

**ENGINEERS
INSIGHT
DEC 2023**

Engineers Insight Editorial Board



Assoc. Prof Ts Ir Dr Sivakumar
Sivanesan



Prof Ir Ts Dr Vinesh
Thiruchelvam



Ts Dr Arun Seeralan
Balakrishnan



Fatin Ayuni Mohd
Suhaimi



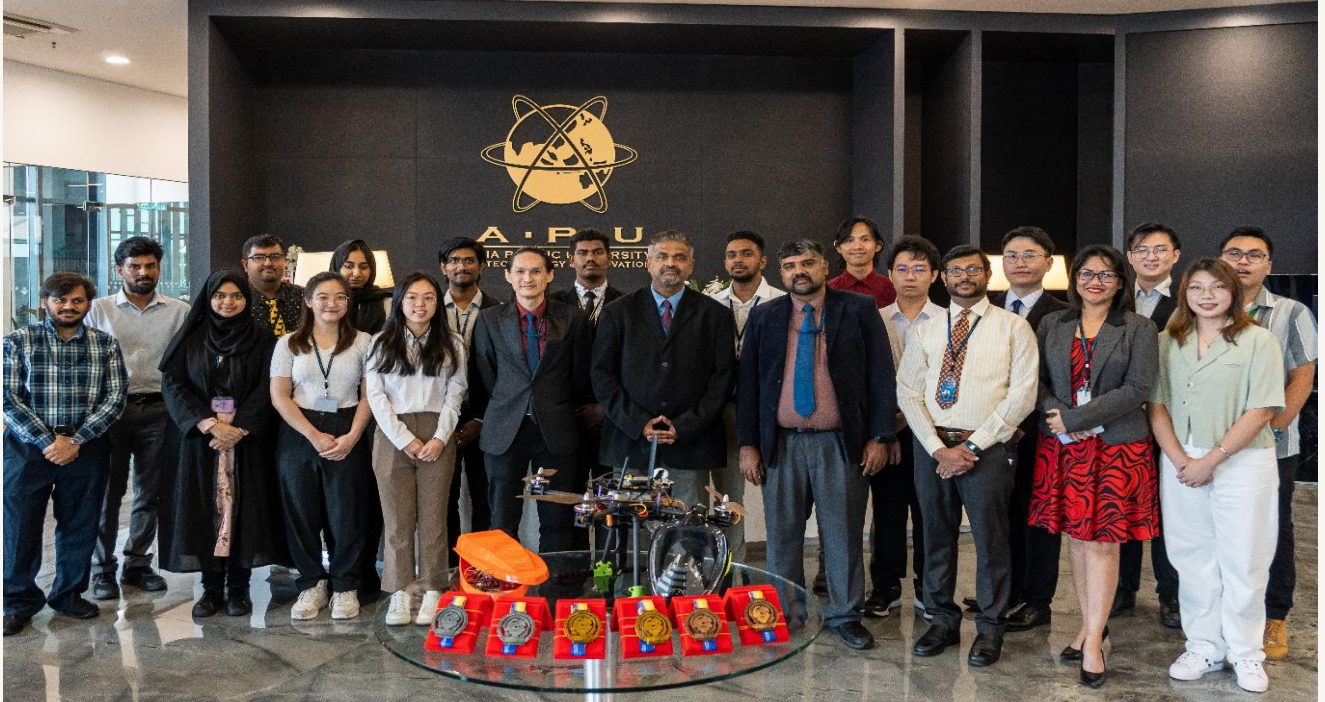
Dr Wong Siew Fan

Table of Content

No	Items	Page Number
1	SOE Awards & Achievements	4 - 19
2	SOE Workshops	20 - 26
3	SOE Events	27 - 83

11 Awards at prestigious research and innovation competitions for APU students & staff

APU's SoE, SoT & CREDIT continues to pave the way for a more sustainable and efficient future via its collective creativity and teams' relentless innovation.



Students from Asia Pacific University of Technology and Innovation's (APU's) School of Engineering (SoE) and Center for Research and Development of IoT (CREDIT) were awarded 11 awards/medals in three prestigious research and innovation competitions in 2023.

They earned six medals (two gold, two silver, and two bronze) with their innovative design during the 5th Carnival of Research and Innovation (CRI) 2023, which was organised by the Research Management Innovation Centre (RMIC), Universiti Malaysia Kelantan (UMK).

Yee Han Xiang, Sio Ying Xuan, Ravivarma Sivathanan, and Sarim Ahmed Khalil brought their innovation to life with the gold-awarded, Fresh Fruit Bunch Ripeness Detection Autonomous Robot.

This ground-breaking invention analyses fruit ripeness using drones outfitted with advanced machine vision detecting systems, signifying an unprecedented development in agricultural technology.

DiveXtreme: Dive Into the Future Through Changeable Lenses, developed by Chin Kah Min, Achmad Fasya Dwiana Adwitya, Sin Jun Yan, Eythar Amir Kamil Mohamed, and Kuah Zhun Hoe, is another gold laureate that takes the diving experience to new heights.

These versatile goggles have interchangeable lenses, built-in tiny cameras, and ultrasonic hazard detection, thereby ensuring safety, accessibility, and excitement.

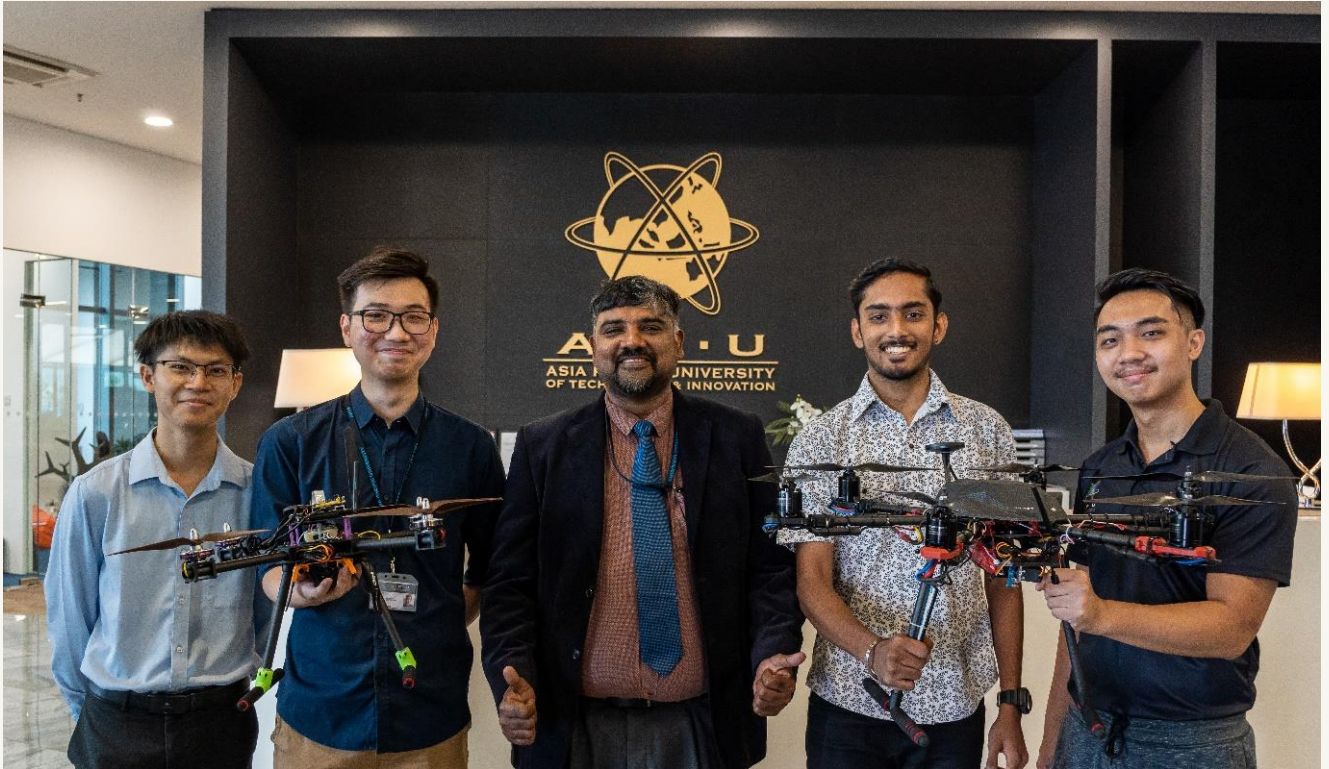
The silver prize was awarded to Areebah Sajjad Khattak, Darvvesvaar Sivapragasam, Zainab Yasmin, Yong Shuet Li, Durkesh Ravi Shankar, and Leng Yi Shun for WaveWonder, a powerful tool for maritime search and rescue missions equipped with SONAR sensors, high-resolution cameras, and an intelligent AI system.

The enhancement of mechanical properties of Zirconia Toughened Alumina developed by Ir. Ts. Dr. Alexander Chee Hon Cheong, Assoc. Prof. Ts. Dr. Sathish Kumar Selva Perumal, Dipl-Ing Ir. Narendran Ramasenderan, and Ir. Ts. Dr. Yvette Shaan-Li Susiapan under the leadership of the distinguished Head of School of Engineering (SoE) Assoc. Prof. Ir. Dr. Siva Kumar Sivanesan also won silver medals.

This novel method, which employs Two-Step Sintering, greatly improves the mechanical characteristics of ZTA, making it an excellent alternative for bio-implantations such as hip replacements.

Digital Twin Edge Solution Design for Smart Campus designed by Ravivarma Sivathanan, Sharen Chrisan Fabian Perera, Yazan Aldali, Sarim Ahmed Khalil, and Sabrina Mehjabeen, and Low-temperature Degradation Resistance of the Material for Total Hip Replacement produced by Ir. Ts. Dr. Alexander Chee Hon Cheong, Assoc. Prof. Ts. Dr. Sathish Kumar Selva Perumal, Dipl-Ing Ir. Narendran Ramasenderan, and Ir. Ts. Dr. Yvette Shaan-Li Susiapan won a bronze medal.

1st runner-up at the Intel® AI Global Impact Festival 2023

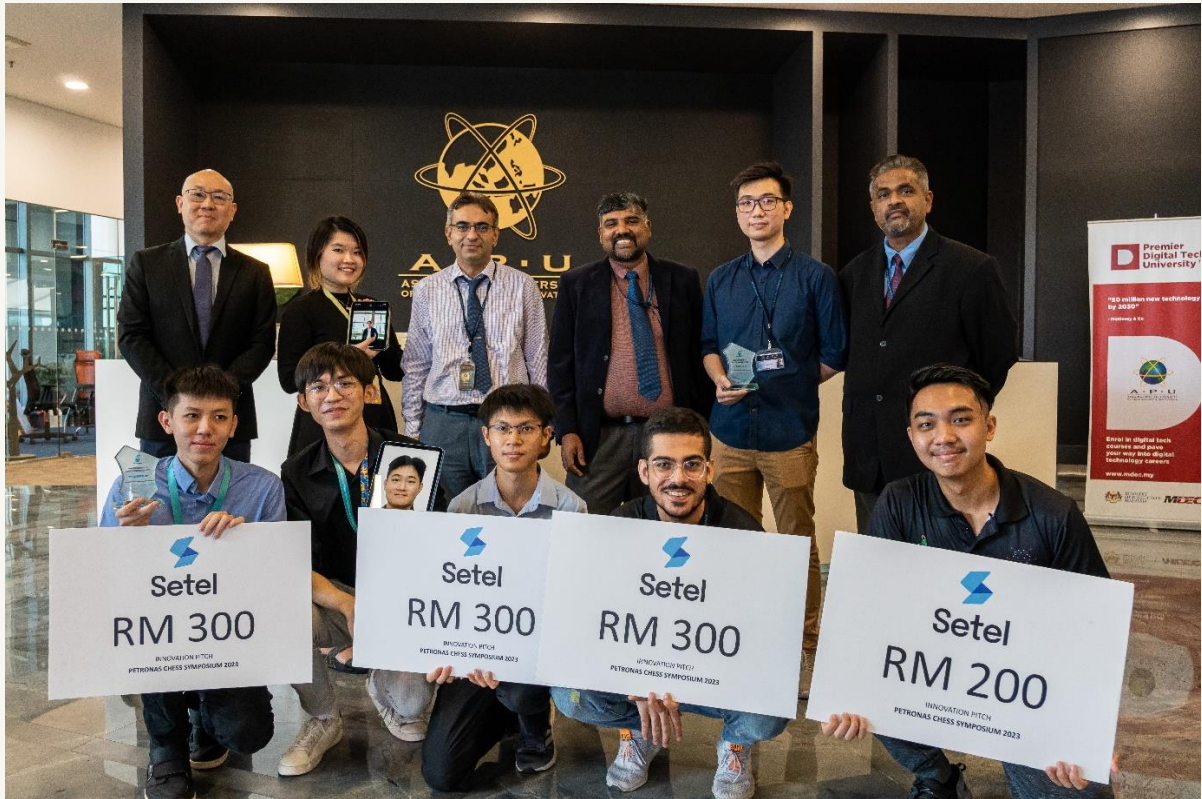


CREDIT members, Ng Joo Kiat, Rohit Thomas, Cajun Tai Ka Joon, and Cheng Yi Heng were named 1st runner-up winners in the Intel Readiness Program 18+ AI Program at the Intel® AI Global Impact Festival 2023, and received Intel merchandise worth over RM: 3,000.

Their trailblazing project, Rescue AI, is a transformative system that uses breakthrough technologies such as Intel Upboard, YOLOv8 optimized by Intel OpenVINO, WaveRNN, Tacotron models optimized by OpenVINO, and Intel RealSense to improve search and rescue operations.

This project was picked as the winner due to the capabilities of Rapid Object Detection and Localization, Fluent Natural Language Communication, and Advanced Obstacle Avoidance accessible on the drones they constructed.

4 teams win 2nd & 3rd runner-up at the Petronas CHESS Symposium 2023



The four teams that competed in the Petronas CHESS Symposium 2023 competition were crowned as the 2nd and 3rd runners-up winners.

The Engineering Department's Smart 3D Green Plastic Filament Monitoring and Management System team, Mohammed Saad Mahmood Al-Kubaisi, Sarim Ahmed Khalil, and Ryan Teo Han Ji, were named 2nd runners-up for their innovative plastic waste solutions. Their eco-friendly project was created to prevent waste and marine pollution, with a focus on the needs of 3D printing enthusiasts, professionals, educational institutions, and sustainable product manufacturers.

The Power Play team, led by Tang Jian Shiun and Tey Jia Yi, finished 2nd runners-up with their Intelligent Resource Maintenance System (IRMS), which provides real-time monitoring of resource conditions and accurate identification of potential oil reservoirs by integrating IoT sensors and employing data analytics. The system includes pipeline inspection and solar farm monitoring via cutting-edge micro drones controlled by swarm intelligence algorithms.

RescueAI team, Ng Joo Kiat, Cheng Yi Heng, and Cajun Tai Ka Joon; and Arcturus team, Ang Zi Yang and Cheryl Lim Wye Yee, were named 3rd runners-up for their ground-breaking Disaster Management Solution Equipped With Robotic Autonomy and a Mix of Machine Learning Algorithms Analysed Seismic and Oil Reservoir Data, aiming to supercharge Arcturus' operational efficiency.

All of these inspiring teams were mentored by renowned mentors such as the Head of CREDIT Dipl-Ing. Ir. Narendran Ramasenderan, the Head School of Engineering (SoE) Assoc. Prof. Ir. Dr. Sivakumar Sivanesan, the Chief Innovation & Enterprise Officer Prof. Ir. Eur. Ing. Ts. Dr. Vinesh Thiruchelvam, Ir. Ts. Dr. Alexander Chee Hon Cheong, Mr. Amad Arshad, Mr. Victor Khoo Shien Yang, and Head School of Computing (SoC), Assoc. Prof. Ts. Dr. Tan Chin Ike.

Disaster Management AI-powered Drone Wins Gold Medal at WICO 2023

RescueAI, the AI-powered drone that's taking disaster management to the next level, took home the highest invention technical award at WICO 2023 and advanced to the finals (business plan competition) of the DB-SNUbiz Global Startup Challenge 2023.



From left: Cheng Yi Heng, Ng Joo Kiat, Assoc. Prof. Ir. Dr. Siva Kumar Sivanesan, Dipl-Ing. Ir. Narendran Ramasenderan, Prof. Ir. Eur. Ing. Ts. Dr. Vinesh Thiruchelvam, Cajun Tai Ka Joon, Mr. Krishna Ravinchandra and Ang Jia Ze.

RescueAI: Smart City Disaster Management System with AI and Aerial Robotics, developed by a group of talented young engineers and researchers from **Asia Pacific University of Technology & Innovation (APU)**, was awarded a **Gold Medal** at the **12th World Invention Creativity Olympic (WICO) 2023**, the world's most prestigious invention competition.

The esteemed WICO 2023 Gold Medal Award is a Special Award given by the Turkish Inventors Association (TÜMMIAD) and a further recognition by the Toronto International Society of Innovation & Advanced Skills (TISIAS).

WICO 2023 was held in Seoul, South Korea; and organised by the Korea University Invention Association (KUIA) and sponsored by the National Assembly of the Republic of Korea.

Achievements

RescueAI was built by a team of experts and students from APU's School of Engineering (SoE) and the Center for Research and Development of IOT (CREDIT), led by **Dipl-Ing. Ir. Narendran Ramasenderan, Mr. Krishna Ravinchandra, Ng Joo Kiat, Cajun Tai Ka Joon, Ang Jia Ze, and Cheng Yi Heng.**

With the support of **APU Chief Innovation & Enterprise Officer Prof. Ir. Eur. Ing. Ts. Dr. Vinesh Thiruchelvam** and **Head SoE Assoc. Prof. Ir. Dr. Siva Kumar Sivanesan**, the team developed a pioneering prototype that stands as a beacon of innovation in disaster management.

RescueAI stood out among 1,200 inventions from 80 countries that were awarded the Gold Medal at WICO 2023. It used artificial intelligence (AI) and aerial robotics to collect real-time data on the environment, such as weather conditions, structural damage, and the location of people and assets.

This data is then used to create a digital twin of the disaster area, which can be used to simulate different scenarios and plan the most effective response.

The team is excited about the potential of RescueAI and is currently working on commercialising the system and making it available to governments and businesses around the world.

“We are honoured to have won the Gold Medal at WICO 2023,” said Dipl-Ing. Ir. Narendran, added, “The team’s success is a testament to the hard work and dedication of the entire team as well as the power of innovation and the potential of young people to make a difference in the world.”

“RescueAI demonstrates how technology may be applied to solve real-world problems and improve people’s lives.”



Delta APU team, top 5 finalists out of hundreds

Meanwhile, APU is represented by **Ng Joo Kiat**, **Chang Kah Boon**, and **Cheng Yi Heng** from team **Delta** in the **DB-SNUbiz Global Startup Challenge 2023**, where they advanced to the final round in Korea and won fully sponsored travel tickets and accommodations worth over RM13,000.

The DB-SNUbiz Global Startup Challenge 2023 is co-organized by the DB Group, a major South Korean corporation that specialises in cutting-edge green technology and financial services, and Seoul National University (SNU), Korea's top-ranked higher education institution.

Team Delta also featured RescueAI: Smart City Disaster Management System with AI and Aerial Robotics as a project intended to address the issues caused by climate change, which has resulted in extreme weather events such as heat waves and floods.

To replace the 2D dashboard, the team designed a 3D Digital Twin model, which provides a more comprehensible representation of flood and fire disasters. This Digital Twin model can run flood simulations that properly anticipate flood spread and impact on various places.

Drones equipped with sensors and pre-trained YOLOv8 models are used to record real-time data, while the Digital Twin model is constantly updated to ensure data accuracy.

A mobile app for reporting flood and fire incidents is also being developed. This app contains AI detection and alarm functions that simplify the reporting process and enable for quick responses to emergencies.

Even though the team did not win any awards in the finals, they were able to clearly articulate the problem they were trying to solve, the solution they developed, and the potential impact of their project.

They also had the opportunity to visit South Korea's capital, Seoul, and participate in a variety of activities, such as exploring Seoul Start-Up Hub, SNU and the DB Finance Centre.

RescueAI demonstrates how technology may be applied to solve real-world problems and enhance people's lives. It serves as a powerful reminder that the young can do great things — to create a future in which technology serves humanity, fostering a global community that is united in its quest for safety, innovation, and progress!

Young Scientist Network -Academy of Sciences Malaysia Colloquium Dialogue session with Ministry of Science, Technology and Innovation (MOSTI's) minister, YB Tuan Chang Lih Kang.



Dr. Reena is an affiliate of the Young Scientists Network of the Academy of Sciences Malaysia (YSN-ASM), and a team member of the Research Synergy working group. Recently, she attended YSN-ASM colloquium held at Nilai Springs Resort Hotel from 26th October till 28th October 2023.

During the dialogue session, YB Tuan Chang Lih Kang interacted with all the working groups of YSN-ASM. Questions and concerns from YSN-ASM members regarding the involvement of young scientists in the nation's STIE ecosystem were addressed. The outcome of this session is expected to bridge the gap between young scientists and the ministry, ultimately contributing to a stronger nation.

In addition, Dr. Reena contributed her ideas on planning 2024's agendas of YSN-ASM as a route to achieve the 10-10 MySTIE Framework. YSN-ASM is a platform that gathers enthusiastic and excellent young scientists of the country to create opportunities for better solutions to both national and international challenges. It represents the voice of young Malaysian scientists on issues at different levels to ensure scientific progress and sustainability of the country. Wishing Dr. Reena to have a greater impact on the World of Science.

Press release can be found from the link attached below:

<https://www.bernama.com/en/general/news.php?id=2239381>



Young Scientist Network -Academy of Sciences Malaysia Colloquium



On 10th August, Dr. Reena received the National Outstanding Innovator Award (university category) from EduCOOP, which honours the outstanding academicians at private institutions in Malaysia.

Out of 17 awards nationwide, Dr. Reena received the Outstanding Innovator Award as it acknowledged her significant contributions to her area of expertise- biosensing technology. Dr. Reena's key contribution towards the research field for the past 8 years was the winning factor for achieving this award.

Working on multiple research projects, especially Higher Institutions Centre of Excellence (HICoE) projects, such as the National Artificial Kidney project (UKM) and winning multiple research and innovation awards (MTE's COVID-19 International Innovation Award and Newport's Research Excellence Award) has proved her credibility as a committed scientist and as an innovator towards the research field. Her inspiring story of becoming engineering scientist also published in estidot.my. Link : <https://lnkd.in/gh7MYate>



Muzium Negara's 60th Anniversary features Digital Launch Gimmick by APU students

Thasne Rames, Low Yinn Ean, and Khor Chin Yee are excited and proud to be part of such an important event, and they describe it as a great learning experience.



Minister of National Unity Datuk Aaron Ago Dagang put his hands on Double to launch the montage screening during the launch of the Muzium Negara's 60th Anniversary.

Three students from **Asia Pacific University of Technology & Innovation (APU)** were involved in launching a gimmick for the **Muzium Negara's (National Museum) 60th Anniversary** at the **Muzium Negara, Kuala Lumpur** on 1st September 2023.

Thasne Rames and **Low Yinn Ean**, first-year diploma students in Electrical and Electronic Engineering from the Schools of Engineering (SoE), are already making waves in the robotics community. As members of the **Asia Pacific Centre of Robotics Engineering (APCORE)**, they have been developing innovative robots that could revolutionize the way we live and work.

Khor Chin Yee, a final-year Multimedia Technology student from the Schools of Computing (SoC), is also a force to be reckoned with. She recently completed an internship at **XR Studio**, where she worked on developing cutting-edge augmented reality (AR) and virtual reality (VR) experiences.

Achievements

These three young students are proof that the future of technology is bright. With their talent, creativity, and passion, they are sure to make a significant impact on the world

The gimmick used a robot called the **Double**, which is a telepresence robot that can be controlled online and is built with a gyro sensor to balance on two wheels and navigate using an online control with a phone or personal computer.

The robot was controlled by students for the launch and had a 3D-printed palm scanner attached to it, which **National Unity Minister Datuk Aaron Ago Dagang** used to launch the montage screening prepared by the XR Studio team.

The gimmick team was led by **Ts. Dr. Siti Azreena Mubin, Senior Lecturer/XR Studio Lead** and backed by **Ts. Suresh Gobee, School of Engineering (SoE) Senior Lecturer**.



From left: Ts. Suresh Gobee, Thasne Rames, Low Yinn Ean, Ts. Dr. Siti Azreena Mubin, and Khor Chin Yee were all key players behind the scenes of the Muzium Negara's 60th Anniversary gimmick.

The students were excited to be a part of such an important event, and they described it as a fantastic learning opportunity. They were grateful for the opportunity to take part in the launch and were proud to have contributed to the Muzium Negara's 60th Anniversary celebration.

The students were praised for their creativity and innovation. They believe that the robot will be a valuable asset to the Muzium Negara, and will help to make the museum more accessible to everyone.

Revolutionizing Elderly Care

A winning blend of innovation, compassion, and business acumen

Geriatric care management is experiencing growing demand worldwide due to the increasing longevity of people. According to the World Health Organization (WHO), the pace of population ageing is now much faster than in the past. The proportion of the world's population over 60 years old is projected to nearly double from 12% to 22% between 2015 and 2050.



Team Delta APU was the only team representing Malaysia in Thailand's Service Solution Design Competition 2023 and clinched second runner-up. Celebrating its achievement on campus were (L-R) Mr. Krishna, Yip Jin Xiong, Yong Shuet Li, Dr. Siva Kumar, Prof. Dr. Vinesh, Ir. Narendran, Cajun Tai Ka Joon (team lead), and Ang Jia Ze.

In an effort to assist a medical institution in identifying real-world solutions for preventing or reversing frailty in the elderly, Mahidol University International College (MUIC) in Thailand recently hosted the **Service Solution Design Competition 2023**. This competition brought together talented individuals from diverse backgrounds and countries.



The main highlight of their competition journey in Thailand by winning second runner-up. From left - Mr. Krishna (mentor), Yip Jin Xiong, Yong Shuet Li, Ang Jia Ze, Cajun Tai Ka Joon (team lead).

Team Delta APU, representing Malaysia and hailing from the Asia Pacific University of Technology & Innovation (APU), comprised four Bachelor of Engineering in Mechatronics Engineering with Honours students: **Cajun Tai Ka Joon, Ang Jia Ze, Yong Shuet Li, and Yip Jin Xiong.**

The competition's goal was to devise the best service solution to enhance the physical, mental, and emotional well-being of elderly patients. Additionally, these solutions needed to incorporate a feasible business aspect, aesthetic packaging design, and promotional value.

Team Delta APU's winning solution involved developing an AI-integrated platform with a camera capable of tracking the daily activities of the elderly without requiring them to wear any additional devices. This innovation could be readily utilised by elderly senior citizens, their caregivers, and geriatricians. The team not only secured the second runner-up position with a prize of 10,000 Baht but also gained valuable insights into integrating business acumen with engineering.

APU's SoE Pioneers Metrology Education with ZEISS Certified Trainers

Ir. Ts. Dr. Alexander Chee Hon Cheong, Ts. Dr. Arun Seeralan, Mr. Rosli Yusop, and Mr. Low Yee San have been certified as ZEISS Metrology Trainers; making them the only authorised trainers of ZEISS metrology lesson in Malaysia, and it will be integrated into APU's Engineering Design module



From left: Mr. Low Yee San, Ir. Ts. Dr. Alexander Chee Hon Cheong, Mr. Prasert Saetang (ZEISS Regional Application Specialist from Thailand), Mr. Rosli Yusop and Ts. Dr. Arun Seeralan.

Four outstanding academics from **Asia Pacific University of Technology & Innovation's (APU) School of Engineering (SoE)** have been named '**ZEISS Certified Trainers**', a ground-breaking move that elevates the university's engineering education to new heights.

This outstanding achievement establishes **Ir. Ts. Dr. Alexander Chee Hon Cheong, Ts. Dr. Arun Seeralan, Mr. Rosli Yusop, and Mr. Low Yee San** as the solely authorised trainers of ZEISS lessons in Malaysia; covering the vital discipline of metrology, the science of measurement, which lies at the core of engineering to ensure the precision and accuracy of products and processes.

ZEISS-certified metrology, a cornerstone of this intricate field, finds its applications in a wide spectrum of manufacturing and quality control endeavours.

Dimensional measurement, surface inspection, form and contour measurement, tool calibration, and 3D scanning are some of the most common uses in various kinds of industries, including automotive, aerospace, medical devices, electronics, and consumer goods.

The integration of these lessons into APU's Engineering Design module demonstrates the university's unwavering commitment to providing students with industry-aligned education that will prepare them for excellent careers in the ever-evolving engineering landscape.

With their valuable metrology knowledge and strong commitment to teaching excellence, the four will enrich the learning experience of APU engineering students, propelling them to academic and professional success by combining ZEISS metrology lessons into Engineering Design module.

“The recognition as ZEISS Certified Trainers of SoE lecturers Ir. Ts. Dr. Alexander, Ts. Dr. Arun, Mr. Rosli, and Mr. Low is an important step forward in the university's ongoing efforts to bridge the gap between academics and industry.

“With its unwavering commitment to providing students with industry-relevant education, APU paves the way for their successful careers in the dynamic engineering landscape, ensuring that they are not only equipped with the technical expertise but also the industry-ready skills to excel in their chosen fields,” said **Assoc. Prof. Ir. Dr. Siva Kumar Sivanesan, Head of SoE.**

He added that the SoE congratulates its lecturers on their accomplishments and looks forward to working with ZEISS on future metrology-related activities.



ZEISS industrial metrology machine for metalworking and fabrication.

As APU continues to soar to new heights in engineering education, the university's ZEISS Certified Trainers stands as a testament to its dedication to providing students with the best possible educational experience. The School of Engineering (SoE) lecturers were the first in Malaysia to receive this certification, which included rigorous training and assessment in metrology and geometric dimensioning and tolerancing (GD&T) using the ZEISS CALYPSO software.

“ZEISS metrology systems, renowned for their high precision and reliability, empower manufacturers to meticulously inspect and measure their products, ensuring that they meet stringent quality standards.

“It plays a critical role in ensuring the integrity and operation of a wide range of products, from inspecting the delicate surfaces of medical equipment to validating the measurements of automotive components,” said **Ir. Ts. Dr. Alexander** representing the four of them.

ZEISS, a global leader in optical and optoelectronic technology, offers a range of metrology solutions, including coordinate measuring machines (CMMs), optical scanners, software, and services.

The ZEISS Certified Trainer programme aims to provide participants with the knowledge and abilities needed to utilise ZEISS CALYPSO effectively and efficiently, as well as to train others on the software. There are three levels to the programme: basic, advanced, and expert. Participants must successfully finish each stage before moving on to the next stage.

Through the success of the participants, SoE became potentially selected by ZEISS as the hub for the certification programme in Malaysia, as ZEISS plans to introduce the programme to other institutions of higher learning in the country. This will help to enhance the quality of engineering education and research in Malaysia, as well as to meet the demand for skilled metrology professionals in the industry.



In Malaysia, the first batch of recipients were Ir. Ts. Dr. Alexander, Ts. Dr. Arun, Mr. Rosli, and Mr. Low.

MATLAB 7th July 2023



This workshop was held to make the students aware of one of the frequently used applications in the engineering world. This workshop was a Free interactive workshop using MATLAB. This workshop was held between 10am to 12pm on 7th July. E- certificates were provided for the students, and they were provided with activities to learn MATLAB application better. Speaker Hazwani Mohd Rosli was requested to conduct the workshop for the students. Once she gave her availability for the workshop the poster was made to advertise the workshop among the students.

The registration QR was attached in the poster so that the students could easily register themselves for the workshop. The workshop was conducted for around 2 hours and after the workshop pictures were taken. The students were asked to fill the attendance sheet after the workshop.



Smart Modernistic in Electronics and Communication 18th July 2023



“Smart Modernistic in Electronics and Communications” was a talk organized by the IMechE APU SC. The project manager for this event was Ikraam Ismaeel Kurimbux who was assisted by the assistant project manager, Zubair Dhonye and the other APU IMechE SC committee members. This talk was conducted by Assoc. Prof. Dr. Selvakumar Samuel Mariappan, an APU lecturer. The focus of the talk was on understanding and embracing the transformative power of smart modernistic solutions that are revolutionizing the world of technology.

The session began with an acknowledgment of the rapidly evolving era of technology and its importance in our lives. The speaker emphasized the need to stay updated and be aware of cutting-edge technologies and how they are shaping the fields of electronics and communication. Throughout the talk, the speaker highlighted how the combination of advanced technologies is driving significant changes in various aspects of our lives, including our homes, businesses, and cities. The role of smart gadgets, artificial intelligence, and the Internet of Things in this transformation was discussed in detail.



Throughout the discussion, the importance of responsible innovation was emphasized. The talk highlighted that while these clever modernistic technologies have the potential to improve lives, there are also challenges and ethical issues that need to be carefully considered, especially with their quick development.

In conclusion, the talk "Smart Modernistic in Electronics and Communication" provided an insightful overview of the transformative power of cutting-edge technologies in electronics and communication, covering topics such as wireless communication, wearable electronics, and responsible innovation. The participants gained valuable insights into how these technologies are reshaping the world and how to navigate the ethical challenges that come with their rapid advancement.

ASEAN Electrotechnical Symposium & Exhibition (IESE) 2023 on 'Standards Drive ESG Excellence' SoE Senior Lecturer Ir Eur Ing Ts Dr Lau Chee Yong Chaired and Helmed the session

Our esteemed Senior Lecturer at the School of Engineering, Ir. Eur Ing Ts Dr. Lau Chee Yong, acquired the esteemed position of Chairman for the ASEAN Electrotechnical Symposium & Exhibition (IESE) in the year 2023. Dr. Lau recently presided over this significant symposium, which transpired on the 6th and 7th of September 2023 at the Kuala Lumpur Convention Centre (KLCC). This distinguished appointment, bestowed upon him by the Department of Standards Malaysia (DSM), finds its roots in his participation in the International Electrotechnical Commission (IEC) Young Professional Workshop held in San Francisco, USA, in November 2022.

In this capacity, Dr. Lau was granted the honor of chairing this year's symposium, which served as a critical platform for fostering awareness, facilitating the exchange of expert insights, and disseminating information pertinent to the latest developments in electrotechnical standards.



Dr Lau giving opening remarks

The central theme of this year's IESE was "Standards Drive ESG Excellence." As Environmental, Social, and Governance (ESG) considerations have increasingly come to the forefront of global discussions, there arises a compelling need for expert perspectives on the latest developments at the ASEAN level. In this regard, we were privileged to have welcomed esteemed speakers from diverse domains.

The proceedings commenced with a welcoming address by Chairman Dr. Lau, followed by opening remarks from the President of the Institution of Engineers, Malaysia (IEM), Ir. Prof Dr. Norlida Buniyamin. The event's guest of honor was Datuk Hanafi Sakri, Deputy Secretary General (Industry) at the Ministry of Investment, Trade, and Industry (MITI), who delivered an insightful address to the distinguished audience.



Left: Guest of Honour Datuk Hanafi Sakri, Deputy Secretary General (Industry) at the Ministry of Investment, Trade, and Industry (MITI), Right: President of the Institution of Engineers, Malaysia (IEM), Ir. Prof Dr. Norlida Buniyamin



Dr Lau and Ir Prof Dr Norlida presenting token of appreciation to Datuk Hanafi

The symposium featured four keynote addresses by eminent figures:

1. Mr. Vimal Mahendru, IEC Vice President and Chair of the Standardization Management Board (SMB).
2. Mr. Shawn Paulsen, IEC Vice President and Chair of the Conformity Assessment Board (CAB).
3. Mr. Hussalmizzar Hussain, Senior Director of the Standardization Division at the Department of Standards Malaysia.
4. Pn Nurhafiza binti Mohamed Hasan, Director of Safety Regulation at the Energy Commission.



From the left: Mr Vimal, Mr Shawn, Mr Hussalmizzar, Pn Nurhafiza

Furthermore, the event encompassed various sub-themes, each featuring distinguished speakers:

Sub-theme 1: Energy Efficient Buildings

- Ir. Ahmad Izdihar, Past President of the Malaysia Green Building Council (malaysiaGBC).
- Ar. Zulkifli Zahari, President of the Malaysia Association of Energy Service Companies (MAESCO) - Energy Efficient Building.

Sub-theme 2: Climate Change and Carbon Footprint Reduction

- Ts. Siti Birkha bt Mohd Ali, Institution of Engineering & Technology (IET).
- Dr. Kanendra Naidu, Institute of Electrical and Electronics Engineers (IEEE).

Sub-theme 3: ASEAN Power on Electrical Standards, featured esteemed speakers from ASEAN:

1. H.E. Dr. Chan Sodavath, Secretary of State, Ministry of Mines and Energy, Cambodia.
2. Ir. Chin Lee Tuck, Chairman of Engineering Division and Vice President of Pertubuhan Ukur Jurutera & Arkitek (PUJA), Brunei.
3. Mr. Paul Loke, the IEC TC64/WG43 Convenor.
4. Dr. Florigo C. Varona, Philippine Technological Council (PTC).



From left: Dr Chan (Cambodia), Ir Chin (Brunei), Mr Paul (Singapore) and Dr Florigo (Phillipines)

The second day of the symposium focused on the sub-theme "Sustainable Energy Solutions and Green Technology," presented in a forum format. Distinguished panelists included Mr. Eugene Quah, Country General Manager for Malaysia at Schneider Electric; Ir. Ts Zulkiflee Umar, Deputy Director of Energy Efficiency & Conservation at the Department of Industry Operation, Energy Commission Malaysia; and Ir. Ts. Vivekasugha Alif Bin Gunaan, GM of Strategic Management & Organizational Development at TNB Energy Services Sdn Bhd. The forum, moderated by IESE Chairman Dr. Lau, engaged in discussions on various pertinent topics, including ESG, EV development, Electrical Standards and Safety, Energy Efficiency, and Energy Audit. This engaging forum spanned two hours, eliciting encouraging audience feedback and fostering interactive Q&A sessions. The sub-theme concluded with speeches from Dr. Che Hang Seng of The Electrical and Electronics Association of Malaysia (TEEAM) and Ir. Siti Nor bt Hassan of Jabatan Kerja Raya Malaysia (JKR).



Forum session moderated by Dr Lau (from left), with the panelist Ir Zulkiflee, Ir Vivekasugha and Mr Eugene

The successful execution of this event is attributed to the support extended by IEM and APU. We extend our heartfelt congratulations to Dr. Lau on this remarkable achievement

INNOTECH 11th Aug 2023



InnoTech 2.0, is an event organized by the APU IMechE SC, which showcased the brilliance of final year engineering students as they presented their innovative projects in a bid to secure the top prize. The event highlighted a wide range of cutting-edge solutions spanning various engineering domains. The core of InnoTech 2.0 was the projects exhibition, featuring numerous booths where students enthusiastically explained their projects. Attendees engaged with creators, gaining insights into the projects' technical intricacies and real-world applications. The judges were all from APU itself and they assessed projects based on innovation, technical finesse, societal impact, and presentation.

Empowering Tomorrow's Innovators A CSR Workshop on Basic Electronics

In a world that is becoming increasingly reliant on technology, nurturing the next generation of engineers and innovators is a responsibility that should be shouldered by both educational institutions and the corporate sector. Recognizing this need, Ir Eur Ing Ts Dr. Lau Chee Yong, a dedicated educator from the School of Engineering at Asia Pacific University of Technology and Innovation, took a proactive step towards fostering scientific curiosity and engineering skills among secondary school students. Dr. Lau recently conducted a remarkable Corporate Social Responsibility (CSR) workshop at SMK Taman University 2 in Johor Bahru, Malaysia, where he introduced 40 students to the fascinating world of basic electronics.

The workshop aimed to provide these young minds with a foundational understanding of electronics, particularly focusing on the concept of resistors and their various applications. In a world inundated with electronic devices, understanding the fundamentals of electronic components is an essential skill that can empower students to not only be consumers of technology but also creators and problem solvers.

The workshop was structured to ensure that the students not only grasped theoretical concepts but also gained practical experience. To achieve this, Dr. Lau together with Mr. Cheong Jian Wei from Student Services, who provided valuable assistance throughout the workshop.



The following activities were conducted during the workshop:

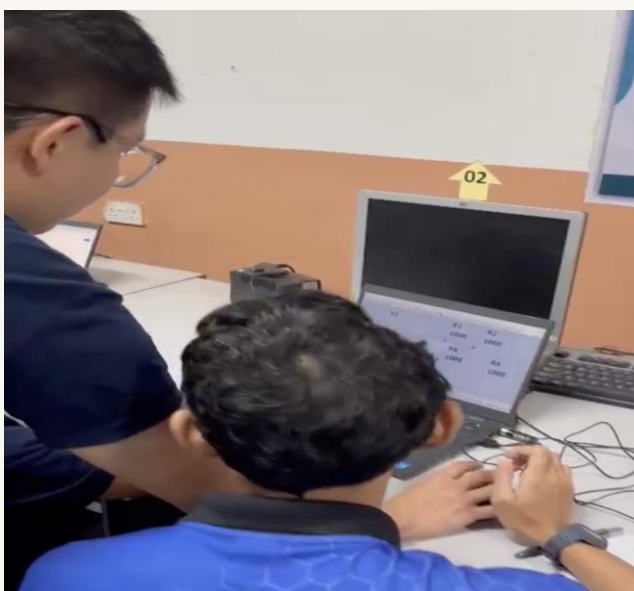
- 1. Understanding Resistors:** The core of the workshop revolved around resistors - their function, importance, and various types. Dr. Lau passionately explained the significance of resistors in electronic circuits, highlighting the methods to control the flow of electric current and the role they play in voltage division.
- 2. Connection Types:** Students were guided through the different ways resistors can be connected in electronic circuits. This hands-on approach allowed them to appreciate the real-world applications of resistors in series and parallel configurations.
- 3. Basic Calculations:** Mathematics and electronics go hand in hand. The workshop incorporated basic calculations related to resistors, enabling students to calculate resistance values for different configurations.
- 4. Simulation Using LTSpice:** To bridge the gap between theory and practical application, students were introduced to LTSpice, a widely used electronic circuit simulation software. This allowed them to visualize and experiment with circuit designs in a safe and controlled environment.
- 5. Actual Experimentation:** The highlight of the workshop was the opportunity for students to work with real resistors and digital multimeters. Under Dr. Lau and Mr. Cheong's guidance, they built simple circuits, measured resistance values, and observed the process of resistor values changed that affected the circuit behavior.
- 6. Reading Resistor Color Codes:** Understanding the color code system used on resistors can be a daunting task for beginners. Mr. Cheong Jian Wei played a pivotal role in assisting the students to decode resistor color bands, making this seemingly complex task much more accessible.



Dr. Lau's and Mr. Cheong's commitment to nurturing the future young engineering talent was evident throughout the workshop. Their passion for electronics, coupled with their engaging teaching style, left a lasting impact on the students. They left the workshop not only with a better understanding of electronics but also with a newfound enthusiasm for the subject.

The significance of this CSR workshop extends beyond individual skill development. It aligns with the STEM (Science, Technology, Engineering, and Mathematics) education initiatives set forth by the government. STEM education is vital in preparing students for the challenges of the future, ensuring that they are equipped with the skills and knowledge needed to excel in an increasingly technology-driven world.

In conclusion, Ir Eur Ing Ts Dr. Lau Chee Yong's and Mr. Cheong Jian Wei's joint CSR workshop at SMK Taman University 2 in Johor Bahru are a shining example of the good collaboration between academia and industry to enrich the educational experiences of students. By instilling a passion for electronics and STEM subjects, this workshop not only equips students with valuable knowledge but also inspires them to pursue careers in engineering and innovation. Such initiatives are instrumental in building a brighter and more technologically adept future for the next generation.



APU Experts sharing Knowledge at Savitha Engineering College Chennai (India) 13th Oct 2023

Three distinguished educators from the Asia Pacific University of Technology and Innovation, namely Ir Eur Ing Ts Dr. Lau Chee Yong, Ir Ts Dr. Alexander Chee Hon Cheong, and Mary Ting, were graciously extended an invitation by the Saveetha Institute of Medical and Technical Sciences (SIMATS) to participate in a comprehensive two-week faculty exchange program.

Heartly Welcome



Dr. BOGDAN CRISTIAN FLOREA
Associate Professors at the Faculty of Electronics, Telecommunications and Information Technology, National University of Science and Technology, Politehnica Bucharest, Romania.



Dr. LAU CHEE YONG
Professor, Asia Pacific University of Technology & Innovation, Malaysia.



Dr. ȘERBAN GEORGICĂ OBREJA
Associate Professors at the Faculty of Electronics, Telecommunications and Information Technology, National University of Science and Technology, Politehnica Bucharest, Romania.



Dr. MARY TING
Professor, Asia Pacific University of Technology & Innovation, Malaysia.



Dr. ALEXANDER CHEE HON CHEONG
Professor, Asia Pacific University of Technology & Innovation, Malaysia.



Dr. SIOW CHUN LIM
Professor, National University of Science and Technology, Politehnica Bucharest, Romania.



Dr. DRAGOȘ DANIEL ȚĂRALUNGĂ
Associate Professors at the Faculty of Electronics, Telecommunications and Information Technology, National University of Science and Technology, Politehnica Bucharest, Romania.

Event Date: 09.10.2023 to 21.10.2023

www.saveetha.com
simats_school_of_engineering
simats school of engineering
SIMATS Engineering



Within the program, a series of captivating guest lectures were conducted. Dr. Lau Chee Yong expertly covered Analogue Circuits, Dr. Alexander Chee Hon Cheong delved into Sensors and Transducers, while Ms. Mary Ting adeptly handled Python Programming. The guest lecture sessions proved to be a resounding success, drawing an enthusiastic audience of over 100 students at SIMATS.

Events



On the 13th of October 2023, Dr. Lau Chee Yong and Dr. Alexander Chee Hon Cheong were honored guests, delivering a thought-provoking talk titled "Higher Education in Healthcare" at Kalam Hall within the Department of Biomedical Engineering at Saveetha Engineering College. The event was skillfully chair by Professor Dr. M. Moorthi, the esteemed Head of the Department.

SAVEETHA ENGINEERING COLLEGE **AUTONOMOUS**
AFFILIATED TO ANNA UNIVERSITY

IEEE

Department of Bio Medical Engineering & Medical Electronics
Saveetha IEEE Student Branch

Guest lecture on

HIGHER EDUCATION IN HEALTHCARE

12th October, 2023 02.30 PM - 03.30 PM

Venue: Kalam Hall

Resource Persons

Ir. Ts. Dr. Alexander Chee Hon Cheong
Programme Leader / Senior Lecturer
School of Engineering,
Asia Pacific University of Technology & Innovation,
Malaysia.

Ir. Eur. Ing. Ts. Dr. Lau Chee Yong
Programme Leader / Senior Lecturer
School of Engineering, Asia Pacific
University of Technology & Innovation,
Malaysia.

INDUSTRY 5.0 Ready Curriculum Imparting 21st Century Skills www.saveetha.ac.in

During their speech, Dr. Alexander provided valuable insights into the Asia Pacific University of Technology and Innovation, offering an overview, sharing notable achievements, outlining the School of Engineering's programs, and highlighting the institution's activities and profile. Meanwhile, Dr. Lau delved into the realm of Higher Education in Healthcare, offering his wealth of experience and sharing his forward-looking perspectives with the attentive students.

Following the engaging talks, Dr. Lau and Dr. Alex were extended the honor of a meeting with Professor Dr. N. Duraipandian, the Principal of Saveetha Engineering College. This meeting succeeded, as it served as a platform for discussions on the potential for collaboration between Asia Pacific University and Saveetha Engineering College. Various plans and future initiatives were explored, and a consensus was reached, signaling a promising collaboration on the horizon.



On the 20th of October 2023, Dr. Alex, Ms. Mary, and Dr. Lau were distinguished guests at the grand closing ceremony, where they were graciously presented with wooden plaques as tokens of appreciation by none other than Dr. N. M. Veeraiyan, the esteemed President of SIMATS. Following this honor, they were cordially invited to partake in a delightful high tea session.

In sum, this faculty exchange program stands as a resounding success, characterized by the rich exchange of cultures, the sharing of knowledge, the enhancement of teaching and learning processes, and the opening of abundant opportunities for research collaboration. It is our fervent hope that APU and SIMATS will continue to cultivate a bountiful collaboration in the years to come.



Memorandum Of Agreement (MOA) between APU AND VIT On Aug 16, 2023



Memorandum of Agreement (MOA) between Asia Pacific University (APU) and Vellore Institute of Technology (VIT) signing ceremony on 16th August 2023 has been initiated **Dr. Chandrasekharan Nataraj, Senior Lecturer from School of Engineering**. He was delighted to provide with a comprehensive report on the momentous event that took place on August 16, 2023, wherein Asia Pacific University (APU) and Vellore Institute of Technology (VIT) signed a Memorandum of Agreement (MOA) to foster collaboration and strengthen their academic and research ties.

On August 16, 2023, APU, and VIT, two renowned and globally recognized educational institutions, formalized their commitment to a strategic partnership through the signing of an MOA. This significant event took place at the Asia Pacific University, Malaysia, witnessed by key representatives, faculty members, and stakeholders from both institutions. Two representatives, Associate Professors K C Sriharipriya and Dr. John Christopher Clement from VIT, India are visited the APU two days to give the workshop to our APU students and signing MOA with APU physically. The event was opened by Ts. Dr. Yvette Shaan-Li Susiapan, Senior Lecturer, APU. Following that, Dr. Chandrasekharan Nataraj gave a warm welcome to all attendees and thanked them for coming.

He explained that the final stage of MOA signing did not occur immediately and took close to 3 months. Additionally, he noted that during the final three months leading up to this signing event, they had completed a few steps, including the creation of appropriate paperwork and a partnership form, submission of those documents for legal verification, and finally permission from the chancellery office. When this activity was first started, APU and VIT agreed to take this collaboration for the benefit of both universities.

They also set out the goals for this activity and stated that it would be a straightforward paper document. To strengthen their promise, yesterday the hands-on workshop was conducted to APU students physically. Dr John Christopher and Dr Sriharipriya from the VIT were the trainers.



Key Highlights of the Event:

- **Signing Ceremony:** The MOA signing ceremony was attended by Prof. Dr. Ho Chin Kuan, Vice Chancellor of APU, and Dr. John Christopher Clement, Associate Professor, VIT. Their presence symbolized the commitment of both institutions to the partnership.
- **Speeches:** Dr. Chandrasekharan Nataraj, APU and Dr. K C Sriharipriya, VIT delivered inspiring speeches highlighting the significance of this collaboration and their shared vision for the future.
- **Exchange of Documents:** The MOA documents were exchanged, signed, and sealed, formalizing the partnership between APU and VIT.
- **Networking Opportunities:** Attendees had the opportunity to network and engage in meaningful discussions during a post-ceremony reception.

The primary purpose of this MOA is to promote collaboration in various areas, including but not limited to:

- 1. Academic Exchange Programs:** The MOA facilitates student and faculty exchange programs, allowing students to gain international exposure and access to a wider range of courses and research opportunities.
- 2. Research Collaborations:** APU and VIT will jointly undertake research projects, share research findings, and collaborate on academic publications, fostering innovation and knowledge sharing.
- 3. Joint Seminars and Workshops:** Both institutions will organize seminars, workshops, and conferences to encourage intellectual discourse and the exchange of ideas among students and faculty.
- 4. Cultural and Language Exchange:** The MOA promotes cultural and language exchange programs, enhancing cross-cultural understanding and global perspectives among students.

5. Expected Outcomes: This collaboration between APU and VIT is expected to yield several positive outcomes, including:

- Enhanced educational opportunities for students through cross-institutional courses and programs.
- A broader research scope with access to diverse resources and expertise.
- An enriched cultural and global experience for students, promoting cultural sensitivity and open-mindedness.
- Strengthened international partnerships for both institutions, leading to increased global recognition.

To conclude the MOA signing event between APU and VIT on August 16, 2023, marked the beginning of an exciting journey towards academic and research excellence. This partnership holds immense promise for both institutions and their stakeholders, with the potential to positively impact education, research, and global collaboration.

Drone Academy Asia Industrial Visit

8th Nov 2023



The visit participated by 25 students to Drone Academy Asia in Cyberjaya included a comprehensive agenda, company introduction, company tour, and Q&A sessions with experts from Drone Academy Asia. Students had the opportunity to explore various aspects of drone technology, from design and operation to applications in real life to fulfill industry needs.

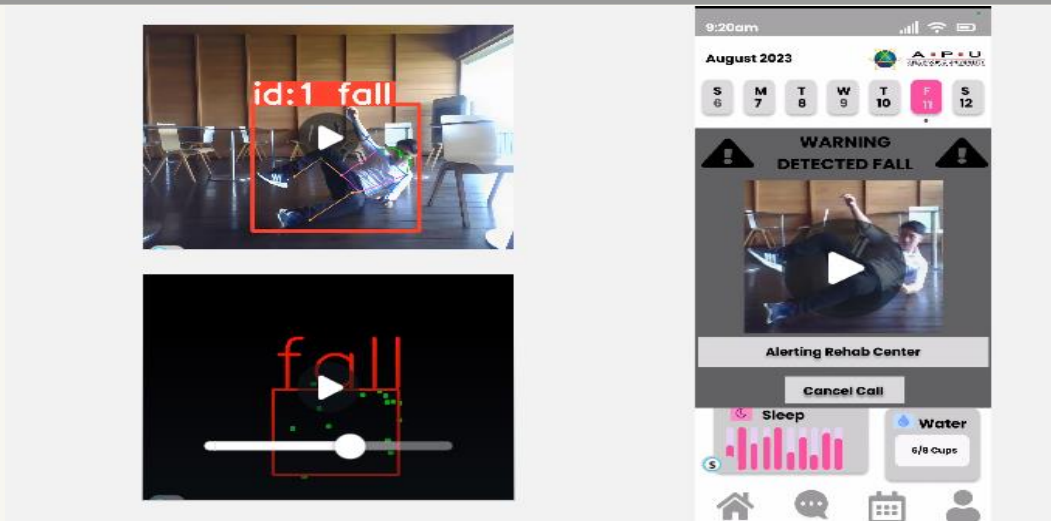
APU IEEE Student Branch and IASS promoted this event on their respective social media platforms, namely Facebook, Instagram, and LinkedIn. The Discord servers and several Teams channels have also been used for promoting this event. The event poster has also been promoted using APU media platforms such as APSPACE and campus TV.

The bus departed from APU at 09:20 AM and arrived there at 10:00 AM. The trip started with the briefing and during the event, there was a quiz game, where two students won caps as a prize. After that, the trip continued with the presentation of the drones used and the training area. This visit was served as a productive event since the instructors and students were interacting on various aspects. Students also got a brief idea on why drones are used. The students received an e-certificate for attending the event.



Everyone assembled at the cafeteria sharp on time and the trip ended with everything was planned and smoothly. 25 students successfully attended this event.

Rehabilitation Projects Designed and Developed by CREDIT



AI-integrated app developed by Team Delta APU comes with a camera and a fall detection alert feature that is capable of tracking the daily activities of the elderly.

The event spanned five days from August 7th to 11th and took place at MUIC, Thailand's first public international college located in Nakhon Pathom Province, central Thailand. Participants were accommodated on campus and had the opportunity to visit the Siriraj Academic Center of Geriatric Medicine at Siriraj Hospital and a medical technology company for real-world case studies and field observations. They also engaged in a design thinking simulation workshop and participated in the Biodesign innovation session, culminating in the pitching presentations.

“The participants were guided to rehabilitation wards and rooms for geriatric patients. They were briefed on the structure and functionalities of the patients' rooms, emphasising that the pitching competition ideas should revolve around these aspects,” explained **Mr. Krishna Ravinchandra**, Tutor at APU's Center for Research and Development of IoT (CREDIT), who served as the team's mentor throughout the journey.

The organiser highlighted the importance of understanding the challenges faced by geriatric patients and their daily needs. Each participating team conducted interviews with elderly individuals aged between 60 and 75 years, providing valuable insights. They were also tasked with a simulation exercise, which required them to wear back braces, knee braces, ankle weights, and gloves to simulate the experience of being an elderly person.



Cajun Tai Ka Joon (from left) assisting Yip Jin Xiong who wears back braces, knee braces, ankle weights, and gloves to simulate the experience of being an elderly person.

In preparation for the pitching event, a speaker was invited to provide insights into creating business models and effectively presenting them to potential investors. The talk focused on identifying commercial pain points, making products attractive and sellable, and also as a reminder to contesters to highlight product novelties when pitching ideas to judges who played the role of investors.

Cajun Tai Ka Joon, the team lead, highlighted the competition's eye-opening nature, emphasising the importance of incorporating a business mindset into engineering. He emphasised that while engineers may have innovative ideas, success also hinges on effective product commercialisation and marketing.



The members of Team Delta APU learning the importance of incorporating a business mindset into engineering - identifying commercial pain points, and making products attractive and sellable.

Team Delta APU's project aimed to enhance the well-being of elderly individuals through comprehensive health monitoring, user-friendly interfaces, and timely assistance during emergencies. Their innovative approach, which prioritised privacy and non-intrusiveness over wearable devices, resonated with the judging panel.

Regarding their overall achievement, Tai credited collaboration and teamwork as critical factors in their success. Each team member possessed unique skills: Ang Jia Ze excelled in hardware design, contributing to the implementation of the camera prototype; Yip Jin Xiong specialised in the business and finance aspects, shaping the marketing strategy; Yong Shuet Li demonstrated proficiency in both software development for the app design and business and finance for creating the prototype's business model. Tai himself excelled in software development.

Ir. Narendran Ramasenderan, Senior Lecturer of APU's School of Engineering (SoE) and head of CREDIT, applauded the team's achievement, and commented, “CREDIT's students demonstrate a fervent dedication to refining their engineering skills to address vital social issues. While they mastered deployment, prototyping, and field testing, the competition offered comprehensive development through immersive business planning sessions. This will quipped them with a robust understanding of business dynamics, creating well-rounded professionals ready to make a meaningful impact.”

Hands-on Training in “MACHINE LEARNING FOR USING PYTHON in 5G NETWORK ” Aug 15, 2023



The hands-on training titled "Machine Learning for 5G using Python" was held on August 15, 2023, from 09.00 AM to 10.30 AM at the APU, Malaysia and attended by 26 students. It was organised by **Dr. Chandrasekharan Nataraj, Senior Lecturer, School of Engineering, APU** for the benefit of all APU undergraduate and postgraduate students to give them a solid understanding of using machine learning for 5G applications.

The trainer are **Dr J. Christopher Clement and Dr K C Sriharipriya, Associate Professor from Vellore Institute of Technology (VIT), Vellore, India.** They are well-known professional trainer who excels in machine learning and 5G technologies. The purpose of this training was to provide the essential skills in machine learning and instruct the students to shape the 5G communication module using Machine learning techniques. The participants explored some techniques useful to deal with 5G communication protocol for various applications. This design talent would be beneficial for assignments, projects, and other competitions.



Dr K. C. Sriharipriya described the motivations and difficulties associated with implementing Machine Learning (ML) and Artificial Intelligence (AI) in 5G and subsequent wireless networks, including the need for scalability, latency constraints, increasing complexity, and heterogeneity. Further, Dr. John Christopher demonstrated the use of ML and AI to design and optimise the physical layer of wireless networks, including modulation, coding, beamforming, channel estimates, etc. for 5G and beyond. He also shared some of the current practices such as federated learning, deep learning, and reinforcement learning using virtual platforms. With the help of the trainers, students practised the piece of real-time work and experienced the implementation strategy of machine learning for 5G applications. The students were given good appreciation to the trainers for their significant effort and their willingness to design 5G and machine learning-based small-scale projects.

Finally, the students actively engaged in a debate with instructors on the advantages and disadvantages of various tactics, focusing on open questions and potential directions for future research.

Technical talk on “Early Breast Cancer Detection Using Thermography and AI” June 26, 2023



The technical talk "Early Breast Cancer Detection Using Thermography and AI" was held on June 26, 2023, from 10.00 AM to 11.30 AM at the APU, Malaysia. It was organised by **Dr. Chandrasekharan Nataraj, Senior Lecturer, School of Engineering, APU** for all APU undergraduate and postgraduate students to give them a solid understanding of thermography and Artificial Intelligence (AI). The main purpose of this session is to create a platform for exchanging knowledge in terms of technical facts, market trends, and technological innovations. It is part of our commitment to provide our engineering students with the most up-to-date technical standards.

Dr. Mohammed Hadi Habaebi, Professor from ECE Department, International Islamic University, Malaysia (IIUM) was invited as the resource person for this technical talk. Dr. Habaebi (Senior Member, IEEE) received a degree from the Civil Aviation and Meteorology High Institute in Libya (1991), an M.Sc. degree in electrical engineering from University Teknologi Malaysia, in 1994, and a PhD degree in computer and communication systems engineering from University Putra Malaysia, in 2001.



He is currently a full-time Professor at the Department of Electrical and Computer Engineering in International Islamic University Malaysia, where he is the heads for all the research works on the Internet of Things. He has supervised many M.Sc. and Ph.D. students, has published more than 120 articles and papers, and sits on the editorial boards of many international journals. He is actively publishing in biomedical AI engineering, M2M communication protocols, wireless sensor and actuator networks, cognitive radio, small antenna systems, radio propagation, wireless communications, and network performance evaluation. He is an active reviewer of many international journals. He is a Chartered Engineer Member of the IET.

This Technical Talk was provided with an insight into the details of Afiah. At IoT Wireless Communication Protocols Lab, at IIUM, the development of Afiah a Real-time early breast cancer detection system utilizing low resolution cheap thermal camera. A low-cost early detection of breast cancer has always been a challenge for the research community at large Recent advances in Thermography and artificial neural networks have paved the way for novel approaches to be adopted.

Afiah has been validated using the available open DMR IR database and a private database developed at a specialized Breast Cancer Clinic in Sheraz Hospital, Tehran. A novel spin-off Inception V4 deep learning model optimized for accuracy and speed of convergence, was used for the evaluation while the system was tested on a smartphone App. Afiah is currently being tested rigorously to validate its diagnostic capabilities against standard clinical SOPs at public hospitals.

This undertaking will allow Afiah to be ready to be rolled for commercialization in a very short time and to be adopted by public hospitals with opportunities for further enhancement. The direct benefit of Afiah Apps offers the patients in terms of their privacy of the testing (from home or at the nearest GP clinic) where a simple image acquisition procedure using a low-cost FLIR camera is followed by a quick online diagnosis service. The novel DL employed in Afiah allows for a sub cm cross-section area to be detected facilitating early detection that might lead to avoid surgical interference. Afiah is further expected to cut costs tremendously by avoiding unnecessary mammograms, x-rays and others and used for early screening by flagging only potential risks.

A group of 42 members including staff and students had joined Dr Chandrasekharan Nataraj attended this technical talk on 26th June 2023.

Hands-on Workshop on Wearable Antenna Design July 07, 2023



One-day hands-on workshop "Wearable Antenna design" was held on July 07, 2023, from 10.00 AM to 05.00 PM at the APU, Malaysia. It was organised by **Dr. Chandrasekharan Nataraj, Senior Lecturer, School of Engineering, APU** for the benefit of APU undergraduate and postgraduate students and to give them a solid understanding of textile antenna design using microstrip techniques. The main intention of this session is to create a platform for exchanging knowledge in terms of technical facts, market trends, and technological innovations. It is part of our commitment to provide our engineering students with the most up-to-date technical standards.

Ts. Dr. Thennarasan Sabapathy, Assoc. Professor, ECE Department, Universiti Malaysia Perlis (UNIMAP), Malaysia was the invited speaker for this hands-on workshop. Dr. Thenna is an active researcher in the wearable and microstrip antennas. He is the leading figure in the antenna research group and produced many articles in the ISI level. He has published more than 30 articles and papers and sits on the editorial boards of many international journals. He is an active reviewer of many international journals.



“Hands-on Workshop on Wearable Antenna Design” is an event planned and organized for engineering students to experience antenna design physically. On the academic side, students mostly design simulation-based antennas and they never experienced to design the physical design using materials and port devices. Particularly, Electronics and Communication Engineering students sometimes may face difficulty when they intended to make a physical antenna for the first time for their final year project. The demand and complexity of antennas are increasing day by day as the world is consistently moving towards ultra-speed communications. The antenna design skill is important for our students and this learning experience could be useful for them in future. Thus, to increase student skills, this workshop is designed for undergraduate students to build a physical antenna on their own.

The event aims to achieve the following objectives:

- To raise awareness and expand knowledge in the field of RF and antenna design among research scholars, faculty, and students.
- To develop student soft skills such as communication, teamwork works and problem-solving.
- To provide students with practical experience in antenna design.
- To apply technical problem solving for industrial applications and critical thinking with efforts towards sustainability.

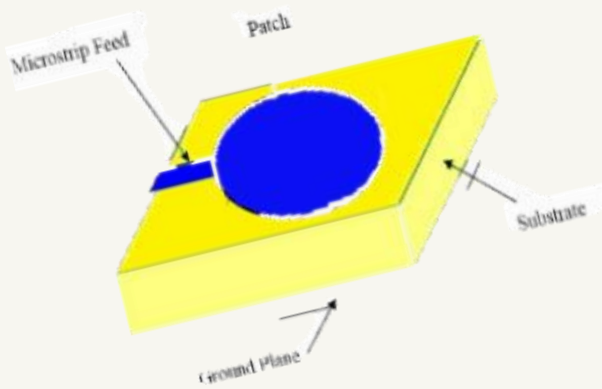
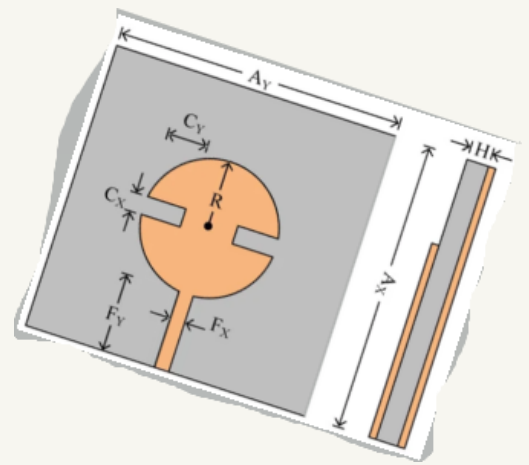
A group of undergraduate and postgraduate students joined Dr Chandrasekharan Nataraj and participated in this workshop on July 07, 2023.

Hands-on Training in Digital VLSI System Modelling July 28, 2023



The training titled "Digital VLSI System Modeling" was held on July 28, 2023, from 02.30 PM to 05.00 PM at the APU, Malaysia. It was organised by **Dr. Chandrasekharan Nataraj, Senior Lecturer, School of Engineering, APU** for the benefit of all APU undergraduate and postgraduate students to give them a solid knowledge and understanding of textile antenna design using the microstrip techniques. The main intention of this session is to enhance the students' skills in the digital VLSI design to support the development of tiny gadgets and embedded devices. It is also a part of the school of engineering commitment to provide our engineering students with the most up-to-date technical standards.

Dr. Chandrasekharan Nataraj, Senior Lecturer from School of Engineering was the speaker invited for this hands-on training. Dr. Chandrasekharan is the renowned person in the digital VLSI design. He is an active researcher in the VLSI design and FPGAs. He had published more than 30 articles and papers and sits on the editorial boards of many international journals. He is an active reviewer of many international journals.



“Hands-on training in Digital VLSI design Modeling” is an event planned and organized for engineering students to experience the integrated circuit designs. In the chip design industry, the chips are bulk production and thus, a design check is a mandatory task before allowing it for the next processes which is the manufacturing. Engineers have been using various virtual platforms to perform the design check in the IC industry. The skill in the virtual simulation is highly significant for the future engineers to success in the digital VLSI design as their career. The demand and complexity of digital ICs are increasing nowadays as the world is consistently moving towards ultra-speed communications. The VLSI design skill also important for our students and this learning experience could be used for multiple applications in the future for them. Thus, to increase the student skills, this workshop is designed for undergraduate students to build a digital system on their own and perform several of checks involved in the real-time. The event aims to raise awareness and expand knowledge in the field of VLSI Chip design among research scholars, faculty, and students. It also enables the students to apply for any technical problem solving in industrial applications and critical thinking with efforts towards sustainability.

Design Skill Competition 5th Dec 2023



On December 5th, the APU IMechE Student Chapter with School of Engineering at Asia Pacific University (APU), together with YMS Malaysia, graciously supported the IMechE Design Skill Competition (DSC) 2023. This esteemed occasion served as evidence of the dedication for promoting creativity and technical brilliance among the emerging talent that will shape the engineering industry in the future. The competition acknowledged the collaborative nature of modern engineering projects by being created as a team-based task.

Against the backdrop of time constraints, participants were thrust into an intense hybrid mode setting. Participants used SolidWorks, a well-known CAD program, as the main tool, utilizing their creativity and digital design abilities to provide their innovative ideas to life. As the students set out on this exciting adventure, they were challenged with real-world engineering challenges that had been painstakingly designed to replicate the difficulties seen in professional careers. Their ability to solve problems and their practical engineering expertise were put to test by these difficulties.

The IMechE Design Skill Competition evolved into more than just a competition; it became a doorway for students to enter the field of professional engineering. The participants refined their technical skills, developed critical collaboration abilities, and acquired priceless experience. The competition provided an insight into the diverse field of engineering, where inventive solutions are realized, and creativity and accuracy meet. Being a part of the event was more than just competing; it was also a way to further the expertise and understanding of engineering. The individuals were prepared to lead the engineering industry in the future and advance innovation and advancement thanks to the knowledge and abilities they had gained.

As a summary, the IMechE Design Skill Competition 2023 was more than just an event; it gave students a chance to have a life-changing experience. It inspired them to go beyond their comfort zones, discover uncharted territory, and open the door for an inventive, creative, and brilliantly engineered future. The competition served as a showcase for emerging talent, a nod to engineering's future, and evidence of IMechE's steadfast dedication to developing the next generation of engineers.



INNOTECH 11th August 2023



InnoTech 2.0, is an event organized by the APU IMechE SC, which showcased the brilliance of final year engineering students as they presented their innovative projects in a bid to secure the top prize. The event highlighted a wide range of cutting-edge solutions spanning various engineering domains. The core of InnoTech 2.0 was the projects exhibition, featuring numerous booths where students enthusiastically explained their projects. Attendees engaged with creators, gaining insights into the projects' technical intricacies and real-world applications.

The judges were all from APU itself and they assessed projects based on innovation, technical finesse, societal impact, and presentation. The winner was revealed amidst anticipation, acknowledging exceptional engineering prowess. InnoTech 2.0 celebrated innovation, fostering healthy competition and collaboration among students. The event left participants and attendees inspired by the potential of technology to shape a brighter future.



PIXEL 6th, 8th & 11th July 2023



Project Innovation & Exploration in CS Education and Learning (PIXEL 2023) is an annual programme specially conducted for the Final year students. This event is organised by the Computer Science Society in collaboration with the School of Computer Sciences, Universiti Sains Malaysia. Pixel 2023 is an extension of the Final Year project where the final year students exhibit their project and receive valuable feedbacks from the Industrial experts. This year Pixel is coming back with more interesting awards and prizes. This event were held in a hybrid method. The FYP exhibition and project evaluation were held online while the awards and closing ceremony were held physically in the hall.



RED WEEK 7th to 9th August 2023



REDWEEK is an event organized by APU society where the different clubs are given time to advertise and sharing the information regarding the APU and the clubs itself to the new student intake. The APU IMechE SC had the chance to be part of this event. The aim was to advertise the club and upcoming events and more importantly to get know the new engineering students and assist them to be a part of the IMechE affiliate members. Given the advantages and benefit to the new affiliate members provided by IMechE will be advantages for them. Our booth was set up from 7th to 9th August 2023.

SIET Conference 20th July 2023



The SIET 2023 Conference, held on July 20th, 2023, marked a significant gathering of prominent researchers and industrial experts in the field of engineering and technology. Organized by the School of Engineering, APU in collaboration with APU IMechE SC (Institution of Mechanical Engineers Student Chapter), this event was dedicated to advancing the discussion on sustainable future solutions.

Researchers from different parts of the World participated in SIET conference hosted by School of Engineering and provides a platform for researchers to share their knowledge. The conference provides knowledge for upcoming young engineers in new technologies developed in different parts of the world.



Switch Mode Power Supply Talk

22nd August 2023

APU IMechE Student Chapter proudly presented the "Switched Mode Power Supply Talk," an insightful and informative online event featuring esteemed lecturer, Dr. Mohamad Affan Bin Mohd Noh. With a deep focus on the intricacies of modern power supply technology, this event provided participants with a comprehensive understanding of switched mode power supplies (SMPS) and their relevance in today's technological landscape. Dr. Mohamad Affan Bin Mohd Noh, renowned for his expertise in power electronics and electrical engineering, took center stage as the keynote speaker. Through his captivating presentation, he delved into the inner workings of SMPS, elucidating the fundamental principles, design methodologies, and practical applications. With a wealth of experience and research in the field, Dr. Affan shared the real-world examples and several case studies that illustrated the significance of SMPS in various industries, including telecommunications, consumer electronics, and renewable energy systems.

The event, hosted on the Microsoft Teams platform, attracted a diverse audience of students, academics, and professionals eager to expand their knowledge in power electronics. Dr. Affan's lucid explanations and engaging delivery ensured that even complex concepts were accessible to participants with varying levels of expertise. Attendees were provided with an opportunity to engage in a dynamic Q&A session, where they could seek further clarification and insights directly from the expert. Organized by the APU IMechE Student Chapter, the "Switched Mode Power Supply Talk" successfully bridged the gap between theoretical knowledge and practical applications in the realm of power electronics.

The APU IMechE Student Chapter extends its heartfelt gratitude to Dr. Mohamad Affan Bin Mohd Noh for sharing his expertise and knowledge, as well as to all the participants whose enthusiasm and engagement made the event a resounding success.

Speak Out For Engineering (SOFE) Semi-Finals 26th August 2023



The APU ImechE Student Chapter proudly hosted the prestigious national event, Speak Out For Engineering (SOFE) Finals, at Auditorium 4, Level 3, APU Campus on 26th August 2023. SOFE Finals marked the culmination of a thrilling competition that brought together the brightest engineering talents from Malaysian universities. In this high-stakes competition, participants who had clinched the first-place position in the preliminary rounds at their respective universities gathered to fight for the top spot in Malaysia. SOFE Finals was an opportunity for these talented individuals to showcase their technical engineering skills and communication skills.

Each participant were allotted approximately 20 minutes to deliver a presentation on an engineering topic of their choice in front of a discerning panel of three judges. Following the presentation, a rigorous question-and-answer session ensued, during which the judges probed the participants' knowledge and understanding of their chosen topics.

The participants were evaluated on multiple criteria, including their presentation skills, depth of knowledge about the subject matter, and their ability to articulate and address questions from the judges. The topics covered in this event spanned the wide spectrum of engineering, with presentations ranging from intriguing discussions on 3D printing to the intricate relationship between mathematics and engineering, and the showdown between electric motors and fuel powered motors. To keep the participants energized and focused throughout the event, the sumptuous lunch and snacks were provided, ensuring they were at their best during their presentations and Q&A sessions.

SOFE Semi-Finals 2023 was a resounding success, showcasing the exceptional talent and dedication of the next generation of engineers in Malaysia. We look forward to continuing our mission of promoting engineering excellence and innovation in collaboration with our esteemed partners and supporters.





Speak Out For Engineering (SOFE) Internal Heats 12th July 2023



The "Speak Out for Engineering" preliminary rounds, organized by the APU IMechE SC. The project managers for this event were Muhammad Ridwan Bayrajee, Zainab Yasmin and Areebah Sajjad Khattak. They were assisted by the assistant project managers, Vaishnavee Jaanvee Khurug, Zahra Tasnim and Amogha Seelan as well as other APU IMechE SC committee members. This was a competition event which aimed to foster verbal and visual communication skills among young engineers while explaining technical mechanical engineering subjects.

On the day of the event, participants delivered their presentations in-person. Each student had a dedicated time slot of 20 minutes to present their chosen engineering topic. The participants used various visual aids, such as slides, diagrams, and prototypes, to enhance their presentations and engage the audience.

Following each presentation, the panel of judges which consisted of Ir. Jaqueline Lukose and Ir. Ts. Dr. Yvette Shaan-Li Susiapan conducted a question-and-answer session, providing an opportunity to assess the participants' understanding of the subject matter and their ability to address queries effectively. After careful evaluation, the judges selected the winners of the preliminary round. These students then be invited to proceed to the next stage of the competition.

Participants were required to submit their slides and a written presentation of 200 words prior to the event. This allowed them to prepare and structure their content effectively. The topics chosen by the participants varied widely, showcasing the diverse interests and knowledge within the engineering community.

Overall, the "Speak Out for Engineering" preliminary rounds were a resounding success, setting the stage for the upcoming live presentations and further advancing the communication skills of aspiring engineers at APU.



Industrial Visit to Top Glove 17th July 2023



On July 17, 2023, APU SPE student chapter organized an industry visit to Top Glove, a leading manufacturer of disposable rubber gloves. The day commenced with a corporate presentation by the Human Resource Department at the Top Glove Tower Auditorium. This provides the opportunity for the students to network with Top Glove's human resource for those seeking internship opportunities. This was followed by a guided tour to Top Glove Tower. Navigating through various levels, we witnessed the company's illustrious milestones and cutting-edge facilities. The tour provided a holistic view of Top Glove's operations, underscoring their commitment to innovation and excellence in the field. The pinnacle of the visit was our venture into Factory F25, where we immersed ourselves in the intricate processes of PPE distribution and the production line area. This hands-on experience allowed us to grasp the detailed craftsmanship involved in creating high-quality disposable rubber gloves.

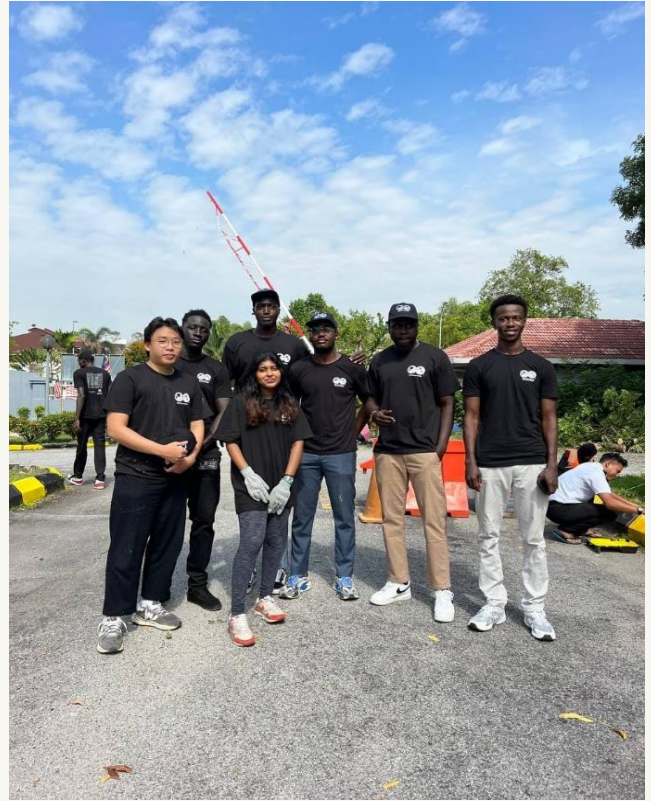
Community Clean Up at Bukit Jelutong Primary School 9th Sept 2023



Partnering with SPE Kuala Lumpur Section, the APU SPE SC with the supervision of Dr. Wong Siew Fan played a pivotal role in organizing a community cleanup at Bukit Jelutong Primary School on 9th September 2023. Committee members actively participated, painting a guard house and designated areas, highlighting the chapter's dedication to environmental sustainability and community welfare. The event, dedicated to fostering STEM education, saw a remarkable display of community spirit and dedication.

Prior to the event, APU SPE SC was in charge of creating an engaging poster and a convenient registration form; and effectively managing the registration process as well as facilitating communication through a dedicated WhatsApp group.

During the event, 7 members of APU SPE SC took on the task of painting a guard house and another designated area. Meanwhile, other volunteers actively participated in the cleanup activities, collectively contributing to the overall enhancement of the school environment.



Members of APU's Society of Petroleum Engineers Student Chapter (APUSPESC) dive into corporate social responsibility activities.

Beach Cleanup 21st Oct 2023



On a sunny morning, Asia Pacific University of Technology & Innovation's (APU) Society of Petroleum Engineers Student Chapter (APUSPESC) students descended on Negeri Cahaya Beach in Negeri Sembilan, armed with trash bags and a mission to clean up the beach.

As part of their ongoing Environmental, Social and Governance (ESG) initiatives, 22 enthusiastic students were eager to make a difference for the environment and raise awareness about the importance of protecting marine ecosystems. Under the supervision of their esteemed advisor, **Dr. Wong Siew Fan**, the students worked diligently for over two hours, collecting a staggering eight bags of trash! From plastic debris to discarded items, the students' efforts helped to mitigate the environmental impact on this pristine coastal region.

“It was amazing to see the dedication and enthusiasm of our students,” said Dr. Wong while added that, “Their commitment to creating a cleaner and healthier environment for present and future generations is truly inspiring.”

The students also had a lot of fun at the event, with many of them expressing a deep sense of fulfilment at the end of the day.



These bright next-generation petroleum engineers are driven by their ambition to use their expertise for sustainability and environmental protection.

Mohamed Bakri Osman Abdemaged, one of the beach clean-ups volunteers, had a positive experience. “I am so glad I could be a part of this event. It was incredible to see the change we could make in just a few hours. It was a fun and memorable experience,” he said.

Another volunteer, Isse Mohamud Ali, stated that the event taught him the value of conserving coastal areas. “I realised how much trash can pollute our beaches and harm marine life. I am committed to doing my part to help keep our beaches clean,” he said.

Thiik Thiik Agoth Cithiik, President of APUSPESC, concluded that the event had inspired all volunteers and that the majority of them, including himself, had already signed up for more beach clean-ups in the future. “It is a great way to give back to the community and make a positive impact on the environment. I encourage everyone to get involved in a beach clean-up if they can,” he said.

Mohamed Bakri, Isse Mohamud, and Thiik Thiik are three of the many gifted students pursuing Petroleum Engineering at APU. With their brilliant minds and unwavering dedication, they are poised to shape the future of the industry and make a positive impact on the world. Their enthusiasm and dedication are evident in their involvement in APUSPESC, where they collaborate with their peers to learn and grow as well as be active in their communities, volunteering, and other environmental initiatives. With their talent, passion, and dedication, they are destined to make a significant impact on the world.



Members of APU's Society of Petroleum Engineers Student Chapter (APUSPESC) dive into environmental protection and take a stand for marine life by sweeping away trash at Negeri Cahaya Beach in Negeri Sembilan and collecting eight bags of garbage containing various types of waste.

By engaging students in environmental protection efforts, these events can help to raise awareness about the importance of sustainability and inspire future generations to make a difference.

Energy4Me

25th Oct 2023 & 8th Nov 2023

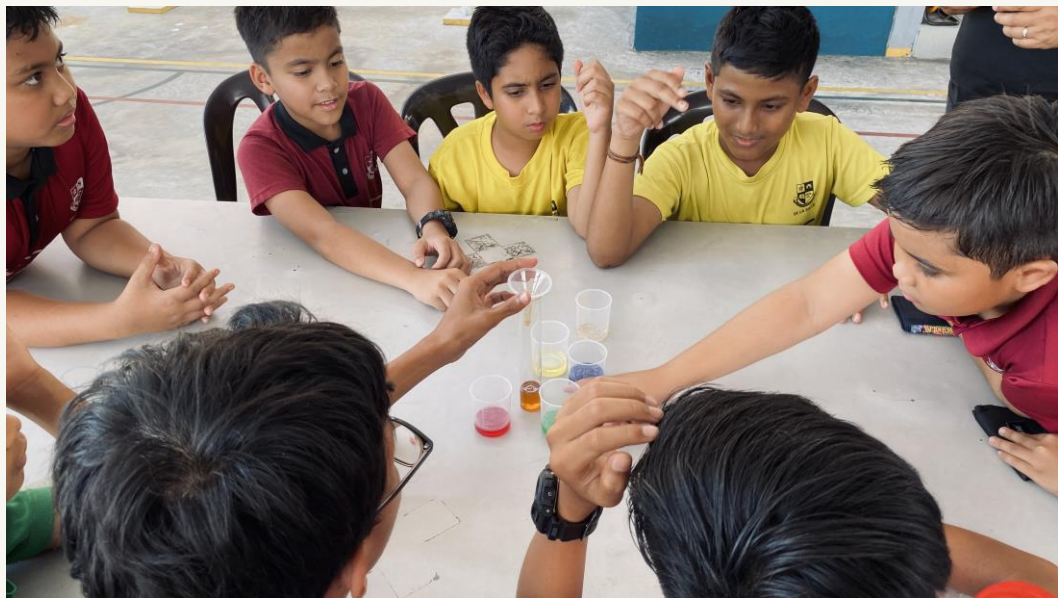
APU SPE student chapter under the supervision of **Dr. Wong Siew Fan** actively collaborated with SPE Kuala Lumpur and several other student chapters organized an impactful event, "Energy4Me". Energy4me is an educational program that educates the public about energy and puts a face on the industry. Energy is a critical issue worldwide, and SPE believes face-to-face contact is the ideal way to spread the word about energy conservation, the future of the oil and gas industry and its impact on the planet.

APU SPE SC participated in the event held at Sekolah Kebangsaan Bukit Lanjan Bandar Damansara Perdana on 25th October 2023, and the event held at SK La Salle in Klang on 8th November 2023. This event had successfully engaged over 400 students. The primary objective of "Energy4Me" was to impart valuable knowledge about the oil and gas industry and science to young minds, aligning with the broader goal of fostering interest and awareness in these fields. "Energy4Me" featured a variety of engaging activities and presentations designed to demystify the world of oil and gas for the students. These activities included interactive demonstrations, hands-on experiments, etc.





Members of APU's Society of Petroleum Engineers Student Chapter (APUSPESC) demonstrating Bernoulli's Principle Experiment to the primary school students at Sekolah Kebangsaan Bukit Lanjan Bandar Damansara Perdana



Members of APU's Society of Petroleum Engineers Student Chapter (APUSPESC) demonstrating Bernoulli's Principle Experiment to the primary school students at SK La Salle in Klang

Petroleum Engineering Lecture Series 15th Dec 2023



PETRONAS has brought together 22 local universities in its inaugural symposium under the Collaboration with Higher Education Strategic Initiatives (CHESS) programme, to steer discourse on advancing talent, technical and technology developments for sustainable energy innovations. The initiative aimed to strengthen academia-industry collaboration, accelerate talent and technology development and inspire innovation for a sustainable future.

During the symposium held in June 2023, PETRONAS exchanged Memoranda of Understanding (MoUs) with six universities, including Asia Pacific University (APU) bringing the total number of participating institutions to 22.

On 15th December, the first Petroleum Engineering Lecture Series had been successfully organized by Petroleum Engineering Programme, School of Engineering APU and APU SPE Student Chapter under this APU and PETRONAS collaboration. We had a great opportunity to have two guest

lecturers from PETRONAS Carigali Sdn. Bhd; Mr. Ts Ahmad Fakrudin Zakeria and Ms Hazreen Harris Lee, both are Staff Petrophysicist with more than 15 years' experience in oil and gas industry who prepared a great technical lecture on the topic of “ Petrophysical Data Acquisition: Field Operation and Technologies in Wireline, LWD/MWD, Pressure and Core Data”. The session offered a valuable insights and exposure on the industrial practices in oil and gas industry related to well logging data acquisition for all the students and lecturers attended during the event.



Ms. Nur Ailie Sofyaiiana Serasa presenting Certificate of Appreciation to the guest lecturers.