerns:** The presence of radioactive materials in a mobile setting poses significant safety and security risks, particularly in the event of accidents or sabotage.
- **Infrastructure & Cost:** Developing the necessary shielding and safety systems for nuclear-powered trains would require substantial investment in both train design and railway infrastructure.
- **Public Perception & Regulatory Hurdles:** Nuclear energy faces public scepticism and regulatory frameworks would need to be developed to govern the safe operation of nuclear trains.
- **Disposal of Nuclear Waste:** Handling and disposing of spent nuclear fuel remains a complex issue that needs to be addressed before nuclear-powered trains can become viable.

Technological Innovations for Nuclear Powered Trains

Advances in nuclear technology may overcome some of the challenges of using nuclear power in rail transport. Several innovative approaches have been proposed:

1. **Compact Molten Salt Reactors (MSRs):** Molten Salt Reactors (MSRs) use liquid fuel mixed with a molten salt coolant, which allows for safer operations and lower risks of meltdown. These reactors are compact and can potentially be miniaturised for railway applications.
2. **Small Modular Reactors (SMRs):** SMRs are designed to be more compact and safer than traditional nuclear reactors. Their modularity allows for easier integration into railway vehicles while maintaining strict safety standards.
3. **Thorium-Based Nuclear Reactors:** Thorium-based nuclear reactors offer a safer and more sustainable alternative to traditional uranium reactors. Thorium is more abundant, produces less long-lived waste, and has inherent safety advantages, making it a potential candidate for railway applications.

Comparison with Current Available Technology

While nuclear propulsion is an exciting concept, other advanced propulsion systems are also being explored for rail transport. Table 1 shows a comparison of nuclear propulsion with alternative technologies.

- **Nuclear Power:** Despite its potential as a zero-emission technology, nuclear power remains controversial due to safety risks, high costs, and regulatory challenges. If advancements in SMRs and radiation shielding can mitigate these issues, nuclear-powered trains can provide an ultra-long-range, high-efficiency alternative to fossil fuel-based systems.
- **Hydrogen Fuel Cells:** Hydrogen-powered trains are already in operation and provide a promising solution for decarbonisation. The challenge lies in producing hydrogen sustainably; if generated using renewable electricity (green hydrogen), this technology can be

Table 1: Comparison of current technology

Technology	Energy Source	Advantages	Challenges
Nuclear Power	Small nuclear reactors	Long operational range, high energy density, zero emissions	Safety concerns, high initial cost, public perception
Hydrogen Fuel Cells	Hydrogen gas	Zero emissions, high efficiency, longer range than batteries	Hydrogen production complexity, storage challenges
Maglev Technology	Electromagnetic propulsion	High-speed capability, energy-efficient, minimal wear and tear	High infrastructure costs, requires specialised tracks
Battery-Electric Hybrid	Lithium-ion or solid-state batteries	Zero direct emissions, regenerative braking, flexible operations	Battery weight, limited range, charging infrastructure
Diesel	Diesel Fuel	Reliable, established infrastructure, long range	High carbon emissions, reliance on fossil fuels
Electric	Overhead Electric lines or Third Rail	Energy-efficient, no direct emissions, high-speed capable	Requires extensive electrification infrastructure, limited by track electrification

a viable clean alternative to diesel trains. However, infrastructure for hydrogen storage and refuelling remains limited.

- **Maglev Technology:** Magnetic levitation is one of the most energy-efficient propulsion methods, eliminating friction and enabling high-speed travel. While maglev systems do not produce direct emissions, they require substantial infrastructure investments and can only be implemented on dedicated tracks, limiting their widespread adoption.
- **Battery-Electric Hybrid:** This technology is particularly useful for trains operating on non-electrified tracks. Battery-electric hybrids leverage renewable electricity, regenerative braking, and energy storage solutions. The primary challenge is battery weight and charging infrastructure, but advancements in solid-state batteries may enhance feasibility.
- **Diesel Trains:** While still widely used, diesel trains are increasingly being phased out due to their high carbon emissions and reliance on fossil fuels. Many rail operators are seeking to replace diesel locomotives with cleaner alternatives such as hydrogen or battery-electric systems.
- **Electric Trains:** One of the most energy-efficient rail technologies, electric trains can be fully powered by renewable sources if integrated into a green energy grid. However, their dependence on overhead lines or third rails limits deployment in areas without electrification infrastructure.

The Future

Despite the challenges, nuclear-powered trains can become a reality if technological advancements address safety and regulatory concerns. Some future developments that can accelerate nuclear train adoption include:

- **Advanced Radiation Shielding:** New materials with superior shielding properties can make onboard nuclear reactors safer for passengers and railway workers.
- **Automated Safety Systems:** AI-driven monitoring and automatic shutdown systems can ensure the safe operation of nuclear-powered locomotives.
- **Public Engagement & Policy Support:** Governments and organisations advocating for cleaner transport may invest in nuclear rail technology if it proves to be the most efficient and viable solution for long-haul freight and passenger travel.

The future of railway technology is centred on advanced propulsion systems that balance efficiency, sustainability, and practicality. Nuclear-powered trains offer a high-energy alternative with long-range capabilities, but the challenges related to safety, cost, and public acceptance make them a difficult proposition in the near term. However, advancements in small modular reactors, molten salt reactors, and thorium-based nuclear technology can make nuclear-powered trains a feasible solution in the coming decades.

While alternative technologies such as hydrogen fuel cells, superconducting maglev, and battery-electric hybrids present promising solutions, nuclear propulsion remains a compelling option for high-speed, long-distance rail travel. As global efforts to reduce carbon emissions continue, railway engineers and policymakers must carefully evaluate nuclear energy as a potential game-changer in the railway industry. The next generation of rail transport may very well include nuclear-powered locomotives, driving the industry towards a cleaner and more efficient future. ■

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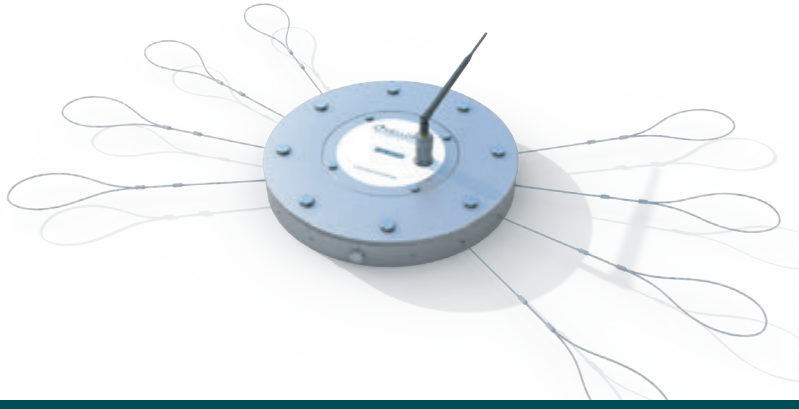

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Bridging Science and Practice: UKM-IWK Joint Innovation in Biosensors

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Academia-industry collaboration often serves as a cornerstone in the development of innovative technologies that address real-world challenges. Since 2020, Universiti Kebangsaan Malaysia (UKM), through its research teams at SELFUEL and the Faculty of Engineering & Built Environment (FKAB), has actively partnered with Indah Water Research Centre (IWRC) under Indah Water Konsortium Sdn Bhd (IWK). This long-term collaboration focuses on the development of microbial electrochemical biosensor technology aimed at improving the efficiency of wastewater quality monitoring, reducing toxicity levels, and enhancing the overall performance of wastewater treatment plants.

Generating Solutions Through Bioelectrochemistry

Figure 1 illustrates how UKM sparked the idea for producing the biosensor to address the challenges faced by the industry. This biosensor technology offers an innovative solution for the wastewater treatment industry, particularly in addressing challenges faced by IWK such as uncontrolled wastewater discharges and constraints in optimising treatment processes. By integrating an IoT-based biosensor, this system enables real-time water quality monitoring, providing immediate notifications in the event of pollution or abnormalities in wastewater treatment.

Through joint development, field testing, knowledge transfer, and long-term application, this technology ensures more comprehensive monitoring and improves treatment efficiency. As a result, wastewater treatment plants can be better controlled, reducing the risk of pollution and enhancing the effectiveness of treatment systems, in line with the need for sustainable and resilient water resource management.

The biosensor that UKM researchers developed utilises innovative microbial electrochemical technology. By harnessing the principles of electrode-microbe interaction, this biosensor functions as a real-time monitoring tool sensitive to changes in parameters within wastewater. It is not only capable of detecting toxins that can potentially disrupt treatment processes but it also acts as an early warning system to prevent costly and time-consuming treatment plant shutdowns.

Monitoring wastewater quality is a primary necessity to ensure compliance with environmental standards and to reduce pollution. Although conventional methods such as Chemical Oxygen Demand (COD) and Biochemical Oxygen Demand (BOD_5) have long been used, these have key limitations, require regular manual sampling by personnel, followed by lengthy analysis times; all this ultimately contribute to high operational costs.

The UKM biosensor offers an innovative solution with the ability to provide real-time readings, automatic operation without chemical reagents, and continuous monitoring through the integration of IoT. It is capable of monitoring critical parameters such as COD and BOD_5 automatically and consistently, with data obtained through an automatic data logger model. This significantly helps improve the effectiveness of wastewater treatment processes, as shown in Table 1.

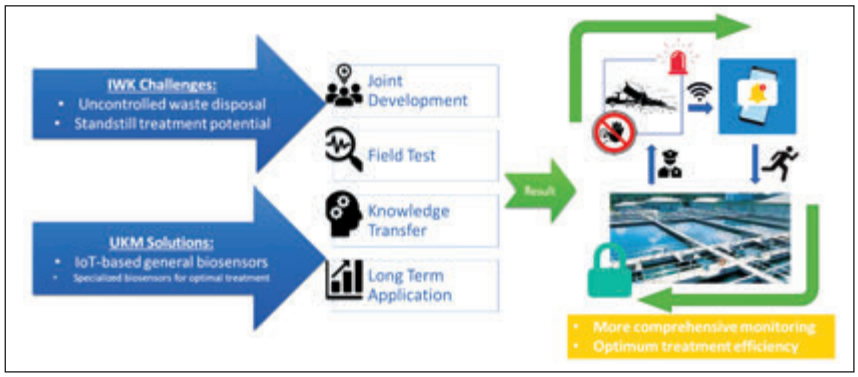

Figure 1: The idea of producing biosensors by UKM researchers to address industry challenges

Table 1: Comparison of analysis methods for COD, BOD_5, and microbial electrochemical-based biosensors

Parameter	COD (Chemical Oxygen Demand)	BOD_5 (Biochemical Oxygen Demand)	Microbial Electrochemical-Based Biosensor
Analysis Method	Chemical oxidation using a strong oxidising agent (e.g., potassium dichromate) in an acidic environment.	Use of microorganisms to decompose organic matter in wastewater for 5 days at 20°C.	Using electrogenic microorganisms that generate an electric current when organic matter decomposes, providing a direct signal of wastewater pollution.
Analysis Time	Fast, around 2-3 hours.	Slow, takes 5 days.	Very fast, provides near real-time readings.
Chemical/ Biological Waste	Generates hazardous chemical waste (e.g., silver, hexavalent chromium, mercury) that requires special handling and disposal.	Does not involve toxic chemicals like COD, but produces biological waste that must be properly managed.	Minimal to no chemical waste, offering a cleaner and more sustainable alternative.
Cost	Higher due to the use of expensive chemicals such as COD reagents.	Lower but requires a long period for analysis.	Higher initial cost but cheaper long-term operation because no chemicals and reagents are required.
Procedure	1. Wastewater sample is mixed with an oxidising agent and heated to high temperature (150°C). 2. The sample is then analysed using a spectrophotometer to determine the concentration of decomposed matter.	1. Sample is placed in a BOD bottle and tightly closed after filling with a special medium. 2. Sample is incubated at 20°C for 5 days before the dissolved oxygen (DO) concentration is measured.	1. Installation of biosensors and cables according to the suitability of strategic locations that can represent the actual wastewater conditions. 2. Installation of a data monitoring system in a location that can be easily monitored.
Note	If the sample exceeds the range of the reagent kit, the analysis must be repeated using a kit with the appropriate range to obtain accurate readings.	The entry of oxygen from the air into the BOD jar may cause inaccuracies in the measurement, thus affecting the analysis results.	The biosensor only needs to be installed once, without the need for continuous monitoring, as notifications will be sent automatically based on the set warning range.

The main advantages of the biosensor include:

1. Real-Time Monitoring: Provides immediate data on wastewater quality, enabling rapid response to any changes or pollution.
2. Automatic Operation: Reduces dependence on human labour and chemical reagents, thereby lowering operating costs.
3. IoT Integration: Enables continuous monitoring and systematic data collection, which facilitates long-term analysis and management.

With the combination of microbial electrochemical technology and IoT, this biosensor not only enhances monitoring efficiency but also reduces operating costs and accelerates responses to pollution. This makes it a crucial tool in the wastewater treatment and environmental monitoring industries, while contributing to sustainability and compliance with stringent environmental standards.

Current Progress & Outcomes

Laboratory prototype and Site application: UKM initiated the project by exploring microbial electrochemical sensing as a tool for real-time wastewater monitoring. Early research used dual- and single-chamber systems to test living microorganisms as biocatalysts in controlled lab conditions. The biosensor then evolved through three key phases:

1. Lab-scale proof of concept using chamber-based designs.
2. Tubular system redesign with an open-air cathode to simplify the structure and reduce flow resistance.
3. Field deployment in real wastewater environments.

In partnership with IWK and IWRC, the sensor advanced from Technology Readiness Level (TRL) 3-4 to TRL 5-6:

- TRL 3-4: Sensor calibration and performance optimisation in the lab, including integration with a cloud-based data system.
- TRL 5-6: Full deployment at wastewater treatment sites for continuous, autonomous monitoring and real-time data transmission.

The biosensor now operates with remote monitoring, automated control, and real-time alert functions, demonstrating its readiness for broader application in environmental and wastewater management.

Quality Monitoring & Irregularity Detection

Laboratory studies were first conducted to understand how microbial fuel cells (MFCs) behaved under different environmental conditions. These included exploring microbial growth and electrochemical signals in various media.

Initial efforts focused on selecting electrode materials that support microbial activity and efficient electron transfer. Figure 2(a) shows the enrichment process and material screening, where graphene and carbon-coated electrodes improve interaction between microbes and the electrode surface. Figure 2(b) presents calibration results, confirming that carbon-based electrodes offer the best sensitivity and reliability in wastewater applications.

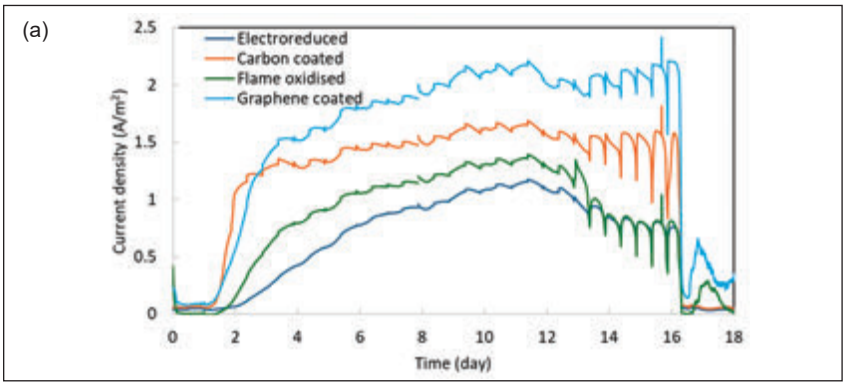

Figure 2: (a) Enrichment and material screening for suitable anode surfaces to optimise bacteria–electrode interaction and electron transfer using a dual-chamber MFC system (b) Calibration results demonstrating sensor performance and detection limits for various electrode materials; carbon-based surfaces showed the most promising outcomes

To simplify the sensor for real-world use, a new design using a tubular setup and membrane-electrode assembly (MEA) with an open-air cathode was developed. Figure 3(a) illustrates this setup and shows early enrichment using different cathode catalysts. Figure 3(b) shows Pt/C-based cathodes deliver the best performance, as supported by electrochemical analysis, ensuring strong microbial signals and sensor stability.

Following laboratory success, the biosensor reached TRL 3-4, with stable performance in dual- and single-chamber MFC systems. The project then advanced to TRL 5 during field testing at IWRC, using actual domestic wastewater. Figure 4(a) shows that the sensor maintained reliable signals, comparable to commercial systems.

In practice, the biosensor effectively detected daily fluctuations in wastewater quality, as shown in Figure 4(b). This included recurring drops in signal during late mornings, followed by recovery later in the day. The fast response indicated strong potential as an early warning tool for real-time environmental monitoring, especially for detecting illegal discharges or process disturbances.

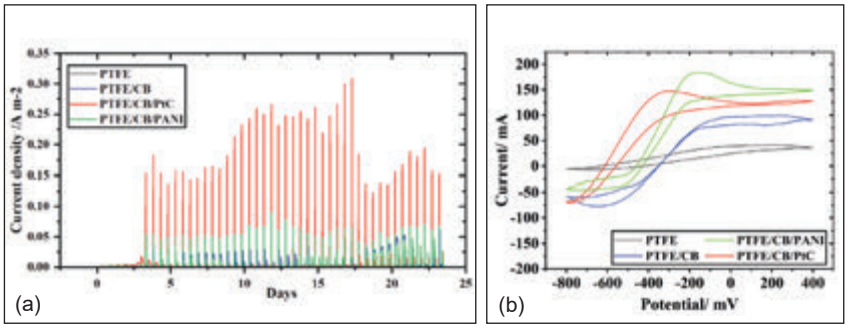

Figure 3: (a) Enrichment of a simplified tubular-type MFC biosensor with a streamlined MEA and open-air cathode; catalyst screening was conducted to identify optimal cathode materials
(b) Electrochemical analysis comparing biosensor performance with different cathode catalysts, confirming Pt/C as the most effective for sensor enrichment and signal stability

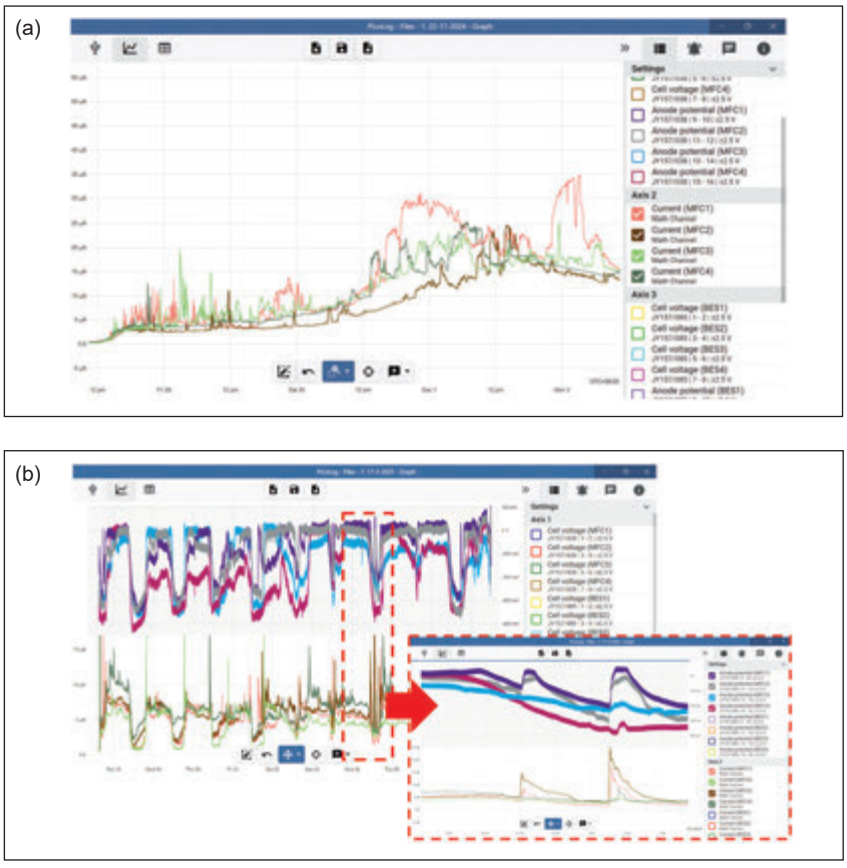

Figure 4: Irregularity repeating signal dropped everyday around late morning causing anode potential and current signals to drop further before recovered at early evening

For additional details, please refer to the publications cited in the References section.

Future Perspectives & Development

The project is now advancing from TRL5 to TRL6, focusing on real-world field validation. This includes long-term testing, system upgrades, and fine-tuning the biosensor for reliable performance in various environmental conditions.

Current improvements involve:

- Strengthening the cabling and setup for stable outdoor deployment.
- Integrating IoT features for remote monitoring, alerts, and cloud-based data access.

Close collaboration with IWK and IWRC has ensured that the sensor design fits practical, on-site needs. Technical meetings and feedback sessions with IWK's R&D and operations teams have helped shape its hardware and software development.

While the biosensor's early detection of irregularities such as illegal discharges has been proven, it also offers broader potential, including:

- Supporting existing monitoring in treatment plants.
- Continuous sensing in rivers, lakes, and catchments.
- Temporary or remote locations where manual sampling isn't feasible.

It's important to note that MFC-based biosensors are complementary tools. They won't replace lab tests but can reduce reliance on manual sampling by offering real-time alerts that guide further action. Standard analytical methods remain essential for verification and compliance.

In the future, this biosensor system could play a major role in Malaysia's smart water and sustainability goals, contributing to urban resilience and environmental protection.

Impact on Industry, Environment & Society

This project directly supports several Sustainable Development Goals (SDGs):

- SDG 6: Clean Water and Sanitation. Enables better wastewater monitoring using sustainable and eco-friendly technology.
- SDG 9: Industry, Innovation, and Infrastructure. Promotes green innovation in water monitoring and the wastewater sector.
- SDG 11: Sustainable Cities and Communities. Helps reduce pollution risks, protecting ecosystems and public health.

Aligned with the tagline, New Life for Water, the project highlights a national commitment to responsible, innovative water resource use — benefitting the environment, industry, and society. ■

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Mechanical Engineering Symposium 2024

by:

Ir. Tony Cheng Yew Leong

Organising chairman Ir. Tony Cheng Yew Leong giving his welcome speech

In conjunction with the ENGINEER 3rd Engineering Exhibition & Conference 2024 (an event of IEM Convention & MARVEX Exhibition), the Mechanical Engineering Technical Division (METD) took on the challenge to organise a one-day symposium to celebrate the involvement and contributions of engineers, particularly in the Building Services Industry.

The Mechanical Engineering Symposium 2024, with the theme, Building Services Solutions: Sustaining Futures & Embracing ESG, was held at the Kuala Lumpur Convention Centre on 21 September 2024.

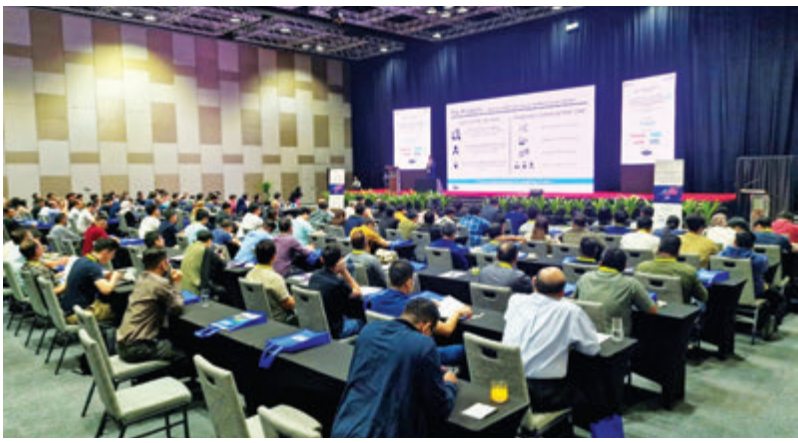
It started at 8.45 a.m. with a welcome address by the organising chairman, Ir. Tony Cheng Yew Leong, and then by the METD Chairman, Ir. Dr. Aidil Che Tahir. IEM Deputy President Ir. Yau Chau Fong gave a short keynote address as well.

A heartfelt thank you goes to our Gold Sponsor, Camfil Malaysia Sdn. Bhd., our Silver Sponsors, Kamstrup Asia Pacific Sdn. Bhd., Bacfree Malaysia Sdn. Bhd., KONE Malaysia Sdn. Bhd. and Promat Sdn. Bhd., as well as our Bronze Sponsor, Carrier Malaysia Sdn. Bhd.

We hope this collaboration paves the way for future opportunities, especially in the fields of mechanical engineering and building services. Their support has been instrumental in enhancing the technological knowledge shared with our participants while ensuring cost-effective solutions for all.

Participants included developers, consultants, manufacturers, contractors, suppliers, building owners, facility managers, property managers, and university representatives. Approximately 170 attendees filled the hall at Level 3 of KLCC, marking the inaugural Engineering Symposium organised by IEM.

The national-level symposium offered an opportunity to build business relationships through the exchange of ideas, the latest trends, and techniques related to implementing building services solutions, methods, approaches and digitalisation within the building sector. Technical experts gave their views and opinions on the current building services solutions to boost the construction sector, emphasising the importance of integrating sustainable practices, modern technologies, and efficient design strategies to optimise building performance and to reduce operational costs.



Managing a large, exclusive audience in Exhibition Hall 7B

One of the most exciting moments was when the audience had the opportunity to explore and experience product solutions first hand at the KLCC Exhibition Centre as live demonstrations were available at the various booths. This added value to the symposium, which ran concurrently with the ENGINEER MARVEX exhibition.

Group photo session with some of the attendees

Speakers from the building services industries gave impressive presentations to the audience. The first speaker, Ms. Jessica Jong, head of sustainability and quality assurance at Sunway Malls, shared impressive mall services solutions.

Then Mr. Lee Jong Jin, Life Cycle & Digital Solutions Leader at Carrier Malaysia, presented on AI, IoT, and cloud technology that revolutionised building management systems.

Air filtration systems play an important role in the indoor air quality by removing harmful particles and pollutants from the air. This was presented by Mr. K.C Lee, Senior Manager from Camfil Malaysia Sdn. Bhd., who gave an insight into improving both health and comfort in indoor environments.

Ir. Lum Youk Lee explored the intricate relationships between energy consumption, rental costs, operational efficiency, and their collective impact on businesses.

Poontrika Walton presented a comparison between performance-based design (PBD) and the conventional prescriptive-based approach, explaining how PBD can more effectively and realistically safeguard building users.

Ir. Siow Jat Shern talked about the importance of Mechanical, Electrical, and Plumbing (MEP) systems in the development of green data centres. He outlined strategies for integrating sustainability to boost energy efficiency, lower carbon emissions, and ensure reliability.

Mr. John Cha, Regional Technical Manager at Promat Asia, shared his expertise on passive fire protection for data centres. He highlighted the importance of data centres and expressed concern that any fire incident in these facilities could cause immediate physical damage to both the infrastructure and equipment.

Mr. Terence Teoh, Head of Sustainability at Bacfree Group Malaysia, presented strategies for rainwater harvesting. He explained how utilising harvested rainwater as an alternative water source could help mitigate risks faced by businesses while contributing to the social pillar of ESG initiatives.

Mr. H.S. Yeo, Head of Services and Modernisation at KONE Elevator, presented on cutting-edge intelligent control systems designed to monitor, assess, and predict elevator performance.

There was a Q&A session after each speaker's presentation, allowing for interactive knowledge sharing between the audience and industry experts. This facilitated valuable exchanges of insights from both building professionals and attendees.

Special thanks go to our moderator, Ir. Dr. Sara Lee, for expertly guiding the sessions, fostering engaging discussions, ensuring seamless transitions between presentations, and facilitating insightful Q&A exchanges between speakers and the audience. ■

Committee members (from right): Ir. Tan Chew Peng, Mr. Kho Tuck Sing, Ir. Dr. Hasril Hasini, Ir. Tony Cheng, Ir. Ricky Liew Chee Leong, Dr. Ravinthran Mariappan and Ir. Dr. Sara Lee Kit Yee

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Engineering Shopping Malls VI: Pioneering Sustainability, Innovation, and Safety in Retail Spaces

by:

Mr. Kho Tuck Sing

The world of shopping malls is evolving rapidly, with sustainability, technology, and safety becoming critical pillars of modern retail spaces. To address these emerging trends, the Engineering Shopping Malls VI seminar was held on February 19, 2025, at Sunway Resort Hotel, Selangor. Co-organised by The Malaysia Shopping Malls Association (PPKM) and Mechanical Engineering Technical Division (METD) of The Institution of Engineers, Malaysia (IEM), the event attracted 85 industry professionals, including engineers, mall operators, and sustainability advocates.

The seminar provided a platform for knowledge-sharing and collaboration, focusing on green building solutions, energy efficiency, electric vehicle (EV) integration, and safety protocols. With a stellar line-up of expert speakers, the event fostered insightful discussions on enhancing mall operations through engineering excellence.

Charting the Future: Key Insights from Industry Leaders

To start the seminar, Ir. Y.L. Lum, Vice President 2 of PPK Malaysia, delivered an insightful session on the Future Outlook for Shopping Malls in 2025. He highlighted the need for retail spaces to evolve by integrating smart technology, experiential retail, and sustainability initiatives to remain competitive amid shifting consumer behaviours. His session set the stage for discussions on how engineering solutions can drive mall modernisation.

Energy Efficiency

Then Mr. Alvin Chan, Senior Technical Manager at Source Code Asia, outlined a five-step approach to retrofit air handling units (AHUs) in malls. His presentation focused on assessing current inefficiencies in AHU performance, implementing smart controls and energy-efficient components, and reducing operational costs while enhancing indoor air quality. His session provided practical strategies for mall operators to optimise HVAC systems, reduce energy waste, and improve sustainability metrics.

Ir. Lum kicked of the PPK Seminar with an insightful 2025 Outlook for Malaysian Shopping Malls Industry

This full house event was attended by shopping mall operators and industry practitioners from whole over Malaysia with the main objective of improving the shopping experience for all

Panelists from the renown industry practitioners and specialist sharing their experience and thoughts moderated by Ir. Dr. Ricky Liew, METD Chairman, 2024/2025

Sustainability

Sustainability was the subject of Mr. Ryan Lai's session, which explored water management as a key driver in lowering the carbon footprint of a mall. Representing the BACFREE Group Malaysia, his talk centred on rainwater harvesting and greywater recycling for efficient water use, eco-friendly plumbing solutions that enhance resource conservation, and government incentives supporting sustainable water management. His insights demonstrated how strategic water conservation efforts can lead to long-term operational savings while benefiting the environment.

Ms. Jessica Jong, Head of Sustainability and Quality Assurance at Sunway Malls, addressed the financial and operational challenges of sustainability initiatives. She talked about how Sunway Malls had implemented energy-efficient lighting, cooling, and waste management systems, strategies to balance environmental responsibility with cost-effectiveness, and the importance of stakeholder engagement in driving green initiatives. Her presentation underscored that sustainability was not just an environmental necessity but rather, a long-term business strategy.

Mr. Ben Ng, General Manager at ESD GreenTech, presented an in-depth case study on 1 Utama's journey towards sustainable mall operations. His session covered solar energy adoption and renewable power integration, advanced waste management and recycling technologies, and innovative cooling systems that reduce carbon emissions. By sharing 1 Utama's real-world strategies, he demonstrated that shopping malls could successfully transition towards greener operations.

EV Charging Stations

With electric vehicles (EVs) growing in popularity, Mr. Bruce Sui, Head of Business Development at Chargesini, said shopping malls have to invest in EV charging infrastructure. He discussed the growing consumer demand for charging stations in retail areas, revenue-generating opportunities for mall owners through EV services, and best practices for integrating EV infrastructure into commercial properties. His session highlighted the crucial role that malls will play in supporting the EV revolution.

Following this, Ir. Loo Chee Kin, Senior Consultant at Global Risk Consultants, explored the technical and regulatory aspects of EV charging bay installations. He provided a step-by-step guide on how to set up charging stations safely, with emphasis on compliance requirements, risk mitigation strategies and fire safety and electrical hazard considerations. His presentation reassured mall operators that EV infrastructure can be deployed effectively with the right engineering expertise.

Safety

The most highly rated session was Cdr. (R) Khoo Kah Hooi's presentation on safety management in shopping malls. As Head of the Crime Prevention Unit at Bandar Utama City Centre, he stressed on the importance of crisis management planning for emergencies, fire safety protocols and evacuation strategies, and security surveillance and crime prevention measures. His session resonated strongly with attendees, reinforcing the need for robust safety systems in commercial spaces.

The Engineering Shopping Malls VI seminar proved that innovation, sustainability, and safety were the cornerstones of modern retail spaces. As shopping malls continue to evolve, engineering excellence will play a pivotal role in shaping smarter, more efficient, and environmentally responsible commercial environments. With the increasing interest in sustainability and digital transformation, future editions of this seminar will be instrumental in guiding mall operators, engineers, and policymakers toward a more resilient and forward-thinking retail industry. The road ahead is clear that a smarter, safer, and more sustainable shopping mall is the future, and engineering is at the heart of this transformation. ■

24TH AFEO MID-TERM MEETING

We are pleased to announce that the 24th AFEO Mid-Term Meeting will be hosted by the Vietnam Union of Science and Technology Associations (VUSTA) in Da Nang City, Vietnam, from 5 – 8 August 2025. This prestigious event will bring together engineering organizations from across the ASEAN region to foster collaboration, innovation, and knowledge sharing.

For more details, please visit:
https://www.youtube.com/watch?v=ofWWRjewcWI&themeRefresh=1

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She Engineers, He Supports: Rethinking Roles in a Changing Industry

by:

Ir. Prof. Dr. Zuhaina Zakaria

As part of the week-long celebrations leading up to World Engineering Day on 4 March 2025, the Women Engineers Section of the Institution of Engineers, Malaysia (IEM) hosted a forum titled *She Engineers, He Supports: Rethinking Roles in a Changing Industry*.

Held on 1 March 2025, the forum was one of the opening events in a series of IEM activities running from 1-7 March 2025. Held at Auditorium Chin Fung Kee, Wisma IEM, Petaling Jaya, it brought together nearly 100 IEM members from various sectors, including practising engineers, students, educators, and industry leaders. The event focused on themes of gender inclusivity, leadership, and allyship, offering a timely reflection on how engineering roles were evolving in a changing industry landscape.

Moderated by Ir. Prof. Dr. Zuhaina Zakaria, Dean at the Institute of Postgraduate Studies, Universiti Teknologi MARA (UiTM), the forum featured four panelists:

- Ir. Prof. Dr. Jeffrey Chiang Choong Luin, President of IEM.
- Ir. Ts. Irene Lock Sow Mei, Senior Process Engineer, Group Technical Solutions, PETRONAS.
- Ir. Ts. Bibi Sabrena Sakandar Khan, Project Director, Malaysia Airports.
- Ir. Ts. Dr. Harvin Kaur Gurchran Singh, Assistant Professor, Asia Pacific University of Technology & Innovation.

The session began with individual presentations from each panellist, who shared personal experiences, insights, and strategies for change. These presentations laid the groundwork for the lively Q&A session that followed, during which the audience engaged directly with the speakers on issues such as workplace bias, leadership styles, and mentorship.

In his opening remarks, Prof. Dr. Jeffrey Chiang said IEM was fully committed to enhancing gender representation in the engineering sector. He urged male engineers and leaders to become active supporters of inclusivity — through mentorship, organisational reform, and creating enabling environments where women can thrive.

Ir. Ts. Irene Lock Sow Mei shared a compelling personal journey in her presentation, *Breaking Barriers: A Woman's Journey in the Engineering Industry*. Drawing on her experience in the oil and gas sector, she discussed barriers such as unconscious bias and lack of female representation, while advocating for mentorship programmes, flexible workplace policies, and increasing the visibility of women in leadership.

Speaking from the perspective of project leadership, Ir. Ts. Bibi Sabrena shared practical insights on managing large-scale infrastructure projects in male-dominated settings. In her presentation titled, *Women in Leadership: Managing Teams & Overcoming Biases*, she highlighted the importance of confidence, assertiveness,

IEM Women Engineers Section Initiative in Conjunction with World Engineering Day 2025

and creating inclusive team dynamics in managing large-scale infrastructure projects. Her leadership approach emphasised integrity, boldness, and strategic communication as tools to navigate male-dominated spaces.

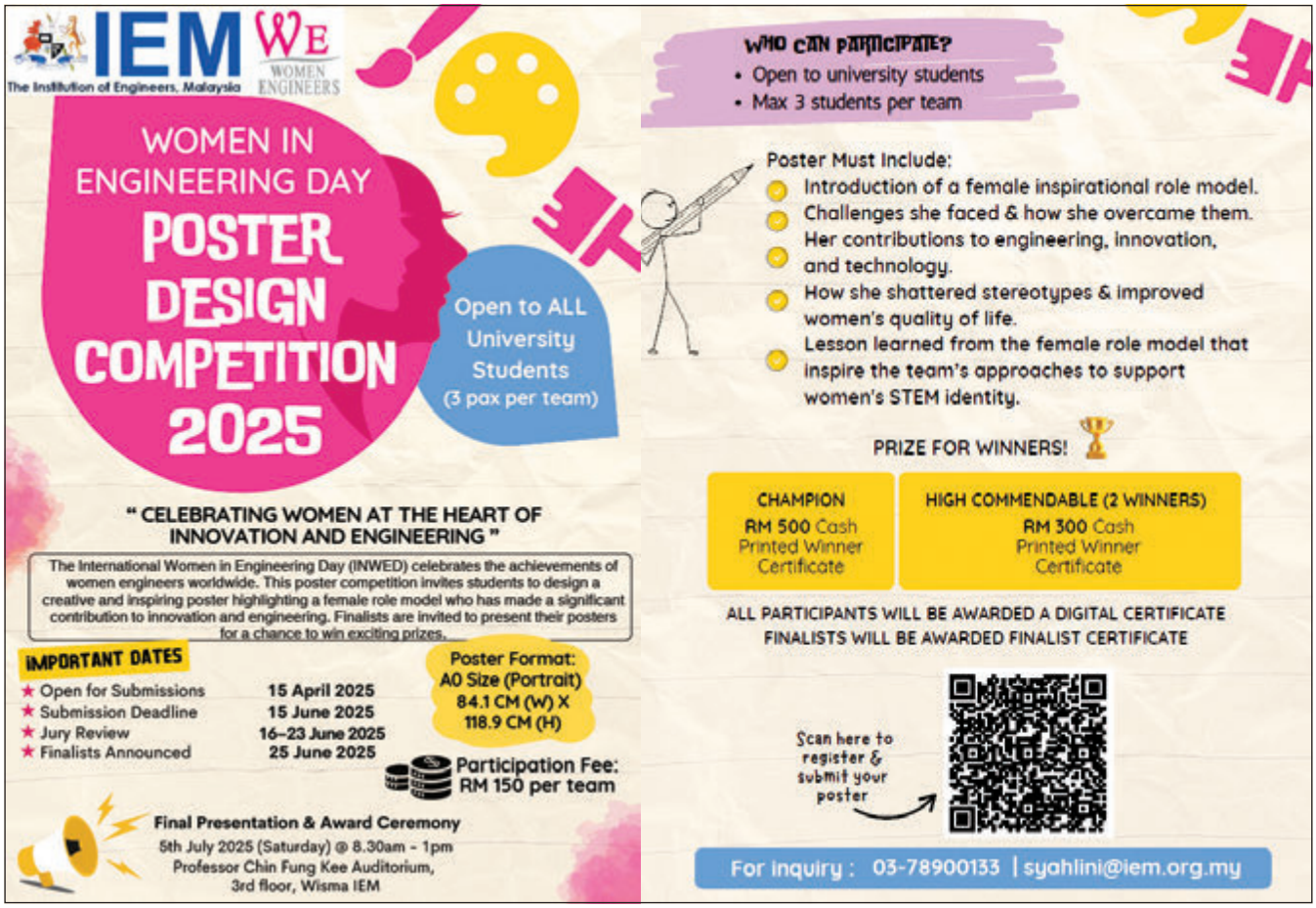
Rounding off the forum was Ir. Ts. Dr. Harvin Kaur, who focused on the future pipeline of women engineers through education. In her talk, *The Future of Women in Engineering: Education, Mentorship & Opportunities*, she presented data on the global and regional gender gap in STEM, noting that currently, women make up only 28% of the global STEM workforce. She called for early STEM exposure for girls, curriculum reform with a gender lens, and more robust university-industry collaborations to support women's transitions into engineering careers.

A moment captured showcasing the enthusiasm and satisfaction of participants following a productive and rewarding session

During the lively Q&A session, participants engaged the four panelists on a range of issues — from breaking stereotypes to building inclusive workplace cultures. The dialogue was rich and resonated deeply with the attendees, reaffirming the need for continued conversations and structural change.

One clear message echoed loudly throughout the session: Gender inclusivity in engineering is not just a women's issue — it is a collective imperative. All stakeholders, from educational institutions to professional bodies, must work together to build a future where engineering talent is recognised and supported, regardless of gender.

With the Women Engineers Section leading the way with initiatives like this, IEM continues to position itself as a driving force for inclusive excellence in Malaysia's engineering sector. It also serves as a call to action for engineers throughout the country to rethink roles, reshape norms, and redefine engineering as a profession where equity, excellence, and collaboration go hand-in-hand. ■



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Koh Samui Airport: Where Unique Functionality Meets Island Beauty

Stepping off the plane into the open concept airport in Koh Samui in Thailand was a pleasant though unfamiliar experience. The design of the airport is a harmonious blend of functionality and the natural beauty of the island.

The open-air terminal buildings feature traditional Thai-style architecture, incorporating natural materials such as wood and bamboo to create a relaxing atmosphere that reflects the island vibe. The design showcases local culture and emphasises a commitment to a sustainability environment.

Taking advantage of the tropical climate, the terminal buildings are strategically designed to optimise natural airflow and natural light for passenger comfort as well as for efficient airport operations. As Koh Samui is one of Asia's top tropical island destinations, the airport is a stunning example of on-growing tourism and preservation of local beauty. ■

Photography by:
Ir. Ts. Nur Azhani
OGMTD Committee Member

IEM
The Institution of Engineers, Malaysia

MALAYSIAN GEOTECHNICAL SOCIETY (PERTUBUHAN GEOTEKNIKAL MALAYSIA)

Jointly Organised between Geotechnical Engineering Technical Division (GETD) & Malaysian Geotechnical Society (MGS)

2ND MALAYSIA GEOTECHNICAL CONFERENCE 2025 (MGC 2025)

DATE : 3-4 DECEMBER 2025
TIME : 9.00 A.M. - 6.00 P.M.
VENUE : GRAND WYNDHAM, BANGSAR

CALLING FOR PAPERS

Conference Themes

We invite submissions on a wide range of topics, including but not limited to:

- Soil Mechanics and Foundation Engineering
- Slope Stability and Landslides
- Ground Improvement Techniques
- Geosynthetics applications in Geotechnical Engineering
- Deep Excavations
- Soil Investigation and Testing
- Environmental Geotechnics
- Pavement Foundation
- Geotechnical Aspects of Sustainable Development
- Case Histories and Practical Applications on Megaprojects

Submission Guidelines

- Abstracts should be no more than 300 words and not exceeding two (2) pages.
- Full papers must be written in English and submitted in Microsoft Word and PDF file format.
- All submissions must be original and not previously published or under consideration for publication elsewhere.
- Papers will be peer-reviewed and accepted papers will be published in the conference proceedings.

Outstanding Paper Award

An Outstanding Paper Award will be presented to the best paper submitted to the conference. The award will recognize exceptional research, innovation, and contribution to the field of geotechnical engineering. The winning paper will be selected by a panel of experts and announced during the conference. The selected paper will also be considered to be published under an International indexed publications, subject to approval by the panel of experts.

Important Dates

Abstract submission deadline	: 28th February 2025
Notification of abstract acceptance	: 31st March 2025
Full paper submission deadline	: 1st July 2025
Notification of paper acceptance	: 15th September 2025
Submission of the presentation slide	: 15th October 2025
Conference day	: 3rd & 4th December 2025

Submission of abstracts/full papers and enquiries:

All abstracts and full papers shall be submitted to the Organising Committee via email to, Ms Aisyah at: mgc2025@gmail.com or Tel: 03-7890 0132.

We look forward to your contributions and to welcoming you to the Malaysia Geotechnical Conference 2025!

Date: 22 May 2025

To all Members,

LIST OF CANDIDATES ELIGIBLE TO SIT FOR THE PROFESSIONAL INTERVIEW FOR THE YEAR 2025

The following is a list of candidates who are eligible to sit for the Professional Interview for the year 2025.

According to the IEM Bylaws, Section 3.8, the names listed below are published as eligible candidates to become Insitution Members, provided that they pass the Professional Interview in 2025.

If there are any Corporate Members who have objections against any candidate deemed unsuitable to sit for the Professional Interview, a letter of objection can be submitted to the Honorary Secretary, IEM. A letter of objection must be submitted within one month from the date of publication.

Ir. Chen Harn Shean
IEM Honorary Secretary

NEW APPLICATION

NAME	QUALIFICATION
CIVIL ENGINEERING	
DANION A/L LEWIS	BE (USM) (CIVIL, 2001)
ELECTRICAL ENGINEERING	
MUHAMAD AMIN BIN ZAINI	BE (UTHM) (ELECTRICAL, 2015)
MECHANICAL ENGINEERING	
SACHIN SHARMA ASHOK KUMAR	BE (WICHITA) (MECHANICAL, 2011) MSc HONS (WICHITA) (MECHANICAL, 2012) PhD (UM) (2023)
AZIZI IRWANDY BIN YAACOB	BE (UTM) (MECHANICAL, 2002)
AHMAD NAZARENE BIN KADRI	BE (SOUTHAMPTON) (MECHANICAL,1999)

MEMBER TRANSFER

MEMBERS NO.	NAME	QUALIFICATION
CIVIL ENGINEERING		
85724	CHE MOHD HILMI SAFIUDDIN BIN CHE JAMALUDIN MAHMUD	BE (UITM) (CIVIL, 2018) MSc HONS (UITM) (CIVIL, 2020)
72603	AL SHARIF BIN SALAZAR	BE (UKM) (CIVIL, 2010)
127549	WAN SENG HONG	BE (CURTIN) (CIVIL & CONSTRUCTION, 2020)
128364	NAZRUL AMIN BIN HASSAN	BE (SOUTH WALES (CIVIL, 2012)
57547	OOI CHEE KWANG	BE (USM) (CIVIL, 2001)
100929	ANG CHUNG CHERN	BE (UTAR) (CIVIL, 2018)
77983	LIM WEN YEE	BE (UTAR) (CIVIL, 2018)
CHEMICAL ENGINEERING		
35654	LIM SWEE SU	BE HONS (UKM) (BIOCHEMICAL, 2008) MSc HONS (UKM) (CHEMICAL) & PROCESS, 2011) PhD (NEWCASTLE) (2019)
47961	MUHAMMAD AZLAN BIN NAZERI	BE (UMP) (CHEMICAL, 2012) MSc HONS (UMP) (CHEMICAL, 2018)
ELECTRICAL ENGINEERING		
129847	CHE AZUAN NIZAM BIN CHE ABDUL RAHMAN	BE (UM) (ELECTRICAL, 2011)
MECHANICAL ENGINEERING		
119015	LUI KAI LUN	BE (MMU) (MECHANICAL, 2018)
31851	LEE SOO EU	BE (USM) (MECHANICAL, 2011)
86191	HON LAI HOONG	BE (LIVERPOOL JOHN MOORES) (MECHANICAL & MANUFACTURING, 2004) ME HONS (UNITEN) (MECHANICAL, 2013)
MANUFACTURING ENGINEERING		
94249	MUHAMMAD KHAIRUL AFFIQ BIN JASRI	BE (UITM) (MECHANICAL, 2015)
MINING ENGINEERING		
116474	MOHD RUZMI KHAIRI BIN RUSLI	BE (USM) (MINERAL RESOURCES, 2007)

LIST OF DONORS TO THE WISMA IEM BUILDING FUND

The institution expresses its gratitude to all who have contributed to the Wisma IEM Building Fund. IEM members and readers who wish to make a donation may do so by downloading the form from the IEM website at *http://myiem.org.my* or by contacting the secretariat at +603-7890 0130 / 136 for further information. The list of contributors for April 2025 is as shown in the table below:

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18	121661	Ms. Koong Gia Ing
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20	86261	Ir. Lock Sow Mei, Irene
21	04511	Dr. Low Chong Yu
22	86590	Mr. Lee Chee Kien
23	11057	Mr. Sapri Ahmad
24	50708	Mr. Mohammad Hafiz Zakaria
25	12608	Ir. Leng Boon Hock

Guidelines for JURUTERA Authors

Overview

The primary objective of JURUTERA is to publish articles of general interest to IEM members. JURUTERA provides reports and news on professional activities, branch activities, and current issues of interest. It also serves as one of the medium of communication between the Institution and its members, providing notices and announcements of IEM.

Articles submitted for publication in JURUTERA must be original, light reading material, unpublished elsewhere, and of interest to IEM members. Technical content should be presented in a readable and accessible style. JURUTERA is published Monthly, and can be viewed in the IEM website.

Technical Articles

1. Since JURUTERA is not a peer-reviewed publication, research articles can be forwarded to the Editor of IEM Journal. However, articles based on research conducted are welcome.
2. A technical article are limited to **2,400 words**. The word count must be reduced appropriately with each additional figure or diagram or photo.
3. The author may be requested to modify the article or to clarify certain points in the article. The Editorial Board reserves the right to edit manuscripts for clarity, readability, length and content.
4. An article should communicate information efficiently and effectively to readers. The prose should follow a coherent line of thought. Sidebars, tables and figures may be used where appropriate. All mathematical equations must be properly checked by the authors themselves, using MS Excel formulae format. It is suggested that all articles have a summary or conclusion. Technical or formal articles may list the references cited using the IEE style.
5. The actual publication of an article is at the sole discretion of the Editorial Board.

Reports on Activities

1. **Each report shall be limited to 800 words:** All reports should be concise and precise in view of the limited publication space. The word count must be reduced appropriately with each additional figure or diagram or photo. As the sizes of such insertions affect their word-countequivalent, it will be left to the judgement of the authors on the number of words to cut. The Bulletin Editor retains the right to edit or further reduce the number of words.
2. **All reports are subjected to selection for publication by the Editorial Board:** To better determine themselves on the suitability of the reports, the Editorial Board is free to seek further advice from parties deemed fit to do so, while avoiding conflict of interest such as asking the same Technical Division to vet their own reports.
3. **Reports on activities should be value-adding to the readership:** For example, reports on talks should be akin to an extended abstract from which readers could get the gist of the talk and the subsequent Q&A. Reports on visits, forums and others shall serve a similar purpose, e.g. highlighting critical observations, issues, resolutions that will be of interest to the readers. Other than the basic information such as title, venue, name and affiliation of the speaker, details which are of little interest to most readers (such as the time of arrival at a destination, presentation of a token of souvenir etc) should be excluded.
4. **A report should preferably be submitted within a month from the date of activity:** Considering that some Technical Divisions have internal vetting process prior to submission, the Editorial Board will not be unreasonably strict with this requirement.
5. Although the Editorial Board will strive to publish the reports in a timely manner, the Editorial Board reserves the right to Schedule to a later date, e.g. to provide room to clear the backlog, or to better fit the theme of the month. Until the backlog is cleared, each issue of JURUTERA will contain a mix of earlier submitted and relatively current reports.
6. It is also the discretion of the Bulletin Editor to decide on the reports to be uploaded in the IEM webportal "Jurutera Online".

Writing Style

1. It is recommended that authors peruse published articles in past issues of JURUTERA to get a feel for the style, format and nature of the articles. A technical article may use a formal style, while an opinion piece may be written in a very casual style. The Editorial Board prefers to refrain from imposing particular styles.
2. Articles should be in U.K. English. Submitted material is expected to be of a high standard.
3. Since articles submitted for JURUTERA are not peer-reviewed, the onus is on the author to ensure that the article is factually correct and the arguments are sound.
4. An article should be written in a clear and direct style. Paragraphs and sentences should be short and easily digestible. Long-winded and tedious technical writing styles must be avoided. Writing is a two-way street; remember that you are writing for an audience that consists largely of both technically-minded trained professionals and budding engineers. The reader should be moved along briskly; reading JURUTERA ought to be an enjoyable and satisfying activity.

Authors

Authors are requested to submit a recent passport-sized photograph together with a brief profile of themselves. Authors are also encouraged to provide keywords for articles submitted.

Submission of Materials

Electronic copies of articles may be sent as attachments to the following e-mail address: *pub@iem.org.my*. Your documents should have meaningful and unambiguous names. Large documents may be sent compressed using the ZIP archive format and should be sent as separate attachments.

Photographs and Illustrations

All photographs should be of high quality, ready for typesetting. Image files should be in JPG/JPEG format, and of a high resolution (at least 300 DPI.) Drawn illustrations must be of high quality, as they will be used "as is". All figures, tables, graphs and photographs must be rightly captioned.

Fair Use of Copyrighted Material

It is necessary to adopt a conservative policy on the fair use of copyrighted material. The Editorial Board reserves the right to reject articles that exercises the doctrine of fair use in an excessive manner. It is up to the author to obtain permission, if necessary, for the use of copyrighted material.

Use of Proprietary Material

An article must not overtly promote a proprietary or commercial product. Such articles will be immediately rejected. Proprietary material such as trade names and proprietary terms should be avoided. Prose that seems advertorial in nature is unwelcome. An objective and balanced technical discussion involving commercial products is acceptable.

IEM JURUTERA Editorial Board
Rev 3 June 2006, June 2011
Rev 4 September 2013
Rev 5 February 2021
Rev 6 January 2025

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What are the main activities of your organisation? *(Tick all that apply)*

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- ☐ Pipelines/refineries
- ☐ Structures/steel work
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- ☐ Housing
- ☐ Construction management
- ☐ Deep mining

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- ☐ Cement
- ☐ Other construction materials
- ☐ Distribution
- ☐ Construction equipment
- ☐ Construction materials
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ADMISSION /ELECTION/ TRANSFER MEMBER

The **445th** IEM Council meeting on **14 March 2025** had approved **954** members for admission/election and transfer of membership grades. The following are members name list according to engineering discipline:

DISCIPLINE	MEMBERSHIP GRADE								
	MEMBER	SENIOR GRADUATE	GRADUATE	ENGINEERING TECHNOLOGIST GRADUATE	INCORPORATED	AFFILIATE	ASSOCIATE	STUDENT	TOTAL
Aeronautical								1	1
Material								7	7
Biotechnology	20	1	13					118	152
CAD/CAM	19	3	54		1	1		143	221
Electronic			1					7	8
Instrumentation	18	3	34				1	80	136
Integrated								107	107
Instrumentation & Control	3	3	5					20	31
Computer		1							1
Communication & Electronic								1	1
Nuclear				1					1
Offshore	1		3					1	5
Manufacturing	1								1
Transport			1					3	4
Production	15	2	35					208	260
Building Services	1	1	5					3	10
Polymer								1	1
System								1	1
Information System			3					2	5
Structural					1				1
TOTAL	**78**	**14**	**154**	**1**	**2**	**1**	**1**	**703**	**954**

Namelist of members and their qualifications as below. The Institution congratulates all the successful members.

Ir. Prof. Dr. Tan Chee Fai
Honorary Secretary, The Institution of Engineers, Malaysia, Session 2024/2025

TRANSFER TO THE GRADE OF GRADUATE MEMBER

M'ship No	Name	Qualification
CIVIL ENGINEERING		
116246	AMIRAH HANISAH BINTI MOHD SUBKI	BE HONS (UM) (CIVIL, 2022)
100234	CHEAH WING HONG	BE HONS (UTHM) (CIIVL, 2021)
31192	Dr. ENG ZI XUN	BE HONS (UM) (CIVIL, 2009) PhD (NATIONAL UNI. OF SINGAPORE) (PHILOSOPHY, 2016)
89360	EONG KANG YU	BE HONS (UTAR) (CIVIL, 2019)
85463	FOO CHUAN FONG	ME HONS (NOTTINGHAM UNI) (CIVIL, 2019)
119103	LEE WEI JIE	ME HONS (NOTTINGHAM UNI) (CIVIL, 2024)
75544	MUHAMAD AZFAR BIN AHMAD	BE HONS (UTHM) (CIVIL, 2018) ME (UiTM) (STRUCTURAL, 2023)
55005	RAJESWARY A/P RAJAN	BE HONS (UTHM) (CIVIL, 2015)
72791	RODIAH BINTI RAZALI	BE HONS (UTP) (CIVIL, 2016)
53067	SITI NUR ATIERAH BINTI PAKRUDIAN	BE HONS (UMS) (CIVIL, 2015)
105904	WAN NUR DANISH WAN BIN NORBADI	BE HONS (MONASH) (CIVIL, 2022)
61840	WONG MUNN SUN	BE HONS (UTHM) (CIVIL, 2014)
95346	YII SENG HUA, KELVIN	BE HONS (UNIMAS) (CIIVL, 2019)
COMPUTER ENGINEERING		
112985	GAN AIK TONG	BE HONS (UTeM) (COMPUTER, 2024)
ELECTRICAL ENGINEERING		
62638	LIEW CHIA PING	BE HONS (UTHM) (ELECTRICAL, 2017)
92544	MUHAMAD AMIR IZZUDDIN BIN ZOLKAFLE	BE HONS (UTHM) (ELECTRICAL, 2019)
122915	MUHAMMAD KHAIRUDDIN BIN MOHD ZAIDDY	BE HONS (UiTM) (ELECTRICAL, 2023)
105270	NURAFENDI BIN SHAHAROM	BE HONS (UTM) (ELECTRICAL, 2024)
107746	WONG YAN BIN	BE HONS (UTAR) (ELECTRICAL & ELECTRONIC, 2023)
MANUFACTURING ENGINEERING		
26042	AZMAN HAFIZ BIN HJ ABDUL MAJID	BE HONS (UTeM) (MANUFACTURING PROCESS, 2006)
86926	MAZLAN BIN ZAINAL	BE HONS (UKM) (MANUFACTURING, 2016)
MECHANICAL ENGINEERING		
118403	AMIEL MALIK BIN ZULFITRI	BE HONS (MONASH) (MECHANICAL, 2023)
77938	LEONG SHI JIA, ELVIS	BE HONS (UTAR) (MECHANICAL, 2017)
119641	LOO SUK SIN	BE HONS (UMP) (MECHANICAL, 2024)
94465	MOHAMAD SHUKRI BIN MOHD ZAINI	BE HONS (UKM) (MECHANICAL, 2021)
84445	MOHD FAZZLAN BIN MAHMUDIN	BE HONS (UTM) (MECHANICAL, 2019)
75815	MOHD. SAYYID MU'AMMAR BIN MOHD. YATIM	BE HONS (UiTM) (MECHANICAL, 2017)
31455	MUHAMMAD ZULFADLI BIN IBRAHIM	BE HONS (UiTM) (MECHANICAL, 2011)
96168	PANG HUNG YONG	BE HONS (UTAR) (MECHANICAL, 2020)
80215	SIRAJVIND WIMALA SURIYA A/L IRVING WIMALA SURIYA	BE HONS (NILAI UNI.) (MECHANICAL, 2020)
125114	THAM KAI JUN	BE HONS (UMP) (MECHANICAL, 2024)
MECHATRONICS ENGINEERING		
88285	NABILAH SYUHADA BINTI ISHAK	BE HONS (IIUM) (MECHATRONICS, 2018) ME HONS (UM) (INDUSTRIAL ELECTRONIC & CONTROL, 2020)

TRANSFER TO THE GRADE OF GRADUATE MEMBER

M'ship No	Name	Qualification
CHEMICAL ENGINEERING		
42768	ALIF AZWAN BIN ABDUL WAHAB	BE HONS (UiTM) (CHEMICAL, 2010) MSc (UiTM) (CHEMICAL, 2017)
90376	LEE WUI SIANG, WILSON	BE HONS (CURTIN) (CHEMICAL, 2008)
49370	LIEW SHAN QIN	BE HONS (UTAR) (CHEMICAL, 2011) MSc HONS (UPM)(BIOPROCESS & FOOD ENGINEERING, 2015) PhD (UM) (2019)
CIVIL ENGINEERING		
117056	AHMAD SYAKIR BIN ZAKARIA	BE HONS (UTM) (CIVIL, 2017) ME (UTM) (STRUCTURE, 2019)
72183	ANWARUL ADZIZI BIN ADENI	BE HONS (USM) (CIVIL, 2004)
30143	JEGATHISH A/L KANADASAN	BE HONS (UNITEN) (CIVIL, 2011) PhD (UM) (2016)
71969	LEE JIA RONG	BE (UTP) (CIVIL, 2018)
24367	LEE SIONG WEE	BE HONS (UTM)(CIVIL, 2003) ME HONS (UTM)(CIVIL & STRUCTURE), 2005)
108031	LEE WEI LOON	BE HONS (SEGi)(CIVIL, 2013)
60607	MOHAMAD AFIQ BIN MOHAMAD SAID	BE HONS (UTHM) (CIVIL, 2013)
68987	MOHAMED EMIERUL QAZZARUL BIN KHIR JOHARI	BE HONS (UiTM) (CIVIL, 2015) MSc HONS (USM) (STRUCTURAL ENGINEERING, 2017)
111153	MOHD HAMZI BIN ABDULLAH	BE HONS (UiTM) (CIVIL, 2012)
69117	NOOR ASYIQIN MOHD SIDEK	BE HONS (UiTM)(CIVIL, 2015) MSc HONS (UiTM) (SCIENCE & STRUCTURAL, 2017)
57098	RAMES KUMAR A/L SHANMUGAM	BE HONS (UTHM) (CIVIL, 2010) MSc HONS (UTM) (CONSTRUCTION MANAGEMENT), 2015)
87380	SYARIZAD BIN SALIM	BE HONS (UTM) (CIVIL, 2015)
55057	TAN SOCK FUNG	BE HONS (UTHM)(CIVIL, 2016)
22591	TAN WEI CHING	BE HONS (USM)(CIVIL, 2000)
107637	TAN WENG SOON	BE HONS (USM) (CIVIL, 2000)
85950	YEO PONG WEE	BE HONS (MELBOURNE) (CIVIL, 2009) ME (MELBOURNE) (STRUCTURES, 2010)
ELECTRICAL ENGINEERING		
40144	ABDUL RAHMAN BIN KAMARUDDIN	BE HONS (UTM) (ELECTRICAL, 2012)
121620	ALDIL YATI BINTI YUSOF	BE HONS (UTM) (BIOMEDICAL, 2009)
118704	ALFRED KUMBAR DAULIN	BE HONS (UMS) (ELECTRICAL AND ELECTRONICS, 2011)
105615	LIM MUN SIENG	MENG (HONS) ELECTRICAL & ELECTRONIC (ENGINEERING)
87149	MOHD FARHAN BIN ABDUL RAHIM	BE HONS (UTM) (ELECTRICAL, 2009)
51598	MOHD FARHAN BIN MOHD SALIM	BE (UiTM) (ELECTRICAL, 2012)
119090	NORAZMAN BIN ABU HASSAN	BE HONS (UiTM) (ELECTRICAL, 2012) ME HONS (UiTM) (ENGINEERING MANAGEMENT, 2017)
127540	NUR AINNA SHAKINAH BINTI ABAS	BE HONS (UiTM) (ELECTRICAL, 2017)
112634	SOLEHIN BIN BAKRIN	BE HONS (UTM) (ELECTRICAL, 2010)

41473	YUGESWARY A/P THURAISAMY	BE (UNITEN) (ELECTRICAL POWER ENGINEERING, 2013) ME HONS (UTM) (ELECTRICAL POWER ENGINEERING, 2018)

ELECTRONIC ENGINEERING

42019	KHAIRUDDIN BIN OSMAN	BE HONS (UTeM) (ELECTRONIC, 2005) ME HONS (UTeM) (ELECTRICAL-MECHATRONICS & AUTOMATION, 2008) PhD (UTeM) (2015)
111332	MOHD SAIDI BIN IDRIS	BE (UTeM) (ELECTRONICS (WIRELESS COMMUNICATION, 2012)
21166	SIVARAMAN RUKUMANGATHA RAJAH	BE HONS (UPM (COMPUTER SYSTEM & COMMUNICATIONS, 2000)

MANUFACTURING ENGINEERING

115928	MOHD NOOR FATHULLAH BIN MOHD NOORDIN	BE HONS (UTeM) (MANUFACTURING - MANUFACTURING MANAGEMENT, 2014)

MARINE ENGINEERING

116222	SARAVANAN A/L VENKADASALAM	DIP (POLITEKNIK UNGKU OMAR) (MARINE, 2001) COC MARINE CLASS 1 (MARINE DEPARTMENT MALAYSIA) (2017)

MECHANICAL ENGINEERING

86575	CHONG KONG HAU	BE HONS (MMU) (MECHANICAL, 2008)
127189	MOHD HISHAMUDDIN BIN MAT YASHIM	BE HONS (UKM) (MECHANICAL & MATERIAL, 2005)
116470	MOHD TARMIDZIY BIN ISHAIK	BE HONS (UTM) (MECHANICAL, 2002)
58916	PRATHABRAO A/L MUNIANDY	BE HONS (UTHM) (MECHANICAL, 2016) ME HONS (BIRMINGHAM) (MECHANICAL, 2018)
116679	SHAHRIL BIN ABD RASID	BE HONS (UTM) (MECHANICAL, 2002)
126101	SOH SHANG QUAN	BE HONS (NEWCASTLE) (MECHANICAL, 2013)
119009	TAN SHIEN MING, PHILIP	ME HONS (NOTTINGHAM) (MECHANICAL, 2016)

TRANSFER TO THE GRADE OF MEMBER (WITH PAE)

M'ship No	Name	Qualification

CIVIL ENGINEERING

102984	AIRIL YASREEN BIN MOHD YASSIN	BE HONS (UTM) (CIVIL 2000) MSc HONS (UTM) (STRUCTURE, 2003) PhD (IMPERIAL COLLEGE) (2007)
45563	CHUA YIE SUE	BE HONS (USM) (CIVIL, 2012) PhD (NUS) (2017)
93852	CLIFF JUDE ZEHNDER	BE HONS (SWINBURNE) (CIVIL, 2015)
127536	FAIZULAZHAR BIN MADZLAN	BE HONS (UiTM) (CIVIL, 2008) MSc HONS (UiTM) (STRUCTURAL ENGINEERING, 2017)
27088	GAN CHIN HUA	BE HONS (USM) (CIVIL, 2008)
37137	GOH WAN INN	BE HONS (UTHM) (CIVIL, 2011) PhD (UTHM) (2015)
35713	MOHAMED FAIRUZ BIN HUSSIN	BE HONS (UTM) (CIVIL, 2010)
37140	MOHD KHAIRUL ANUAR BIN YUSOFF	BE HONS (UTHM) (CIVIL 2011)
22744	MOHD YAZMIL BIN MD YATIM	BE HONS (UKM) (CIVIL & STRUCTURAL, 2006) ME HONS (UTM) (CIVIL, 2009) PhD (UKM) (2014)
23973	NURIYATI ARMIDA BINTI MD RASHID	BE HONS (USM) (CIVIL - CONSTRUCTION MANAGEMENT, 2002)
99385	TANG SENG HOE	BE HONS (UTAR) (CIVIL, 2013)
104293	THAM WAI YANG	BE HONS (USM) (CIVIL, 2016)
55816	WAN MOHD AMZAR BIN WAN MANAN	BE HONS (KLIUC) (CIVIL, 2011)
25810	YONG WEI MING	BE HONS (CANTERBURY) (CIVIL, 2004) ME HONS (CANTERBUR) (TRANSPORTATION, 2005)
108132	ZAID ISKANDAR BIN JARAIEE	BE HONS (UTHM) (CIVIL, 2008)

ELECTRICAL ENGINEERING

116136	GUAN JUEN NAM	BE HONS (UTAR) (ELECTRICAL & ELECTRONIC, 2018)
46869	MOHD HILMI BIN ABDULLAH	BE HONS (UM) (ELECTRICAL, 1998)
52789	MUHAMMAD IRSYARUDIN BIN ALI	BE HONS (UMP) (ELECTRICAL, 2012)
53711	SEZU PATHY A/L MUTHU KARIPPEN	BE HONS (UTM) (ELECTRICAL, 2011)

MECHANICAL ENGINEERING

84497	BRYAN CHAI YEN BOON	BE HONS (UTM) (MECHANICAL, 2019)
93851	JAYEE A/L SREETHARAN	BE HONS (UTM) (MANUFACTURING, 2010)
111606	MOHAMAD BIN MOHAMAD YUSOFF	BE HONS (UTM) (MECHANICAL, 2019)
121100	PUA ZI RUI	BSc HONS (IOWA) (MECHANICAL, 2013)
59207	SYAHRUL RAMADHAN BIN AHMAD KAMAL ARIFFIN	BE HONS (UMP) (MECHANICAL, 2013) MSc HONS (UMP) (MECHANICAL, 2022)

MECHATRONICS ENGINEERING

21672	RAFIUDDIN BIN ABDUBRANI	BE HONS (UniMAP) (MECHATRONIC, 2010) MSc HONS (USM) (ELECTRONIC SYSTEM, 2012)

ELECTION TO THE GRADE OF MEMBER

M'ship No	Name	Qualification

CHEMICAL ENGINEERING

129821	CHANG JANG SEN	BE HONS (UCSI) (CHEMICAL, 2025) PhD (MONASH) (2020)

CIVIL ENGINEERING

129816	JUSTIN NOEL MANIKAM	BSc HONS (UTM) (CIVIL, 2001)

ELECTRICAL ENGINEERING

130264	AHMAD FAIZAL BIN BASRI	BE HONS (UNITEN) (ELECTRICAL POWER, 2009)
130265	MOHD FUAD BIN ABDUL LATIP	BE (UM) (ELECTRICAL, 2001)
129819	NIK HAKIMI BIN NIK ALI	BE HONS (UNITEN) (ELECTRICAL POWER ENGINEERING, 2013) PhD (SOUTHAMPTON) (2017)
129822	SITI NORLINA BINTI RAMLAN	BE HONS (UTM) (ELECTRICAL, 2015)

MECHANICAL ENGINEERING

130261	MOHAMMAD HAFIZ BIN ABDELLAH	BE HONS (UTeM) (MECHANICAL (STRUCTURE & MATERIAL), 2012)
129820	MOHD AKMAL BIN ABU HASSAN	BE HONS (LIVERPOOL) (MECHANICAL, 1997)

ELECTION TO THE GRADE OF MEMBER (WITH PAE)

M'ship No	Name	Qualification

CHEMICAL ENGINEERING

130263	CHIN JIT KAI	BE HONS (SHEFFIELD) (CHEMICAL, 2001) PhD (SHEFFIELD) (2007)

CIVIL ENGINEERING

129818	LIM TEIK HUI	BE HONS (UTM) (CIVIL, 2008)
130262	TEOH JUN SHIN	BE HONS (LEEDS) (CIVIL & STRUCTURAL, 2011) MSc HONS (UiTM) (STRUCTURAL ENGINEERING, 2012)

MECHANICAL ENGINEERING

129817	AHMAD HAZIM BIN MAHADHIR	BE HONS (UNIKL) (MECHANICAL, 2019)

ADMISSION TO THE GRADE OF SENIOR GRADUATE

M'ship No	Name	Qualification

CHEMICAL ENGINEERING

129062	CHOONG LOOH ZHEN	ME HONS (THE UNI. OF MANCHESTER) (CHEMICAL ENGINEERING WITH ENVIRONMENTAL TECHNOLOGY, 2013)

CIVIL ENGINEERING

129826	ALEX TEOH	BE HONS (INITI INTERNATIONAL UNI.) (CIVIL, 2014)
129827	LEONG WAH KON	BE (THE UNI. OF QUEESLAND) (CIVIL, 2005)
129824	VICTOR KHOO BOO LIANG	BE HONS (UNI. OF PLYMOUTH) (CIVIL, 1998)

ELECTRICAL ENGINEERING

129066	MOHAMAD FIRDAUS BIN YUSOP	BE HONS (UiTM) (ELECTRICAL, 2014)
129068	MOHAMMAD NIZAMUDDIN BIN ZAINAL ABIDIN	BE (UMP) (ELECTRICAL ENGINEERING - CONTROL & INSTRUMENTATIONS, 2010)
129825	SENTHAN A/L REGA BOTHY	BE HONS (UNITEN) (ELECTRICAL & ELECTRONICS, 2009)

ELECTRONIC ENGINEERING

129061	GUSMAN TANTRI @ TAN NING	BE HONS (MMU) (ELECTRONICS IN MAJORING IN MICROWAVE AND COMMUNICATIONS, 2007)
129065	NG WAI YIN	BE HONS (THE UNI. OF NEW SOUTH WALES) (ELEECTRICAL, 1991)
129067	SYED HUSSEIN BIN SYED ALWI	Adv. Dip. (UNI. OF TOULOUSE iii) (ELECTRICAL & INDUSTRIAL DATA PROCESSING, MAJOR IN AUTOMATION AND SYSTEMS, 2008) MSc (ESIEE) (ELECTRONICS & ELECTRICAL, 2007) ME (ESIEE) (ELECTRONICS & ELECTRICAL, 2009

FOOD & PROCESS ENGINEERING

129069	Dr SURIANI BINTI MAT JUSOH	BE HONS (UMP) (PROCESS AND FOOD, 2001) MSc (UMP) (INDUSTRIAL AND SYSTEM ENGINEERING, 2007) PhD (UMP) (MATERIAL, 2012)

MECHANICAL ENGINEERING

129063	MUHAMMAD ILMAM AIZAT BIN RUSLI	BE HONS (THE UNI. OF QUEESLAND) (MECHANICAL, 2010)
129823	SYAZWAN BIN SA'EDAN MUKHTAR	BE (SHIZUOKA UNI.) (MECHANICAL, 2010)

MECHATRONICS ENGINEERING

129064	TANG GUO LIANG	BE HONS (UCSI UNI.) (MECHATRONIC, 2013)

ADMISSION TO THE GRADE OF GRADUATE MEMBER

M'ship No	Name	Qualification

CHEMICAL ENGINEERING

129889	CHEW JING YI	BE HONS (UTAR) (CHEMICAL, 2024)
129875	CHONG BOON HONG	BE HONS (UTAR) (CHEMICAL, 2024)
129880	EWE KAI ZHE	BE HONS (UTAR) (CHEMICAL, 2024)
129887	GEETTA A/P SUBRAMANIAN	BE HONS (UTAR) (CHEMICAL, 2024)
129830	INTAN NURANISSA BINTI MOHAMAD ZAILANI	BE HONS (UPM) (CHEMICAL, 2020)
129888	JEE PEI QI	BE HONS (UTAR) (CHEMICAL, 2024)
129835	LAM CHI HANG	BE HONS (UCSI) (CHEMICAL, 2018)
129879	LIM YE KAI	BE HONS (UTAR) (CHEMICAL, 2024)
129464	MOHD AL MUSSA BIN UGAK	BE HONS (UNIMAS) (CHEMICAL, 2020)
129480	ONG SHAO JIE	BE HONS (UMP) (CHEMICAL, 2024)
129472	SITI SUHANA BINTI ABD RAHMAN	BE HONS (UTM) (CHEMICAL, 2018)
129833	TEO PUI KUAN	BE HONS (USM) (CHEMICAL, 2020)
129890	THAM TING WOON	BE HONS (UTAR) (CHEMICAL, 2024)

CIVIL ENGINEERING

129443	AHMAD FAIRUZ BIN ABU BAKAR	BE HONS (UPM) (CIIVL, 2009)
129844	AQILAH SYASYA BINTI MOHD AZIZI	BE HONS (UNITEN) (CIVIL, 2021)
129473	AZWA SAFIQAH BINTI DARAWATI	BE HONS (UMS) (CIVIL 2020)
129854	CHAW KIT TENG	BE HONS (UTP) (CIVIL, 2005)
129460	CHEW YEE JIN	BE HONS (MONASH) (CIVIL, 2023)
129874	CHONG WENG KIAN	BE HONS (UTAR) (CIVIL, 2024)
129465	CHUA YUEN HAUR, DANIEL	BE HONS (MONASH) (CIVIL, 2023)
129479	FATIN NUR FATIHAH BINTI MAZLAN	BE HONS (UTM) (CIVIL, 2015)
129453	HIFZHAN BIN SAIFUL BAHRI	BE HONS (TEESSIDE UNI.) (CIVIL, 2017) MSc (UNI. OF GREENWICH) (CIVIL, 2019)
129456	HO SHUI CHUAN	ME HONS (THE UNI. OF NOTTINGHAM) (CIVIL, 2016)
129859	JASON AARON ANAK HOLLIS	BE HONS (UiTM) (CIVIL, 2023)
129877	LAI JUN KANG	BE HONS (UTAR) (CIVIL, 2024)
129449	LEE JIA YI	ME HONS (HERIOT WATT UNI.) (CIVIL, 2022)
129898	LEE JIEN SHIN	BE HONS (RMIT UNI.) (CIVIL & INFRASTRUCTURE, 2018) ME (RMIT UNI.) (CIVIL, 2020)
129892	LEE LIM FAH, CONSTONTINE	BE HONS (UNIMAS) (CIVIL, 2014)
129466	LEE SZE CHE	BE HONS (CURTIN) (CIVIL & CONSTRUCTION, 2023)
129021	LIM HONG ZHEC	ME (THE UNI. OF MELBOURNE) (CIVIL, 2021)
129864	LOOI KAH CHUN	BE HONS (UCSI) (CIVIL, 2021)
129860	MOHD AMIRUL HAFIZHAT BIN MOHD YAZID	BE HONS (UMS) (CIVIL, 2018)
129481	MOHD SAFAWI BIN AHMAD	BE HONS (UiTM) (CIVIL, 2002)
129440	MUHAMAD KHALID BIN SULAIMAN	BE HONS (UNITEN) (CIVIL, 2014)

129442	MUHD SYAKIR BIN ZAINOL	BE HONS (UiTM (CIVIL - INFRASTRUCTURE, 2017)
129458	NG CHIAN MING	BE HONS (MONASH) (CIVIL, 2008)
129901	NOORSHAHIRA BINTI MD ISA	BE HONS (UiTM) (CIVIL, 2023)
129469	NORHANIFAH BINTI SHARKAWI	BE HONS (UiTM) (CIVIL, 2019)
129838	NURFARHAN FADZLIE BIN NORDIN @ CHE MAT	BE HONS (UMP) (CIVIL, 2024)
129461	NURHAMIZAH BINTI MANAN	BE HONS (UiTM) (CIVIL, 2014) ME (UPM) (ENVIRONMENTAL, 2017)
129451	ONG SHI SHENG	BE HONS (UTP) (CIVIL, 2023)
129060	ONG ZHEN LIANG	BE HONS (UTP) (CIVIL, 2022) MSc (UTP) (CIVIL, 2024)
129876	PUA SHAO YOU	BE HONS (UTAR) (CIVIL, 2024)
129869	RAMANATHAN A/L A.GANAPATHY	BE HONS (UTP) (CIVIL, 2019) ME (UTM) (STRUCTURE, 2022)
129897	SALHADEY BIN SALEH	BE HONS (UTM) (CIVIL, 2001)
129866	SIM TZE YING	BE HONS (SWINBURNE UNI.) (CIVIL, 2023)
129463	TAN CHANG MING, AUBREY	ME HONS (THE UNI. OF MANCHESTER) (CIVIL, 2017)
129446	TAN JIA QI	BE HONS (CURTIN) (CIVIL & CONSTRUCTION, 2024)
129868	TAN KAH MING	ME HONS (NOTTINGHAM UNI.) (CIVIL, 2024)
129871	TENG GUAN WEI, BRENDAN	ME HONS (UCL) (CIVIL, 2024)
129467	TEO CHUNG JING	BE HONS (UTAR) (CIVIL, 2024)
129837	WAN NURUL AKMAL BINTI WAN ABDULLAH	BE HONS (KUTTHM) (CIVIL-CONSTRUCTION, 2006)
129853	WONG FOOK KONG	BE HONS (UKM) (CIVIL & STRUCTURAL, 2010)
129478	ZAHARUDDIN BIN SABANG	BE HONS (UNIMAS) (CIVIL, 2006)

ELECTRICAL ENGINEERING

129447	CHIN SHI YI	ME HONS (HERIOT-WATT UNI.) (ELECTRICAL & ELECTRONIC, 2024)
129468	CHIN SWIN YEE, AMY	BE HONS (SWINBURNE UNI.) (ELECTRICAL & ELECTRONIC, 2015)
129483	CHONG ZENG XI	BE HONS (THE UNI. OF SHEFFIELD) (ELECTRICAL & ELECTRONIC, 2021)
129445	DELREE ARFFEL ANAK JEFFERY ABA	BE HONS (UTM) (ELECTRICAL, 2021)
129444	HEZRONI JOUNIS	BE HONS (UTM) (ELECTRICAL, 2021)
129462	JUN WEI HUA	BE HONS (SWINBURNE UNI.) (ELECTRICAL & ELECTRONIC, 2015)
129471	MUHAMAD ARIF HAKIMI BIN RAMLEE	BE HONS (UNIMAP) (ELECTRICAL, 2023)
129459	MUHAMAD FADILAH BIN MD SALLEH	BE HONS (UNIKL) (ELECTRICAL, 2018)
129482	MUHAMMAD FIRDAUS BIN ZAMURI	BE HONS (UNIMAP) (ELECTRICAL SYSTEM, 2017)
129474	MUHAMMAD IRFAN BIN MOHD ZAMRY	BE HONS (UTeM) (ELECTRICAL, 2022)
129450	NUR RAIHAN BINTI NORDIN	ME HONS (THE UNI. OF MANCHESTER) (ELECTRICAL & ELECTRONIC, 2020)
129470	TUNG SHIH THENG, ASA	BE HONS (UNIMAP) (ELECTRICAL, 2023)
129856	ABDUL HISYAMUDDIN BIN ABD HAMID	BE HONS (UTM) (ELECTRICAL, 2023)
129891	AHMAD MUZAKKIR BIN AHMAD BARHANUDIN	BE HONS (UNIKL) (ELECTRICAL, 2023)
129847	CHE AZUAN NIZAM CHE BIN ABDUL RAHMAN	BE HONS (UM) (ELECTRICAL, 2011)
129878	CHEW JUN HWA	BE HONS (UTAR) (ELECTRICAL & ELECTRONICS, 2024)
129841	HAZIQ HAIQAL BIN ZULKIFLI	BE HONS (UNITEN) (ELECTRICAL, 2021)
129845	IRMA AMALIAPUTRI BINTI YUSOP	BE HONS (UiTM) (ELECTRICAL, 2005) ME (UiTM) (MANAGEMENT, 2022)
129842	MAMAT ZULI BIN AWANG HAMAT	BE HONS (UiTM) (ELECTRICAL, 2005)
129831	MOHAMAD AZZAMUDIN AIMAN BIN AZIZAN	BE HONS (UNIMAP) (ELECTRICAL, 2024)
129843	MOHD HAFIZ BIN JAMIL	BE HONS (UNITEN) (ELECTRICAL POWER, 2008)
129848	MUHAMMAD AMIRUL ASHRAF BIN AB RAHMAN	BE HONS (UNITEN) (ELECTRICAL POWER, 2019)
129829	MUHAMMAD IZWAN BIN RUSLI	BE HONS (UNIMAP) (ELECTRICAL SYSTEMS, 2018)
129846	MUSNIZAM BIN MUSTAPHA	BE HONS (UTM) (ELECTRICAL, 2011)
129863	ROLAND MUNANG	BE HONS (UMS) (ELECTRICAL & ELECTRONICS, 2020)
129850	TEH WHEY CHAI	BE HONS (UM) (ELECTRICAL, 2015)
129870	WONG HOU CHING	BE HONS (UTS) (ELECTRICAL, 2022)
129894	YEE SONG JIAN	BE HONS (UTP) (ELECTRICAL & ELECTRONICS, 2022)
129900	YONG WAI XIANG	BE HONS (UNITEN) (ELECTRICAL POWER, 2024)

ELECTRONIC ENGINEERING

129899	HEMA LOSINI A/P JAYASHANKER	BE HONS (UTHM) (ELECTRONIC, 2024)
129895	MUHAMMAD ALQAYYUM BIN MOHD ARIFIN	BE HONS (UiTM) (ELECTRONICS - COMMUNICATION, 2012)
129457	MUHAMMAD SHARIFF BIN MOHD YUSOFF	BE HONS (UiTM) (ELECTRONICS, 2021)
129867	RUHUL AMIN BIN SAFIEE	BE HONS (UTHM) (ELECTRICAL, 2006)
129832	SITI NUR ASLINDA BINTI MOHD ZAID	BE HONS (UPNM) (ELECTRICAL & ELECTRONIC - COMMUNICATIONS, 2019)

MANUFACTURING ENGINEERING

129484	KAJANE THINAKARAN	BE (REUTLINGEN UNI.) (MECHANICAL, 2020) MSc (NOTTINGHAM UNI.) (MECHANICAL, 2023)

MATERIALS ENGINEERING

129886	CHAI JING YEE	BE HONS (UTAR) (MATERIALS, 2024)

MECHANICAL ENGINEERING

129852	ABDUL MUIZ BIN ABD AZIZ	BE HONS (UPNM) (MECHANICAL, 2022)
129884	CHAN JIA BIN	BE HONS (UTAR) (MECHANICAL, 2024)
129881	CHAN ZI WEN	BE HONS (UTAR) (MECHANICAL, 2024)
129477	HII JIA YIIK, SAMUEL	BE HONS (MONASH) (MECHANICAL, 2019)
129851	LEE KIENG KONG	BE HONS (UTHM) (MECHANICAL, 2007)
129893	LIM HAN YE	ME HONS (UNI. OF LEEDS) (MECHANICAL, 2024)
129883	LOOI WEN XIONG	BE HONS (UTAR) (MECHANICAL, 2024)
129858	MOHAMAD NOOR IZWAN BIN JOHARI	BE HONS (UiTM) (MECHANICAL, 2019)
129849	MOHD FIRDAUS BIN ABU HASHIM	BE HONS (UTeM) (MECHANICAL - THERMAL FLUIDS, 2007)
129836	MUHAMMAD AIMAN BIN MOHD KAMAL	ME HONS (UNI. OF MANCHESTER) (MECHANICAL, 2024)
129896	MUHAMMAD AKMAL BIN ZAINAL	ME HONS (HERIOT-WATT UNI.) (MECHANICAL, 2023)
129857	MUHAMMAD AMIR AISAMUDDIN BIN BADRUL HISHAM	BE HONS (UNIKL) (MECHANICAL, 2023)
129452	MUHAMMAD AZRI SYAHMI BIN MOHAMED KUSNI	BE HONS (UNITEN) (MECHANICAL, 2014)
129834	NUR 'ALIAH BINTI SHAFIEE	BE HONS (UNITEN) (MECHANICAL, 2013)
129476	SAW HONG KEN, NIXON	BE HONS (UTP) (MECHANICAL, 2016)
129873	SAW LI SHENG	BE HONS (UTAR) (MECHANICAL, 2024)
129840	SHAHUL HAMEED BIN MUJIB KAMAL	BE HONS (MONASH) (MECHANICAL, 2022)
129861	SIOW WEN YAO	BE HONS (UTP) (MECHANICAL, 2024)
129455	SRI KRISHEN RUEHAN SRI ANAND	ME HONS (HERIOT-WATT UNI.) (MECHANICAL, 2024)
129441	SYED AIMAN BIN SYED ISMAIL	BE HONS (UNITEN) (MECHANICAL, 2018)
129448	THAM KIN HOOI	BE HONS (UMS) (MECHANICAL, 2007)
129862	VOON YONG KANG	BE HONS (UPM) (MECHANICAL, 2018)
129865	WAN MOHAMAD AMIRUL BIN WAN MOHAMAD YUSOFF	BE (UNI. OF FUKUI) (MECHANICAL & SYSTEM ENGINEERING, 2022)
129475	YAZID IZZUANDI BIN OSMAN	BE HONS (UNIMAS) (MECHANICAL & MANUFACTURING, 2011)
129885	YEE JET SEN	BE HONS (UTAR) (MECHANICAL, 2024)

MECHATRONICS ENGINEERING

129882	CHIN ZHEE MING, CHAVEZ	BE HONS (UTAR) (MECHATRONICS, 2024)
129485	CHOW TZU ERN, ELISE	BE HONS (QUEST INTERNATIONAL UNI.) (MECHATRONICS, 2024)
129839	LIM WAN TING, EVON	BE HONS (SWINBURNE UNI.) (ROBOTICS & MECHATRONICS, 2014)
129872	MUHAMMAD AIMAN BIN NORAZARUDDIN	BE HONS (IIUM) (MECHATRONICS, 2022)

PETROLEUM ENGINEERING

129454	ABDULRAHMAN MOHAMMED SALEH ALTOMI	BE HONS (UTP) (PETROLEUM, 2019)
129855	KARTINA BINTI ALI	BSc HONS (UNI. OF MISSOURI-ROLLA) (PETROLEUM, 1997)
128503	LEONG HOCK TIONG, CHRISTOPHER	BE HONS (UTM) (PETROLEUM, 2021)

ADMISSION TO THE GRADE OF ENGINEERING TECHNOLOGIST GRADUATE MEMBER

M'ship No	Name	Qualification
INTEGRATED ENGINEERING		
129535	NUR SYAZWANI BINTI MD FADILAH	BAppSc HONS (UMK) (GEOSCIENCE, 2015)

ADMISSION TO THE INCORPORATED MEMBER

M'ship No	Name	Qualification
CIVIL ENGINEERING		
129070	MAZLAN BIN ABDUL WAHAP	BE.(NATIONAL INSTITUTE OF ENGINEERING TECH, INDIA) (CIVIL, 2017)
PRODUCTION ENGINEERING		
129601	UMANG SHARMA	BSc.Eng. (PUNJAB UNIVERSITY, INDIA) (PRODUCTION, 1984) M.BA (STRATHCLYDE UNI) (2000)

ADMISSION TO THE GRADE OF ASSOCIATE MEMBER

M'ship No	Name	Qualification
ELECTRICAL ENGINEERING		
129602	G.SANGARALINGAM A/L GOVINDASAMY	DIPL.(MIDAS INSTITUTE) (ELECTRICAL WIRING, 1996)

ADMISSION TO THE AFFILIATE MEMBER

M'ship No	Name	Qualification
CIVIL ENGINEERING		
79263	MUHAMAD RIDUAN BIN ROSLIN	B.TECH. MANAGEMENT HONS. (UTHM) (CONSTRUCTION, 2014)

ADMISSION TO THE GRADE OF STUDENT MEMBER

M'ship No	Name	University
AEROSPACE ENGINEERING		
129631	ALIF ARSHAD MAZALAN	UniKL MIAT
BIO-MEDICAL ENGINEERING		
129049	CHONG JIN CI	UM
129119	HARRISPRASAD A/L SIVA BALAN	UTM
129051	JAMES LYE DITAO	UM
129138	JOVINA SHALOM JAMES A/P SARAVANAN	UTM
129039	LUTFIAH LOW BINTI MUHAMMAD RIDHWAN	UM
129033	SOFIYA IRDINA BINTI MOHD SABRI	UM
129036	TEOH ENXI	UM
CHEMICAL ENGINEERING		
129107	ADLYNN SUFFIYA BINTI HELIYUSAFRI	UIAM
129110	AHMAD HAKIM HANAFI BIN KHAIRUNIZAM	UTM
128788	AISHAH AMIRA BINTI MOHD ZULKIFLI	UiTM SHAH ALAM
129395	ALLEYSYHA BINTI PATRICK	UNIMAS
129077	ALYA QISTINA MOHD FAUZI	UKM
128777	ALYA SOFIA BINTI AZMAN	UiTM SHAH ALAM
129326	AMANDA ABIGAIL ANDY	UNIMAS
129428	AMILIN FARAHIN BINTI RAMZEE	UTM
129690	ANIQ IQBAL BIN ZULKARNAIN	UKM
129742	ANIS SAFIYA BINTI AZHAR	UKM
129383	ANJELYE ESTER ANAK MUDIE	UNIMAS
128790	AVYIANA SHONIA LINTU ANAK MARSON	UiTM SHAH ALAM
129099	BAN YIE XIN	UTM
129117	BERNICE CHEAH HUI EN	UTM
129335	BREANNA KADAS ANAK BERNARD	UNIMAS
128813	BRENDA LIM JIA YEE	USM
129351	CARMEN KIU	UNIMAS
129231	CHAN KE YEE	SUNWAY
129022	CHANG JIAN XIANG	UMPSA GAMBANG
129357	CHARLOTTE GARRETH ANAL ABEL	UNIMAS
129023	CHIEW WEI NEE	UMPSA GAMBANG
129087	CHONG JIA MIN	UKM
129025	CHONG MANXIN	UMPSA GAMBANG
129024	CHOO RONG JIA	UMPSA GAMBANG
129318	CLAIRY TAY CHUNG SIEW	UNIMAS
129668	DAYANG NUR ZULAIKHA BINTI AWANG MORNI	UNIMAS
129748	DENISE KAN WEI KEI	UTM
129347	DERRY AUGUSTINE ANAK UNGGOT	UNIMAS
129391	DIRKNEIL JOTIRIS	UNIMAS
129503	EVELYN ANN ANAK KENEDY	SWINBURNE SARAWAK
129666	FATHIAH NAZWA BINTI SARDON	UNIMAS
129116	FOO SHI YU	UTM
129747	GOH SHAN YING	UTM
129665	HANNIS BATREESYIA BINTI ABDUL AZIZ	UKM
129133	HARITH BIN NOORZI	UIAM
129086	HUI YIN CHONG	UKM
128784	ILI NAJIBAH BINTI MOHD HUSAINI	UiTM SHAH ALAM
,129750	IZWAN FAZLYANSHAH BIN ISMAIL	UKM
129319	JESLINE NELAVIA ANAK JOHN BOSCO	UNIMAS
129522	JOCELYN JONG LING HUI	SWINBURNE SARAWAK
129648	JUSTA UMBA ANAK AJAH	USM
129241	KANG WEI KIAT	UTM
129304	KEZIA NACATH ANAK NANG	UNIMAS
129090	KHADIJAH BINTI GALIP	UIAM
129101	KHOO YU	UTM
129618	KIRTIGEN A/L VIJAYAKUMAR	UTM
129272	LAI SHENG QUAN	UTM
129510	LEONARD WONG YU RUI	SWINBURNE SARAWAK
129075	LIM HUI	UKM
129411	LIM JIA YANG	UTM
129085	LIM XIN HUI	UKM
129402	LIM ZHI XIAN	UTM
129670	MARISA IZZATI BINTI MISKAM	UKM
128773	MASRIZAL BIN MANSUR	UiTM SHAH ALAM
128789	MAYBELLINE ANAK WILLIAM REGGIE	UiTM SHAH ALAM
129372	MICHELLE VANLENTINA ANAK SIMBOH	UNIMAS
129650	MOHAMAD MUDZAKEER BIN MOHAMAD RAZEEK	UKM
129672	MORVAREED MOUSAVI	UKM
129694	MUHAMAD ZUHAIRI BIN KASMAN	UKM
129677	MUHAMMAD ADZRIN BIN MOHD ADLIE	UKM
129683	MUHAMMAD AFIQ DANIAL BIN JAAIS	UKM
129102	MUHAMMAD AISAR BIN KAMARUL NIZAL	UIAM
129079	MUHAMMAD ALIF SYAHMI BIN SAMSUFIYAN	UIAM
128772	MUHAMMAD AMIRUL FIRDAUS BIN SARMADI	UiTM SHAH ALAM
129092	MUHAMMAD AMIRUL SYAFIQ BIN ABDUL SUKOR	UIAM
129655	MUHAMMAD FARID BIN ROHANI	UKM
129664	MUHAMMAD FAUZAN BIN MAZLI	UKM
129659	MUHAMMAD HARITH ZAFRAN BIN MOHD ZULKHAIRI	UKM
129660	MUHAMMAD HARRAZ BIN ZAKARIA	UKM
128768	MUHAMMAD LUKMAN HAKIM BIN MOHD EZANEE	UiTM SHAH ALAM
129168	MUHAMMAD SYAFIQ AFZAN BIN ZAINUDIN	UNIMAS
129633	MUHAMMAD SYAFIRUL ASYRAF BIN MOHD ZULKIFLEE	UTM MJIT
129741	NARESSHNATHAN A/L RAGUNATHAN	UKM
129662	NAVIEEN A/L M.MURUGIAH	UKM
128812	NEOH ZHI JING	USM
129202	NG ZHI YANG	UTM
129165	NOR ALIA NAJIHAH BINTI RUSLI	UiTM BUKIT BESI
129081	NUR ADILAH BINTI MOHAMAD	UKM
129386	NUR FARAH HAMIZAH BT SHAHRIZAL	UNIMAS
128778	NUR FAZILLA SYAHIEZA BINTI ZULKIFFLI	UiTM SHAH ALAM
129663	NUR HIJANAH BINTI MOHAMAD ZAHID	UKM
129661	NUR I'FFAH BINTI ABDUL HANAN	UKM
129093	NUR SYAFIQAH SYAHIRAH BINTI MUHAMMAD SHAHRIN TONY	UKM
129653	NUR SYAZA NADIA BINTI MAXTAR	UKM
129080	NURAFIQ DINIE BIN MOHD PIKRI	UKM
129651	NUREL IMAN BAHIAH BINTI ROZALI	UKM
129340	NURFARISHA NADIA RADIAH BINTI ASRAL FARHI	UNIMAS
128771	NURIN NADHIRAH BINTI HAIRUDIN	UiTM SHAH ALAM
129649	NURSYAHZANANI SYASYA BINTI ABD HAMID	UKM
129103	NURUL KHAIRUNNISA BINTI ZAMIR AMBIA	UIAM
129094	NURUL SYAHIRAH BINTI ABDUL HALIM	UKM
129150	ONG JIN JIE	UTM
129743	OOI TING YU	UTM
129671	RAFIQ NAUFAL BIN MUHAMED NAZRI	UKM
129192	SAMBAYEVA ADIYA	XIAMEN
129382	SHAHIRFAN AMSYAR BIN SHAHARUDDIN	UNIMAS
129652	SHARVIN A/L BALAKRISHNAN	UKM
128779	SHAZANI AZRI BIN SHAIFUL HISHAM	UiTM SHAH ALAM
129084	SITI NUR AFIQAH BINTI ROSTAM	UKM
129658	SITI NURATHIRAH BINTI NORAZMI	UKM
129749	STELLA CHONG KANG LING	UTM
129104	SYASYA MAISARAH BINTI MAHADI	UIAM
129026	TAN WAI CHUEN	UMPSA GAMBANG
129242	TAN WEI XUAN	UTM
129431	TAQRIZ ASHRAF BIN TUMIN	UTM
129182	TEE WAN YEE	UTM
129669	THEE MENG YANG	UKM
129243	TIMOTHY KEONG ZUN CHENG	UTM
129190	TOH GENG HONG	XIAMEN
129676	UMAIRAH BINTI SHAMSUDDIN	UKM
129656	VISHNOU A/L SARAVANAN	UKM
129073	VISNO A/L JEEVA	UKM
129076	VISVANITHA GANESAN	UKM
129078	WAN MUHAMMAD ARIEF BIN WAN AZLE	UIAM
129089	WAN NURUL AIN BINTI WAN RAHIM	UIAM
129193	WONG YI LIN	XIAMEN
129667	WONG YONG HUA	UKM
129403	YAP LI XIAN	UTM
CIVIL ENGINEERING		
129545	AARON XAVIER ANAK ALEXANDRIA	UTS
129323	ABANG AMIRUDIN BIN ABANG AZMAN	UNIMAS
129511	ABIGAIL BRIDGET IPAH ANAK THADEUS LING	SWINBURNE SARAWAK
129744	AHMAD FAIZ MOHD SOBRI	UTM
129546	AIDON SWITHIN ROY	UTS
129548	AIMAN DANIAL BIN MOHD FADZILAH	UTS
128803	AINUL MARDIAH BINTI MAHADZIR	USM
129437	ALIF AIMAN BIN GHAZALI	UiTM SHAH ALAM
129396	ALLEYA ANAK MEGOIE	UNIMAS
129327	ALNA AQMAR BIN ALWIE	UNIMAS
129537	ALPHONSUS YU SOON WEI	UTS
129689	ALYA FASIHAH BINTI RISHAMMADI	UTHM PAGOH
129692	AMY ALLYANA BINTI ALPIAN	UTHM PAGOH
129525	ANSON NGAM KEE MIN	SWINBURNE SARAWAK
129615	ANWAR FITRI BIN SALIM	UTM
128786	ARIF SYAZWAN BIN ALI ZAKAFRI	UiTM SHAH ALAM
129275	ARMASA JAYAN ANAK ALBERT IRAN	UNIMAS
129373	ARYNA DANIA SYAHYN BINTI NORJAIN	UNIMAS
129495	BONG YEE YUAN	SWINBURNE SARAWAK
129538	BRANDON CHUO ZONG HUI	UTS
129643	BRYSON MINIGS ANAK WILLIE MINIG	UNIMAS
129083	CARLSTEN ANAK RASIT	UNIMAS
129435	CHANG ZI-XUAN	UTM
129091	CHEANG ZI SHAN	UTAR KAMPAR
129261	CHEE SHAO YANG RYAN	IMPERIAL COLLEGE LONDON
128816	CHENG YI XUAN	USM
129552	CHERLYEANA SYHABRIENA ANAK SUNTING	UTS
129264	CHEW KANG XUAN	UTM
129325	CHIN LIK FENG	UNIMAS
129115	CHONG JIE MIN	UTM
129233	CHONG LEE XUAN	UTM
129384	DAR VINCE ANAK WAHAP	UNIMAS
128797	DEHVAKUMAR A/L PANIRSELVAM	USM
129031	DENNIS NGIENG XUE EN	UM
129557	DYLAN SHIA RUI KANG	UTS
129406	EDMUND DIDIE ANAK PHILLIP	UNIMAS
129160	EE KAI YING	UTM
129298	ELIANA ANAK GEOFFERY	UNIMAS
129681	ELIYA NASIERAH BINTI WIRA ALI	UTHM PAGOH
129082	EMILIANA SHERIN ANAK JOSEPH LIJAS	UNIMAS
129191	EMMANUEL NIVELLE BIN CHARLES	UNIMAS
129291	EPHRAIM LAU YEW LEONG	UNIMAS
129196	ERIC JONG CHIA SHEN	UNIMAS
129145	ERNA EVRENLINA RABAI ANAK NUYANG	UNIMAS
129338	ESTHER MELANIE SUM	UNIMAS
129561	EZEKIEL LAJA ANAK LEO STEVEN	UTS
129504	FAUSTINA ELCINDY MUJIMAN	SWINBURNE SARAWAK
129317	FELLANESA PEREIRA ANAK BUMA	UNIMAS
129282	FERNANDA DANIELLA ANAK DOWNEY	UNIMAS
129361	FLORIZEL VELIXIA ANAK SERPICO	UNIMAS
129354	GLORIA UMAH ANAK MARTIN RENANG	UNIMAS
129505	HENRY KAI WEI CHIENG	SWINBURNE SARAWAK
128815	HO YUET AI	USM
129562	IRIS VOON TZE SHIN	UTS
129563	ISMIRZA HAZWANI BINTI ROKIMIN	UTS
129303	IZLA NATASHA BINTI ANUWAR	UNIMAS

129400	IZRA YASMEEN BINTI MOHAMAD TABRIZZAL FITRY	UNIMAS
129508	KAYLAN ENRICO RANYIS ANAK VICTORIA	SWINBURNE SARAWAK
1293310	KELVIN TANG KEE HAN	UNIMAS
129509	KHO NGIAP YONG	SWINBURNE SARAWAK
128799	KIREET A/L SIVAJOTHI	USM
129043	KOAY YE KUANG	UM
129028	KON CHUNG SIANG	UM
129760	KRISTEN JENNA ANAK CHURCHILL	UNIMAS
129234	LAI YI JUN	UTM
129401	LAU SOO WEI	SEGI
129523	LEE CHINGYII	SWINBURNE SARAWAK
129211	LEE JIA JING	MONASH
129751	LEE JIN LIANG	UTM
129512	LIEW JIA RONG	SWINBURNE SARAWAK
129240	LIM KANG XU	UTM
129266	LOH YEE YANG	UTM
129529	MANDY LEE SHENG ZHI	SWINBURNE SARAWAK
129609	MASLINDA BINTI MUNDING	UMS
129614	MAX WELLENCE MASIR ANAK MAXWELL SELIONG	UNIMAS
129167	MELVIN NG ZHEN HONG	UTM
129514	MICHAEL ANTHONY	SWINBURNE SARAWAK
129324	MIEW WENG SAM	UTM
129385	MOHAMAD FARHAN ZIKRY BIN SULFII	UNIMAS
129645	MOHAMAD KHAIRULNIZAM BIN HASSAN	UNIMAS
129088	MOHAMMAD ZUHAIRI BIN MOHAMMAD YUSOF	UTHM BATU PAHAT
129432	MOHD FAHMI BIN SAIDEH	UMS
129610	MUHAMAD ZAHIM ZAKIMI BIN MUHAMAD ZAKI	PUO
128787	MUHAMMAD AIMAN RUZAINI BIN MOHAMAD ASRI	UiTM SHAH ALAM
129569	MUHAMMAD FAREEZ BIN SAMSUDIN	UTS
128785	MUHAMMAD HAZIM UKAIL BIN AHMAD FAIZUL	UiTM SHAH ALAM
129606	MUHAMMAD IZUDDIN BIN ADNAN	UKM
129194	MUHAMMAD RAHMAT BIN SYARIFUDDIN	UNIMAS
129684	MUHAMMAD SYAKIR AZMAN BIN ABDULLAH	UTHM PAGOH
129208	MUHAMMAD WAEZ HAIKAL BIN ISHAK	UiTM SHAH ALAM
129572	MUHAMMAD ZAHIDI BIN RICKY @ MOHAMMAD RAZI	UTS
129375	NADZIRAH BINTI RASAIE	UNIMAS
129542	NG TIAN BAO	UTS
129617	NIK NORSYAKILA BINTI MUHAMAD GOPAL	IUKL
128781	NIK NUR AISYAH BINTI ILIAS	UiTM SHAH ALAM
129753	NOELLE IZZINTA ANAK NOR	UNIMAS
129638	NOHZ OSAMIAH BINTI NOOR HALIM	UNIMAS
128800	NORASIKEN BINTI ABD RASIB	USM
129745	NUHAA SAFIAH BINTI MONARIZZAL	UTM
129290	NUR AFRINA AINA BINTI NORNIZAM	UNIMAS
128769	NUR ALIA NAJWA BINTI WAHI ANUAR	UiTM SHAH ALAM
129636	NUR AMIRA BINTI ZAMRI	UNIMAS
129629	NUR AMIRAH NAJIHAH BINTI SHAHMINAN	UKM
129691	NUR ATHIRAH BINTI AZAHARI	UTHM PAGOH
129756	NUR AZRAMADANY BINTI AZMAN	UNIMAS
129693	NUR BALQIS BINTI MOHD SHARIL	UTHM PAGOH
128782	NUR FARHANA BINTI HALIM	UiTM SHAH ALAM
129763	NUR FATHIAH BINTI RAHMATULLAH MARICAR	UNIMAS
129605	NUR IZZATUL BALQIS BT YUSRI	UiTM SHAH ALAM
129573	NUR NISRINA NABIHAH BINTI ZISMAH	UTS
128783	NUR QAMARINA ARISSA BINTI ROSIDI	UiTM SHAH ALAM
129574	NUR QHAIRRUNISHA BINTI MOHAMAD ARHMAN ABDULLAH	UTS
129757	NUR SHAZIATUL FARAHIN BINTI BORHAN	UNIMAS
129365	NURAIN BATRISYIA BINTI SENU	UNIMAS
129344	NURDANIA UMAIRA BINTI OMAR	UNIMAS
129687	NURIN AFRINA BT ABD RAHIM	UTHM PAGOH
128796	NURUL AIN YASMIN BINTI AZHARUDIN	USM
128802	NURUL AINNI BINTI MAZLAN	USM
129280	NURUL ASYHIQIN BINTI SAFIAN	UTHM BATU PAHAT
128780	NURUL SHALIANI BINTI AHMAD JOHARI	UiTM SHAH ALAM
128801	NURUL SYAFIQAH BINTI RUSLI	USM
129644	OLIYANA JANE GUDAH ANAK SANDA	UNIMAS
128817	ONG ZI CONG	USM
129042	OOI QI ZHI	UM
128814	POH WAN YOU	USM
129210	PUTRI CAMELIA IZORA BT KAMARULNIZAM	UiTM SHAH ALAM
129575	RACHEL LIM MAY HUI	UTS
129686	RENIE NUR ELFIYANIS BINTI LUKMAN HASAN	UTHM PAGOH
128798	RISHITHARAN A/L SIVANESAN	USM
128795	SATIESHWARAN A/L PARASOORAMAN	USM
129673	SELLYNIE ANAK AKEY	UNIMAS
129752	SHAMEEN NATASHA BINTI KARIM KHAN	UNIMAS
129201	SIA WEI QIAN	UTM
129688	SITI AISYAH BINTI MOHD KHAIRUDDIN	UTHM PAGOH
129358	SITI ASMAH BINTI ROSLAN	UNIMAS
129374	SITI HUMAIRA BINTI AHMAD TARMIZI	UNIMAS
129176	SRI IRSWARANRAO A/L RAVIKKUMAR	UNiMAP
129576	SUZIANA ANAK JARAU	UTS
129120	TAN JIN JIE	UTM
129486	VANESSA LEE SI WERN	SWINBURNE SARAWAK
129577	VICTORIA LAURA ANAK FRANCIS	UTS
129147	YONG TZE MING	UTM
129292	ZUHAIQHAL BIN MEHRAQUASDINATA	UNIMAS

COMPUTER ENGINEERING

129493	AISYA BINTI ABU HASSAN ALSHAARI	SWINBURNE SARAWAK
129497	CORNELIUS LIEW SAN SZE	SWINBURNE SARAWAK
129518	DIVYESSH SIVAKUMAR	SWINBURNE SARAWAK
129624	IRFAN AQASYA BIN KARIM	UniKL MIIT
129219	MUHAMMAD AZMIN IZZUDDIN BIN RAZAMAN	UPM
129517	THIAN XIN	SWINBURNE SARAWAK
129163	TOH SHEE THONG	UTM

ELECTRICAL ENGINEERING

129245	ABANG MUHAMAD HAZIQ BIN ABG HUSAINI	UTM
129678	ADUKA HAIKAL BIN MD NOR RAMDON	UTHM PAGOH
129715	AHMAD FAHREN ADAM BIN SULAIMAN	UTHM PAGOH
129710	AHMAD MUQRI NAIM BIN AHMAD ROSSAIMI	UTHM PAGOH
129702	AHMAD QUAYYUM BIN ABDULLAH	UTHM PAGOH
129726	AHMAD YASIN BIN MOHD UZAH	UTHM PAGOH
129549	ALEXIS LIM KAI XUAN	UTS
129705	AMIR IRFAN BIN A.RAMLI	UTHM PAGOH
129723	AMIRUL HAZIM BIN SUMINARNO	UTHM PAGOH
129730	ARIF HAZIM BIN MOHD HAZINI	UTHM PAGOH
129708	AZAM HAKIM BIN ABDULLAH	UTHM PAGOH
129714	AZIEM HAKIMIE BIN ZU@ ZULKIFLE	UTHM PAGOH
129718	AZRIN SHAH BIN AZHARI	UTHM PAGOH
129737	BATRISYIA AIMI BINTI ABDUL RAZAK	UTHM PAGOH
129048	CELESTE TRINITY ANAK NATHAN	UM
129198	CHEW KAH CHUN	UTM
129554	CHIN YUNG SING	UTS
129555	DYLAN HII SHYANG YI	UTS
129539	EMMANUEL SANO ANYIE LAH	UTS
129404	EUGENE ONG WEISHENG	UTM
129035	EWE XI YAN	UM
129717	FAHRIN HAKIM BIN BADRY	UTHM PAGOH
129738	FATIN SHAKIRAH BINTI MOHD SHAMSUL HISHAM	UTHM PAGOH
129265	FOO FANG NGEE	UTM
129619	JEREMIAH KANA ANAK JOHN PANGGAU	UiTM SHAH ALAM
129565	JOHNSON KONG ZONG SAINT	UTS
129695	KAIISHORI A/P BALAMURUGAN	UTHM PAGOH
129682	KAISAH AMNI BINTI SHAHRONNIZAM	UTHM PAGOH
129735	KHALISAH MAISARAH BINTI KELANA	UTHM PAGOH
129739	KHARTHIGA A/P ROMEZ CHANDRA	UTHM PAGOH
129038	KHOR GAIT LING	UM
129719	LINKESHWER A/L SARAVANNAN	UTHM PAGOH
129037	LOW LI XIN	UM
129711	MOHAMAD HAZIMI BIN MOHAMAD	UTHM PAGOH
129703	MOHAMAD HAZIQ ADLAN BIN JAFRY	UTHM PAGOH
129722	MOHAMAD HELMIE IKRAM BIN YUSLAN	UTHM PAGOH
129725	MOHAMMAD HAZIQ BIN SHAFIZAL	UTHM PAGOH
129727	MUHAMAD ZUL HAIKAL BIN RUSLI	UTHM PAGOH
129716	MUHAMMAD ADAM HARIS BIN MD ZAIHAN	UTHM PAGOH
129697	MUHAMMAD ARMAN BIN AZMI	UTHM PAGOH
129712	MUHAMMAD AZRUL AZAM BIN MOHD AMIN	UTHM PAGOH
129736	MUHAMMAD BIN MOHD REZUAN	UTHM PAGOH
128776	MUHAMMAD BIN NOH	UiTM SHAH ALAM
129699	MUHAMMAD DAIM BIN MOHD HAMDAN	UTHM PAGOH
129700	MUHAMMAD DANISH ASYRAFF BIN KHAIRIL NAZRI	UTHM PAGOH
129713	MUHAMMAD DANISH BIN HAIRIL ANUAR	UTHM PAGOH
129728	MUHAMMAD DANISH HAIKAL BIN ABDUL MUIM	UTHM PAGOH
129540	MUHAMMAD EZAM BIN AINIE	UTS
129439	MUHAMMAD FAIRUZ HAZAMI BIN MOHD JAMIL	UiTM SHAH ALAM
128767	MUHAMMAD FARIS NAJMI BIN AZEMI	UiTM SHAH ALAM
128775	MUHAMMAD HAFIZI BIN MOHD ZAKI	UiTM SHAH ALAM
129732	MUHAMMAD HAIKAL B KAMARUL BAKRI	UTHM PAGOH
129720	MUHAMMAD HAKIM BIN ROZLAN	UTHM PAGOH
128774	MUHAMMAD HASIF HILMI BIN RAHMAN	UiTM SHAH ALAM
129729	MUHAMMAD HAZIQ BIN AHMAD ZULKAFLI	UTHM PAGOH
129029	MUHAMMAD IHSAN HANIF	UM
129704	MUHAMMAD IZZAT HAZIM BIN ABDUL AZIZ	UTHM PAGOH
129724	MUHAMMAD NABIL IMAN BIN AHMAD SAHARUDDIN	UTHM PAGOH
128770	MUHAMMAD NAZIF EZANY BIN YUSOP	UiTM SHAH ALAM
129734	MUHAMMAD ZULHILMI BIN HAKIZAN	UTHM PAGOH
129701	MUKESSH A/L PRAKASH	UTHM PAGOH
129721	NELSON A/L NYANATHAS	UTHM PAGOH
128811	NG JIT SHEN	USM
129731	NOR NAZIHAH BINTI MD NAZID	UTHM PAGOH
129635	NUR AISYAH BINTI MOHAMAD AZALI	UiTM SHAH ALAM
129709	NURUL IFFAH BINTI AZAHARI	UTHM PAGOH
129632	NURULHUDA BINTI SAMA'ON	UiTM SHAH ALAM
129698	PUTRI NURALEYA BALQIS BINTI FIKIRIAWAN	UTHM PAGOH
129706	RAZIN HAFIZI BIN MOHD RAZIF	UTHM PAGOH
129027	SHERRIE GOH XUN YI	UM
129733	SYAHMI WAFIY	UTHM PAGOH
129696	SYUKRINA ADIBAH BINTI NOR ASMAN	UTHM PAGOH
129050	TAN JING TING	UM
129046	TEE KIM YAW	UM
129603	THANUS RAO A/L CHANDRAN RAO	UNiMAP
129685	UQAIL HAFIY BIN HANIFAH	UTHM PAGOH
129707	UWAIS AL QARANI BIN MUHAMMAD AMIR	UTHM PAGOH
129045	WONG CHUAN ZHOU	UM
129030	WONG QIN YI	UM
129034	ZHANG SHI HAO	UM

ELECTRICAL & ELECTRONIC ENGINEERING

129311	AARON THEN YI HUA	UNIMAS
129268	ABANG HAZIQ SYAHIN BIN ABANG RAHABIDIN	UNIMAS
129269	ADREA-NA ANAK ATOM	UNIMAS
129547	AHMAD HANIF SYAHMI BIN AHMAD SHUKRI	UTS
129362	AIMAN DANIAL BIN MOHAMED FEDEROS	UNIMAS
129339	ALLEN JOSHUA CHUA	UNIMAS
129491	ALVIN WONG SHENG QIANG	SWINBURNE SARAWAK
129746	ALVYCIA MAGDALENA AK YACOB	UNIMAS
129494	ALWIN YU SENG YAN	SWINBURNE SARAWAK
129332	AMIRAH MUZAINAH BINTI AZIS	UNIMAS
129356	AMMIEL IRWIN BALAN ANAK ALPHNOUSES	UNIMAS
129295	ANDREAS AJAN	UNIMAS
129161	ANGELARA PASKA ANAK SILVESTER	UNIMAS

129313	ANGELI YEN ANAK RAMUS	UNIMAS
129398	ARWEN EMMELYNN ANAK AYMER CEDRICK	UNIMAS
129367	ARYSHA MAZWA RUSYDENA BINTI AMIR ABDULLAH	UNIMAS
129334	AWG MUHAMMAD ZAHIN BIN AWG JAFFARI	UNIMAS
129267	AZEEZA BINTI HAMZAH	UNIMAS
129359	AZTRINA ANAK BAIE	UNIMAS
129607	BARIEN DEXTER ELGAR WENCESLAUS	UKM
129271	BECKHAM ONG SHING AN	UNIMAS
129674	BECKINSALE CASSIE DEMMIE ANAK BENJAMIN	UNIMAS
129305	BRANDON TOMME SETU ANAK CHARLES BERNARD	UNIMAS
129333	BRIAN CHIA YONG CHIN	UNIMAS
129379	CALLISTA AMANDA ANAK JONEM	UNIMAS
129526	CARLOS SIA CHA JUN	SWINBURNE SARAWAK
129394	CELESTINE BABANG ANAK GUARA	UNIMAS
129254	CHAN ZHEN YEE	UNIMAS
129071	CHARLES NOEL ANAK MICHAEL LODY	UNIMAS
129341	CHRISTIAN JOHANNSON ANAK WILLSON	UNIMAS
129345	CHRISTINA MAWAI ANAK JEFFREY	UNIMAS
129300	CHRISTINE BONG XIN YI	UNIMAS
129646	CHRISTY AUDREY ANAK WILTANY	UNIMAS
129213	CHU GUANG YAO	XIAMEN
129186	CYNTHIA ANAK THOMAS	UNIMAS
129180	CYRIL KEVIN ANAK ABRAHAM	UNIMAS
129342	DANIEL EFESUS ANAK JAEN	UNIMAS
129152	DANIELLE LIM ERN HUI	NOTTINGHAM MSIA
129498	DARREN WONG CHEE LIANG	SWINBURNE SARAWAK
129657	DAYANG NUR IZZIANA BINTI AWANG DAHLAN	UNIMAS
129199	DELIA ELVIRA EXMINA ANAK JOUNY	UNIMAS
129287	DENILSON LIHAN	UNIMAS
129352	ELVIN LING DI WERN	UNIMAS
129369	ERIC JOEL ANAK BOMEIKA	UNIMAS
129502	EUGENE LEE HONG YI	SWINBURNE SARAWAK
129647	EUGENIE RINIE ANUM ANAK EDWARD ELAI	UNIMAS
129170	EVANESON AMOY ANAK JACKSON	UNIMAS
129162	FATHE MUHAMMAD SYIMIR BIN HAYADI	UNIMAS
129387	FIONA GRACE THAM	UNIMAS
129279	FITRI AYU BINTI AYUB	UNIMAS
129642	GEORGINA ONG YEN YEE	UNIMAS
129637	HASNA WAFA BINTI BURHANUDIN	UNIMAS
129183	IMELDA SERAWA DAUT	UNIMAS
129321	JAFEESA JENA ANAK JOHNNY	UNIMAS
129293	JANICE ELIZABETH ANAK JOSEPH JUNTING	UNIMAS
129380	JASCICA TEO WY KA	UNIMAS
129528	JASWYN LIM MING HOU	SWINBURNE SARAWAK
129370	JEFFERSON ABIMENZ ANAK JACK TARRY	UNIMAS
129759	JESSWANDY ANAK ROSILI	UNIMAS
129507	JORDAN HEE SHAN YUNG	SWINBURNE SARAWAK
129187	KEVIN LIEW SOON HUA	UNIMAS
129294	KONG ENG HUI	UNIMAS
129381	KRISTY ENDUN SEJA ANAK NYUWAK	UNIMAS
129248	LARSON ANAK PETRUS	UNIMAS
129612	LAU YI JING	APU
129378	LEE JIA DING	UNIMAS
129620	LEK YONG BIN	APU
129309	LEONG KAI LIANG	UNIMAS
129393	LES FEDERER ANAK WILSON SAYOH	UNIMAS
129177	LOUISA GERANTING ANAK ERING	UNIMAS
129622	LOW SIN YAN, RACHEL	TAYLORS
129366	LUKE OWEN, AMBROSE	UNIMAS
129513	MALISSA MARELL ANAK MAXWELL	SWINBURNE SARAWAK
129350	MAXNELSON MACKRY	UNIMAS
129377	MOHAMAD HAZIQ BIN ISKANDAR	UNIMAS
129337	MOHAMMAD ATIQ ZUHAILI BIN AZIZ	UNIMAS
129627	MOHAMMAD KHALAF KANAKRI	MAHSA
129640	MOHAMMAD USTHAQIF BIN MOHAMED	UNIMAS
129363	MOHD AZHAD BIN NORADZAHAR	UNIMAS
129203	MUHAMAD HANIF BIN SHAFRE HASSAN	UNIMAS
129214	MUHAMMAD DANISH BIN MUHAMMAD FAWZY	UiTM PERMATANG PAUH
129315	MUHAMMAD NOR AZRI BIN AMRI	UNIMAS
129297	MUHAMMAD NUR HAKIMI BIN ABDULLAH	UNIMAS
129284	MUHAMMAD RAFIF IRSYADI BIN SHAMSUL ANUAR	UNIMAS
129571	MUHAMMAD RAZIQ BIN ABDUL RAZI	UTS
129310	NICHOLAS LAU LIK JIE	UNIMAS
129630	NUR LIYANA BINTI MUS EFFENDY	UNIMAS
129755	NURAMIRA BINTI ZAKARIA	UNIMAS
129232	PRISCA KAJAN	UNIMAS
129137	RAZIQ IZZAHAN BIN JOHAN	UNIMAS
129316	REBECCA LIAN ANAK SABAI	UNIMAS
129639	ROBERT VIJAI ANAND RONAK	APU
129230	RODERICK ANAK JONEG	UNIMAS
129184	SYLVESTEN CARLOS ANAK SINTAU	UNIMAS
129185	SYUKRAN AZIZI BIN JAFRI	UNIMAS
129149	SYUQRAN AZEM BIN SAPAWAI	UNIMAS
129515	TAN SZE YIK	SWINBURNE SARAWAK
129516	TANG SONG EN	SWINBURNE SARAWAK
129762	THEN CHIN HAO	UNIMAS
129095	UMMU HANI BINTI DAUD	UNIMAS
129141	VERONIE RAMOS ANAK GILES GANA	UNIMAS
129074	VOON QING LONG	CURTIN MALAYSIA
129521	WILLIAM YU HEE YUEN	SWINBURNE SARAWAK
129251	WONG DING CHUNG	UNIMAS
129156	WONG HANG WEI	UNIMAS
129343	WONG JUN XIAN	UNIMAS
129527	YONG JIN RONG	SWINBURNE SARAWAK

ELECTRONIC ENGINEERING

128808	CHENG KIN KIE	USM
129255	CHONG WEI SHAN	UTM
128810	CHOW JUN XUN	USM
128809	CHUAH KHAI SIANG	USM
129175	EDWIN GOH YI BIN	UTM
129179	EMILY CHAN YEN PENG	UTM
129174	HO CHIA SHI	UTM
129148	IVY HIEW YIN YING	UTM
129136	JAYVIS WEI JING XUAN	UTM
129154	JOLENE TAN YUN WEN	UTM
129144	LAI YEE XUAN	UTM
129132	LAI ZI YEE	UTM
129157	LIM JOAN EARN	UTM
129436	LIM XIN YI	UTM
129419	SOO YU XIANG	UTM
129252	TAN JING WEN	UTM
129097	TAN JOLIN	UTM
129173	TEW RUI JING	UTM
128766	TIMOTHY EMMANUEL BIN LEBEE	UiTM SHAH ALAM
129433	YEAT JING RONG	UTM

GEOTECHNICAL ENGINEERING

129256	TEO EN THONG	UTM

MANUFACTURING ENGINEERING

128794	TAN JIE YING	USM

MATERIALS ENGINEERING

129159	AISHAHTUN NAAJIHAH BINTI AZMAN SHAH	UIAM
128804	NG QUENTIN	USM
128793	SIM CHIOW YEEN	USM

MECHANICAL ENGINEERING

129524	AARON TIONG XUN HAO	SWINBURNE SARAWAK
129223	ABDUL AZIZ BIN RIZAL	UniKL MFI
129225	ABDUL RAHMAN BIN ABDUL HALIM	UniKL MFI
129536	ABDUL RA'UF BIN NAHARUDIN	UTS
129308	ABG ABDUL RAHMAN SYARKAWI BIN ABG ZAMSYAHRI	UNIMAS
129224	ADAM ASKANDAR BIN FAISAL	UniKL MFI
129140	ADIBAH AISYAH BINTI AB RASYID	UniKL MFI
129492	ADRIAN KAMARN ANAK IGNATIUS NYALENG	SWINBURNE SARAWAK
129216	AFIF SAFWAN BIN ROSLEE	UniKL MFI
129257	AFIQ ZIKRI BIN ZAINI	UniKL MFI
129197	AHMAD AMIRUL AMIR BIN YAZID	UniKL MFI
129164	AHMAD ASHMAN BIN MOHAMMED ROSLI	UniKL MFI
129416	AHMAD DANISH BIN AZMAN	UniKL MFI
129229	AHMAD FAJAR BIN MELAKAN	UniKL MFI
129040	AHMAD NAJMI BIN RAMLAN	UM
129302	AHMAD SYA'RAWI BIN AHMAD SYUKRI	UniKL MFI
129207	AHMAD YUSUFFARHAN BIN MOHD SUHAIMI	UniKL MFI
129098	AIN NUR ASYIKIN BINTI ARNOLDUS REMA	UKM
129628	AINA ATHIRAH BINTI AHMAD ROSLI	UNITEN
129188	ALEESA NATRAH BINTI KHAIRUL ANUAR	UTM
129169	ALIA NASHAFINA BINTI AHMAD NASRI	UiTM BUKIT BESI
129270	ALISTAIR BRYAN ANAK ANTHONY GLEES	UNIMAS
129550	ALVIN ANAK FRANCIS	UTS
129143	AMIR BADRUL MUNIR BIN AMRAN	UiTM SHAH ALAM
129206	AMIR HARIS BIN MOHD DZZAMIR	UniKL MFI
129611	AMIRUL ASYRAF BIN AZHAR	UiTM BUKIT BESI
129314	AMIRUL BIN YALIM	UNIMAS
129032	ANOUSHKA YUSAK DHARMALINGAM	UM
129041	ARCHANNA RAGUNATHAN	UM
129424	ARIFFIN JUNYEN BIN MOHD ZAINUDIN	UniKL MFI
129408	ASHRAF IQMAL BIN MOHD JUMHAIRY	UniKL MFI
129388	CARL TARO FREDERICK	UNIMAS
129551	CARLOS SPENCER JALONG LEONARD	UTS
129496	CHAN HONG YONG	SWINBURNE SARAWAK
129371	CHARLENE SANTA ANAK MATTHIAS	UNIMAS
129047	CHEW HAO YANG	UM
129405	CHONG CIN LUN	UTM
129364	CHRISTINA ANAK CALVYTA	UNIMAS
129556	CHRISTOPHER NG ERN DIEN	UTS
129171	CHRISTY SEE JING VON	UTM
129399	DANIEL CHRIS EMPARI ANAK LIUS @ LUIS	UNIMAS
129258	DANISH IMRAN BIN ABD RAHMAN	UniKL MFI
129346	DAVION DICKINSON ANAK ANIL	UNIMAS
129499	DAYANA RASHA BINTI DANIEL ONG	SWINBURNE SARAWAK
129044	DORSA FARZAM	UM
129500	EDDIE TAN BOO DICK	SWINBURNE SARAWAK
129501	EDRIC KUEH JIN CHEN	SWINBURNE SARAWAK
129288	EISYA SYUHADA BINTI EMBRAN	UniKL MFI
129558	ELENA CHOONG MUN KEI	UTS
129520	ELMYN ANAK MICHAEL	SWINBURNE SARAWAK
129559	ELVIN TAN SIONG BING	UTS
129761	ELWYN EUGENE KLINE ELIAS	UNIMAS
129560	EMMA CHRISTINE ANAK PATRICK	UTS
129392	ERICK LIAN SIMON LIAN	UNIMAS
129758	EVANNELL GABRIEL	UNIMAS
129328	FABIAN MARK BIN FEBRUARY	UNIMAS
129228	FAKHRUSY SYAKIRIN BIN SAMINAN	UniKL MFI
129414	FARIS HAKIMI BIN JAILANI	UniKL MFI
129389	FELIX JUAN SIM	UNIMAS
129376	FRANKIESTEIN ANEN ANAK SPENCER	UNIMAS
129764	FREDERICK SAGIH ANAK SIGAL	UNIMAS
129263	FRIDIFSON ANGKING ANAK BELALANG	UNIMAS
129072	GABRILL MIKE ACHONG ANAK GISH	UNIMAS
129553	GARY PETERSON ANAK TEGONG @ PANCHIT	UTS
129301	HARESH DYLAN A/L SIVANESVARAN	UNIMAS
129425	HARITH ZHARFAN BIN ZAKARIA	UniKL MFI
129299	HAZEL ANAK MICHAEL THOMAS	UNIMAS
129277	IMAN KHAIRINA BINTI MOHD YUSOP	UniKL MFI

129221	IRFAN SYAHMI BIN ISMADI	UNIMAS
129053	IVAN CHONG	UM
129564	IVY TING YEO ANG	UTS
129142	IZMAN BIN HASSAN	UM
129127	JASON ULAK ANAK TLAJAN	UNIMAS
129329	JONAS WONG PAK KONG	UNIMAS
129506	JONATHAN CHIA HUNG XIANG	SWINBURNE SARAWAK
129306	JOSEPHINE TINGANG ANAK JOSEPH	UNIMAS
129312	JULIAS JONATHAN ANAK DARIS	UNIMAS
129355	JULIUS GANI ANAK JEFFERY	UNIMAS
129566	KENNETH MOH HIONG WONG	UTS
129567	KENNY MACMILLER ANAK JAMPI	UTS
129568	KENNY YII XU CHI	UTS
129621	KERK QUAN FENG	UM
129429	KHAS MUHAMAD HAZIM BIN KHASNI	UniKL MFI
129215	KHUSNAIZA ZAHEERA BINTI KAMARULZAMAN	UniKL MFI
129134	KHUZAIFULLAH BIN KASTURI	UniKL MFI
129434	LESTER CHAI JUN YAN	UTM
129289	LISMONT NIDEN	UNIMAS
129490	LO WEE THAI	SWINBURNE SARAWAK
129172	LOW JIE SOONG	UTM
129296	MAXIMUS LUKE ANAK HENDISON	UNIMAS
129247	MAZLEEN BINTI MAZLAN	UniKL MFI
129613	MD ARAFATH JAMAN ALIF	UTM
129336	MELVIN ANDOK ANAK JABLIS	UNIMAS
129205	MEOR NAQIYUDDIN NAIIM BIN MEOR AZLAN	UiTM BUKIT BESI
129158	MICHAEL BENEDICT FOO	UNIMAS
129322	MOHAMAD AIEZANAWIE BIN MOHD SYAHRULNIEZAM	UNIMAS
129415	MOHAMAD DAINIS HAKIM BIN MOHD AZMI	UniKL MFI
129285	MOHAMAD IZAIHAN BIN MOHD NASIR	UniKL MFI
129330	MOHAMAD NUR AIZAT BIN MOHD IBRAHIM	UNIMAS
128504	MOHAMAD REZUWAN BIN RAMLE	UiTM SHAH ALAM
129409	MOHAMMAD DANIEL JIMIN BIN MOHD SUKRI	UniKL MFI
129625	MOHAMMAD HUZAIFAH BIN MOHAMMAD JOHARI	UiTM SHAH ALAM
129307	MOHAMMAD SYARI'IFUDDIN 'IRFAN BIN MUHAMAD RIZA	UNIMAS
129634	MOHD HAIQAL BIN HAZMIE	UNIMAS
129238	MOHD HAKIMI BIN MOHD ZAMRI	UniKL MFI
129135	MOHD SABRI BIN AWANG	UniKL MFI
129181	MUADZ BIN SHARUDIN	UniKL MFI
129200	MUHAMAD ALIFF FARHAN BIN MOHAMAD AZMAN	UniKL MFI
129489	MUHAMAD BADRUL HISYAM BIN JAMERI	SWINBURNE SARAWAK
129320	MUHAMMAD ADAM ZHAFRAN BIN NASRUDDIN	UniKL MFI
129426	MUHAMMAD AFIQ BIN ABDUL RASHID	UniKL MFI
129623	MUHAMMAD AHSAN BIN HAJI ABD RAHMAN	SEGI UNIVERSITY
129390	MUHAMMAD AIMAN BIN MOHAMAD NAZRI	UNIMAS
129626	MUHAMMAD AIMAN HASIF BIN MOHD AZMI	UTM
129249	MUHAMMAD AKMAL HAZIM BIN SHAHRUL	UniKL MFI
129253	MUHAMMAD AL-ZAHARI BIN MOHD ZAIDI	UniKL MFI
129195	MUHAMMAD AMIRUL AIMAN BIN MOHD FAIZAL	UiTM SHAH ALAM
129220	MUHAMMAD AMMAR SYAFI BIN SURAIMI	UniKL MFI
129417	MUHAMMAD ANIQ SYAZWAN BIN AZMIN	UniKL MFI
129250	MUHAMMAD ARIF SYAZANI BIN RAZANI	UNIMAS
129420	MUHAMMAD ARIFF DANIAL BIN MOHAMAD AFANDI	UniKL MFI
129105	MUHAMMAD ARIQ AFFANY B MOHD RIZAL	UniKL MFI
129368	MUHAMMAD ASYRANI NURDY BIN ENDDY	UNIMAS
129237	MUHAMMAD AZIM BIN AZLAN	UniKL MFI
129262	MUHAMMAD DANIAL IRFAN BIN MOHD RIZAL	UniKL MFI
128765	MUHAMMAD DANISH FATHULLAH BIN MOHAMAD ZAIDY	UiTM SHAH ALAM
129126	MUHAMMAD DANISH IRFAN BIN MOHD FARIZAL	UniKL MFI
129422	MUHAMMAD FADHIL BIN MAT DAUD	UniKL MFI
129281	MUHAMMAD FAIZ ZAIM BIN MOHD ZAIRI	UniKL MFI
129125	MUHAMMAD FAKHRUL MUNIR BIN ABD LATIF	UniKL MFI
129153	MUHAMMAD FARIS DANIEL BIN WIRAA	UniKL MFI
129654	MUHAMMAD FARIZ BIN ZULKIFLI	UiTM SHAH ALAM
129209	MUHAMMAD FARKHAN BIN ROSDI	UniKL MFI
129212	MUHAMMAD FIRDAUS BIN ROSNISHAM	UniKL MFI
129128	MUHAMMAD HABIB DANIAL BIN NORAZAM	UniKL MFI
129412	MUHAMMAD HAIKAL AIMAN BIN KHAIRUL ANUAR	UniKL MFI
129283	MUHAMMAD HAZIM BIN AHMAD SALLAHUDDIN	UniKL MFI
129114	MUHAMMAD IDHAM BIN ZUL MAJID	UniKL MFI
129227	MUHAMMAD ILYAS BIN SHAMSUL BAHRI	UniKL MFI
129235	MUHAMMAD IQMAL BIN MOHD ZAINI	UniKL MFI
129218	MUHAMMAD IZZAT BIN SHAMSUL BAHRI	UiTM SHAH ALAM
129244	MUHAMMAD LUKMAN BIN MOHD MUDZER	UniKL MFI
129430	MUHAMMAD MUEEZ BIN JACK HAPPA ISMAIL	UniKL MFI
129418	MUHAMMAD MUHAIMIN BIN ZURAMAN	UniKL MFI
129570	MUHAMMAD NAIMULLAH BIN ZAINOL ABIDIN	UTS
129226	MUHAMMAD NAZHIM BIN MOHD NASSER	UniKL MFI
129680	MUHAMMAD NOR HARITH BIN MOHD NOR HASYIMI	UTHM PAGOH
129109	MUHAMMAD NURFIQRI AMRI BIN OMAR	UniKL MFI
129679	MUHAMMAD RAMDHAN BIN ZAKARIA	UTHM PAGOH
129246	MUHAMMAD RAZIQ DANIAL BIN MOHAMMAD ROZI	UniKL MFI
129129	MUHAMMAD RIZQI BIN MOHD ZUKHI	UniKL MFI
129274	MUHAMMAD ROSANI BIN ROSLAN	UniKL MFI
129259	MUHAMMAD SAZROY AIMAN BIN MOHD SAZAILA	UniKL MFI
129438	MUHAMMAD SHUKRI BIN CHE RAJJAB	UiTM SHAH ALAM
129130	MUHAMMAD SYAHMI BIN MAT YUSOF	UniKL MFI
129397	MUHAMMAD SYAKIR ZUFAIRY BIN ABDUL RAZAK	UNIMAS
129413	MUHAMMAD WAFIUDDIN BIN WAKI'	UniKL MFI
129131	MUHAMMAD WAIZ IKHWAN BIN AMIRUDDIN	UniKL MFI
129217	MUHAMMAD ZAHIN IMRAN BIN H.Y.M ISMAIL	UniKL MFI
129204	MUHAMMAD ZHAHEEN NAUFAL BIN ZULKIFLI	UniKL MFI
129155	NADINE ADRIANA BINTI ROSMAN	UniKL MFI
129541	NATHANIEL VINCE ANAK HARRY	UTS
129675	NAZHIF DANIAL BIN ABDUL RAHMAN	UTP
129360	NICHOLAS GUNDIE ANAK MEDAN	UNIMAS
129286	NIK MUHAMMAD ARIFF AL-IMAN BIN NIK MOHD AZMI	UniKL MFI
129278	NOOR ARIQAH BINTI ABDILLAH	UNIMAS
129106	NUR ALIA NATASHA BT ABDUL HADI	UniKL MFI
129488	NUR AMIRUL BIN ZAINUDDIN	SWINBURNE SARAWAK
129427	NUR FATHMA AZZAHRA BINTI MOHD NOOR	UniKL MFI
129740	NUR HAZIQAH BINTI MOHD KHAIR AFFANDI	UNITEN
129604	NUR ILLYA QYSTINA BINTI TAHAR	UMS
129146	NUR NAJWA HANANI BINTI NOR HAZLI	UniKL MFI
129260	NUR RAIHANA BINTI KAMAL	UNIMAS
129276	NUR SHAZLYANA BINTI MOHD SAMRI	UniKL MFI
129166	NURHAZIQAH IZZAH BINTI MOHD SUKRI	UniKL MFI
129543	NURUL SOLEHAH BINTI SUHAILI	UTS
129123	ONG MING CHUN	UTM
129096	PANG SZE QING	UM
129112	RABBYATUL SHAFIKAH BINTI MOHD ROSYADI	UniKL MFI
129544	RACHEL LEE ANAK JUNUP	UTS
129423	RAJA SAYYID IDRIS BIN RAJA NAGUIB	UniKL MFI
129273	ROLLAND KUNNUS ANAK SAMI	UNIMAS
129348	ROWILHILSON UNTAN ANAK ROMEO	UNIMAS
129353	RUNDY BATOK BATANG	UNIMAS
129641	SARRVEENESH A/L M.RAMESH	UTM
129052	SEE TZE XING	UM
129124	SH ADRIEN HAIQAL BIN SH AHMAD ZAKIE	UniKL MFI
129236	SHAHRIR EZHAR BIN KHALID	UTM
129178	SHERILYN CHLOE ANAK DAVID	UNIMAS
129189	SIAU YU ZHE	UTM
129118	SITI NABILAH BINTI KADRI	UniKL MFI
129108	SITI NURALYA HAZIQAH BINTI MUHAMAD FAIZAL	UniKL MFI
129121	SKY ADITYA SYAHPUTRA	UniKL MFI
129410	SYED FARIS FAIDHI BIN SYED AB RAHMAN HILMI	UniKL MFI
129421	SYED MUHAMMAD AIRIL BIN HUSSIEN	UniKL MFI
129139	TAN RONG DE	UTM
129616	TAYEB MAHMOOD SAMI	UTM
129349	TED GEOFFERY NGALI ANAK NICODEMUS ARIN	UNIMAS
129608	THAANEES A/L MUNIAN@MANIARASU	UKM
129519	TING SING YUN	SWINBURNE SARAWAK
129151	UMAIR THAQIF BIN SOBARI	UniKL MFI
129111	UZMA HANANIA BINTI ABD RAZAK	UniKL MFI
129407	WAN AHMAD NASHRAN AKIF BIN WAN AHMAD NAZRI	UniKL MFI
129222	WAN MUHAMAD SHAZWAN BIN WAN SHAHRU	UniKL MFI
129239	WAN QASHRENA SAFEA BINTI WAN MUSTAFA	UniKL MFI
129754	WELLINGTON GRAMAN WEE	UNIMAS
129578	YONG CHIN YEE	UTS
129487	YONG JIA KAI	SWINBURNE SARAWAK

MECHATRONICS ENGINEERING

128807	EDWARD EE JIN HAO	USM
128806	FONG JIA CONG	USM
128805	WONG ZHENG BIN	USM

MINERAL RESOURCES ENGINEERING

128792	NURUL AFIKAH BINTI ALIYAS	USM

NUCLEAR ENGINEERING

129113	WONG JUN LING	UTM

PETROLEUM ENGINEERING

129100	CHONG JIA XUAN	UTM
129122	MARTIN LAU JIA YOU	UTM

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