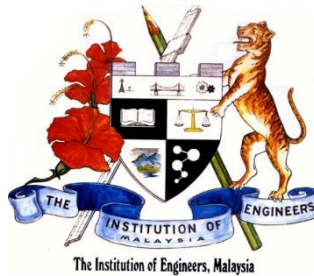


ENGINEERS INSIGHT



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OF TECHNOLOGY & INNOVATION



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ASIA PACIFIC INSTITUTE
OF INFORMATION TECHNOLOGY

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IEM-APU Engineering Forum

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If you would like to be a part of the 'Engineers Insight' editorial team or have an article / paper published please contact: shankar@apu.edu.my

Engineers Insight' is a quarterly issue by the School of Engineering for the reading pleasure of the staff and students allowing for knowledge sharing and capturing of events for the benefit of engineering education.



It is often a misconception that engineers do not need to communicate as much as their sales counterpart in any company. Rather, an engineer is always being stereotyped as someone that is shut away in a laboratory or a workshop working on a design or keeping his hands dirty with machinery. Well, communication skills are actually an integral part of an engineers' career grooming and growth. Engineers with good communication skills are able to work with their sales colleagues to translate external client requirements into working plans, which are further transformed into best possible solutions via internal communication with engineering colleagues. It is a fact that those engineers with good communication skills are able to move up the career ladder fast and to assume management position within the company.

Communication skills do not just involve speaking in front of a large crowd like a politician addressing his supporters or Steve Jobs in Apple product launches. As stated in the Engineering Accreditation Council (EAC) Manual 2012, an engineering graduate should be able to ***“communicate effectively on complex engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions”***. Therefore it is clear that a graduate in engineering should be able to speak, write and listen well, both internally with colleagues or externally with society.

The question is how to develop good speaking, writing and listening skills? Does it involve plenty of hard work or is something that can be attained overnight? The fact is that you will have many opportunities to develop good communication skills, progressively, over the four year of engineering studies via the following :

English-Speaking Environment. The University is an English-speaking campus where you will be required to converse in English with your lecturers and peers. With the presence of a vibrant international community in the University, it will help to build your competency. Do make friends with your peers from different countries and cultures, it will definitely help!

Classroom Presentation. Many assignments that you are asked to complete come with a presentation element and your lecturers would want you to present in front of your peers. Do make use of the opportunity to overcome your stage-fright and to practice the use of tone, pace and body language to put forward your ideas. In addition, do learn from your peers that can present well.

Technical Report Writing. You will sharpen the English technical-writing skills via completion of assignment and laboratory reports. Your lecturers will guide you on the appropriate format, depth of English required and the breadth of the content required. One good way to improve writing skills are to read technical articles and try to emulate the style of writing.

Group Discussion and Learning. There are many opportunities for discussion among your peers, e.g. to complete a group assignment or in group activities as part of the learning. Do volunteer yourself as a leader such that you can learn the skills of managing different views, setting target and goals and in managing conflicts. Last but not least, you will be able to pick up listening skills as well by considering different viewpoints from your team members.

Innovative Designs toward Sustainable Products – Series 4

Sustainable products have always been the driving force in cultivating Innovative ideas. The product that is said to be sustainable through innovation in my fourth series of Innovative Design toward Sustainable Product. Let's walk through the need for the sustainable idea development behind this product. The product that I would like to introduce to the fellow "Insight" reader is the "Edible Spoon".

An India-based company called Bakey's, founded by Narayana Pessapaty, actually makes edible spoons, forks, and chopsticks. This initiation started as there were nearly 15,000 tons of plastic waste that enters India's landfills every day and there was a requirement to do something about it. That's when Narayana, came with ingenious idea of developing an edible spoon. He started the company with spoons and now they have develop forks, and chopsticks as well. This "edible spoon is made from variety of Indian millet flour as shown in Figure 1. So, the bigger question is, how do we make the spoon? It is a simply process, just like we make a "naan Bread" or "chapatti". All we have to do is to have the millet flour, then add water, add the flavours and mix it, make a dough, then shape it into a spoon, fork, knife or chopstick and finally bake it in an oven. When the spoon is out of the oven it be just like the spoons shown in Figure 2, and ready to be used.



Figure 2: Edible Cutlery (<http://mashable.com/2016/03/26/edible-spoon-bakeys/#RkFUUV0aRgq0>)

This "edible spoon," as shown in Figure 3 can last 20 minutes in hot liquid, comes in a variety of flavours such as sugar, ginger-cinnamon, ginger-garlic, cumin, celery, black pepper, mint-ginger and carrot-beetroot. The spoons have a shelf life of two to three years. It can be eat it up once you have finished with your dining. If you don't want to eat it, you can simply throw it and it decomposes within four to five days. So isn't it a cool idea!



Figure 3: Edible Spoon in hot liquid

Since it is an ingenious invention which is sustainable and at the same it does not require any washing and cleaning of cutleries, many restaurants and chef have adopted this idea. They started serving this "mini deserts" and "starters" in the "edible spoon" as shown in Figure 4.



Figure 4: "Mini Desert" and "Starters" served on edible spoon

Anyways just for your information, Bakey's only started in 2010, and this guy managed to sell more than 1.5 million pieces of cutlery in India and around the world. Currently, Bakey's only sells spoons, but plans to distribute its forks and chopsticks with the Kickstarter funds that they have secured. By summer this year, it will open a new facility that can produce 800,000 pieces of its cutlery a day. They also have planned to develop plates, cups and other cutleries in the nearest future.

Follow this series and you will able discover and embrace many products that are designed and developed using similar sustainable techniques. You might even get some idea into your own start up's, so enjoy reading and embrace sustainability as "**Life Creates Conditions Conducive to Life**".

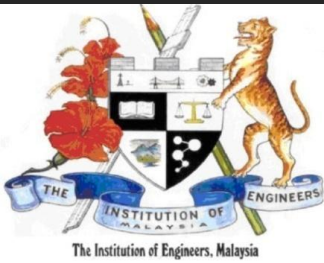
Read more at:

<http://www.businessinsider.my/bakeys-makes-edible-cutlery-and-launches-kickstarter-2016-3/>

Watch and inspiring video at:

<https://www.youtube.com/watch?v=HIFs3eUXc8Q> and <https://www.youtube.com/watch?v=ZwJxNTIUWr0>

Vickneswari A/P Durairajah



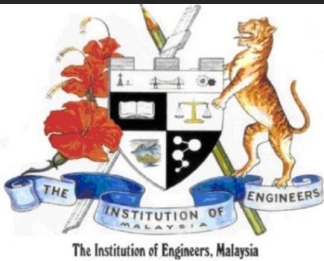
SEMINARS & WORKSHOPS

IEM MEMBERSHIP DRIVE



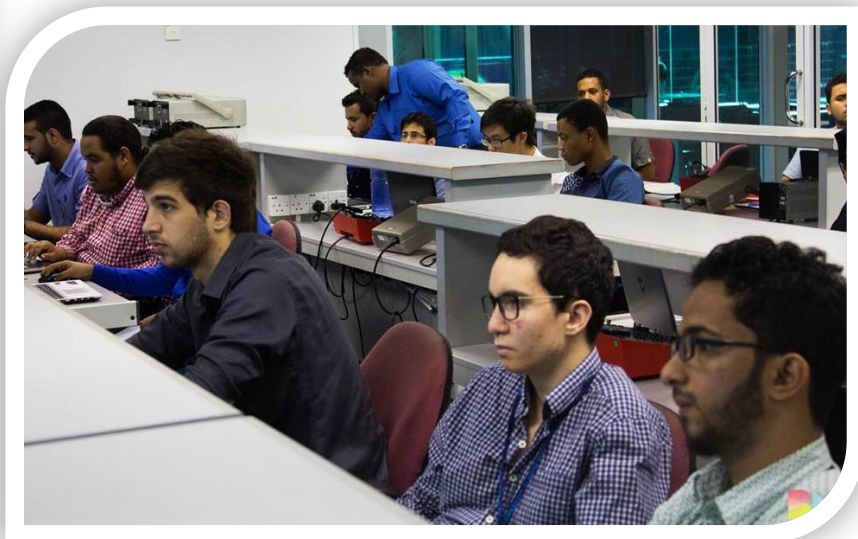
The IEM membership drive for the year 2016 was organized by IEM-APU Student Section on October 6, 2016. Ir. Fam Yew Hin represented IEM addressing 55 students on the role of BEM and IEM in professional engineering. Ir. Fam Yew Hin also explained to the students on the need and benefits of registering with a professional body.





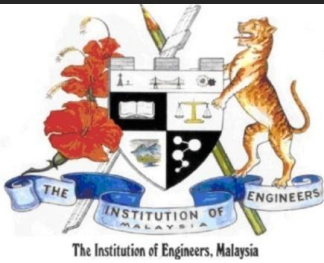
SEMINARS & WORKSHOPS

AUTOCAD & 3D PRINTING



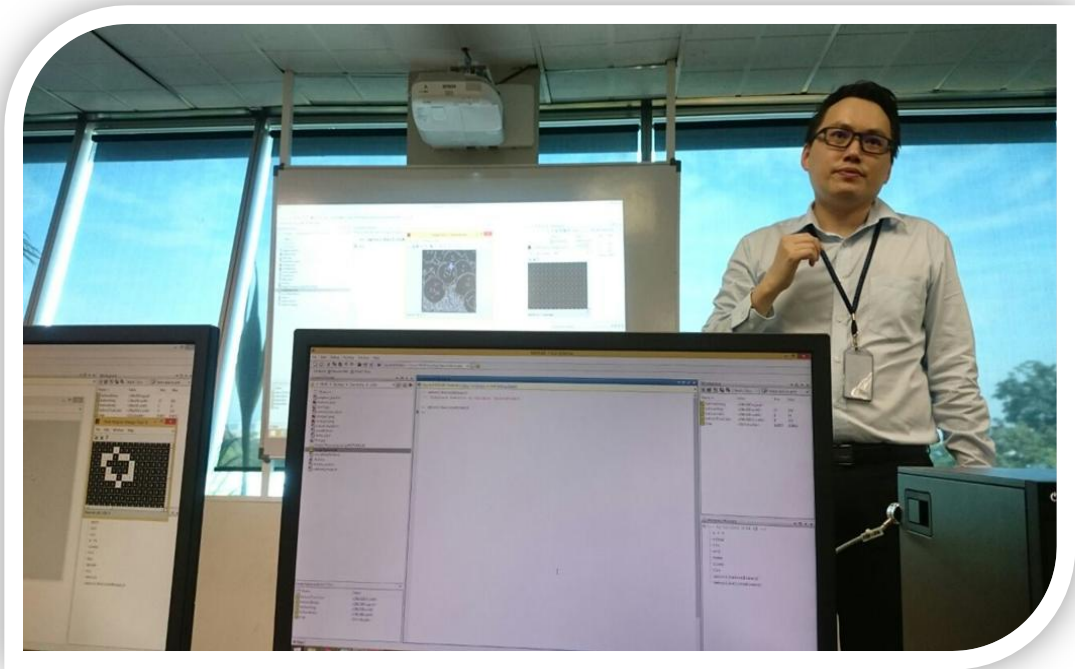
The invited talk and workshop on 'AutoCAD and 3D Printing' by Mr Varun of Phyneer Rex Solution was conducted on October 27, 2016. Twenty-seven students and one staff attended the workshop. The students were given an hands on training on 2D and 3D drawing using AutoCAD and Autodesk.





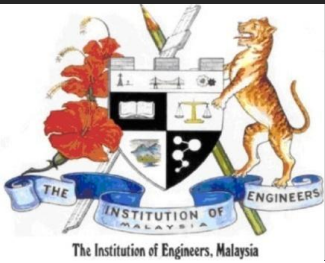
SEMINARS & WORKSHOPS

Image Processing Using MATLAB



On November 12, 2016, SoE Head of School Dr Thang Ka Fei himself conducted a 'Hands-On Training and Workshop on Image Processing Using MATLAB'. The workshop was to provide a hands-on training on Image Enhancement, Morphology and Segmentation with typical case studies. Eighth students and one staff attended the workshop.





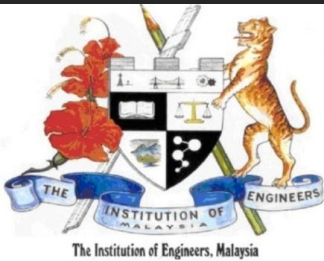
SEMINARS & WORKSHOPS

PRODUCT DESIGN & HARNESSING WIND ENERGY



On November 9 & 10, 2016 Prof Dave Dyke, of Staffordshire University presented a technical talk on 'Product Design' and 'Harnessing Wind Energy' respectively. Sixty-five students and ten staff attended the talk.





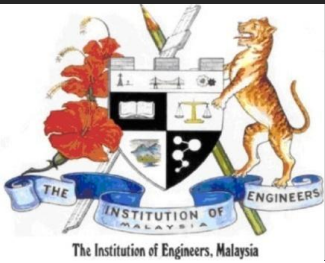
SEMINARS & WORKSHOPS

EXPLORING 3PHASE CIRCUITS & MEASUREMENTS



On November 16, 2016 Mr Ravi Lakshmanan conducted a hands on training and workshop on 'Exploring 3 Phase Circuits and Measurements'. Seven students and two staff attended the workshop.





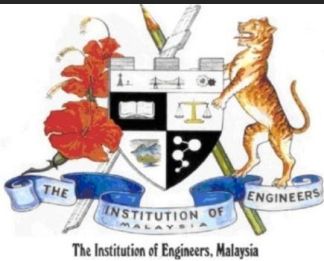
SEMINARS & WORKSHOPS

Implementation Challenges in Application of RFID in Warehouse



On November 30, 2016 Dr Raed Md Taher Abdulla presented a technical talk on 'Implementation Challenges in Application of RFID in Warehouse' exclusively for telecommunication engineers. Twenty-Six students and two staff attended the talk.





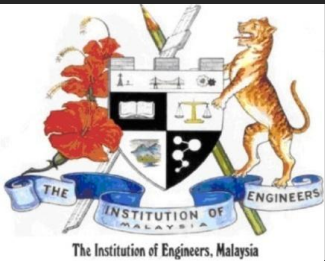
SEMINARS & WORKSHOPS

SCHNEIDER ELECTRIC - GO GREEN IN THE CITY



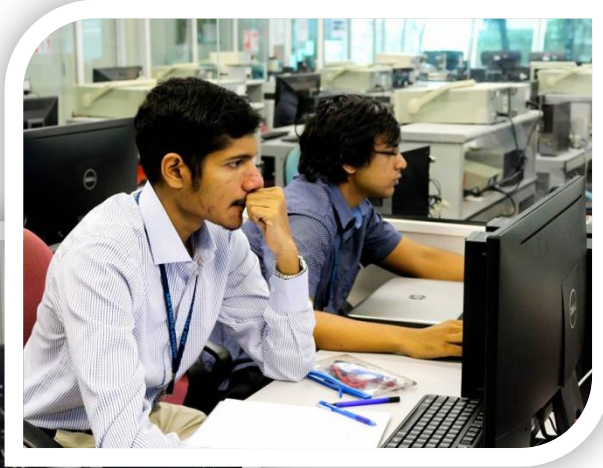
Go Green in the City 2017 is the 7th edition of the ultimate global student competition conducted by Schneider Electric towards Innovative solutions for smarter and more energy efficient cities. On December 7, 2016 representatives of Schneider Electric gave an introductory talk on the competition. One hundred and fifty engineering students attended the talk. Ms Kelly Seow, HR manager also briefed on the career and internship opportunities at Schneider Electric.



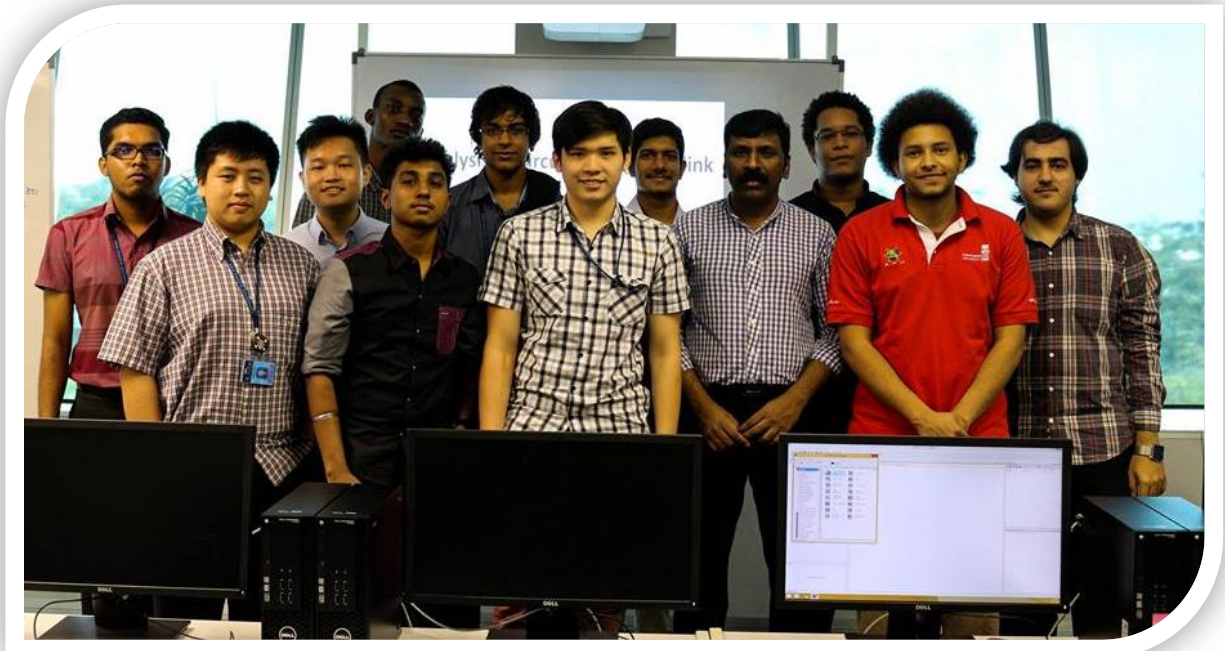


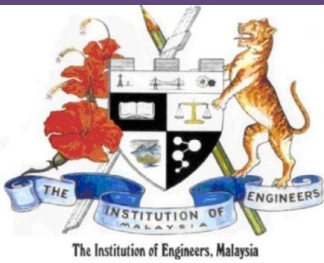
SEMINARS & WORKSHOPS

ELECTRIC CIRCUIT ANALYSIS USING SIMULINK



A workshop on 'Analysis of Circuits using Simulink' was conducted by Mr Shankar Duraikannan on December 17, 2016 exclusively for year 1 semester 1 engineering students with an objective to introduce them to a simulation software for simulating circuits, that would kindle their interest in learning analysis of circuits module. Fifteen students attended the workshop





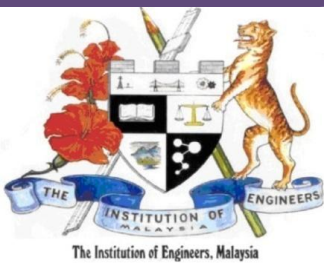
INDUSTRIAL VISITS

Daikin Malaysia Sdn Bhd



On October 13, 2016, sixteen students accompanied by two staff visited Daikin Malaysia Sdn Bhd. Guided by Dr Chin representing Daikin the student toured through the labs of R&D department namely the Component Lab, Calibration Lab, PCB Lab (for designing electronic bonds), EMC Lab, Safety Lab etc. The students also toured the manufacturing plant where they witnessed the production line of Air conditioners from component to finished goods.





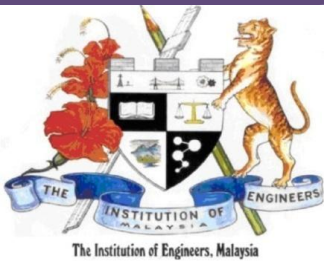
INDUSTRIAL VISITS

Omron Malaysia Sdn Bhd



On October 20, 2016, twenty seven students accompanied by two staff visited Omron Malaysia Sdn Bhd. A team of Omron executives; Ms Norsamila Samsudin HR officer, Ms Jama'yah, Mr Jamalul Khairuddin and Mr Wong introduced Omron to the students and guided them through the manufacturing facilities of Omron where the students were briefed on the manufacturing process of the switches and relays





INDUSTRIAL VISITS

Top Glove Corporation Berhad



On November 23, 2016, thirty five students accompanied by an academic staff visited Top Glove Corporation Berhad . Top Glove Corporation Berhad is a rubber glove manufacturer. The company owns and operates 28 manufacturing facilities in Malaysia, Thailand, China and marketing offices in Malaysia, United States and Germany. The students had a close exposure to the glove manufacturing process at Top Glove



ABB - Intersarsity Innovation Challenge 2016

Our students from the APU School of Engineering (SoE) successfully emerged as the Winner for ABB Intersarsity Innovation Challenge 2016. The winning team comprises Chama Serenja, Mohammad Haadi Goolfee & Ting Ding Ching, who are both Year 3 Electrical and Electronic and Mechatronic Engineering students.

Our students' innovative idea that won the prestige award, the 'Low Cost Integrated Smart Systems' stood out among all other local and private universities in Malaysia in the 'Undergraduate' category. Prior to the participation in the competition, the team had worked on the proposal and presentation for a tedious 1 month, under the supervision and mentorship of Vickneswari Durairajah.

Also an acknowledgement to Mr.Suresh, Dr. Freddy Tan Kheng Suan for his advice and Dr. Alvin Yap Chee Wei the support and to be present with the student on the day of the competition.

The competitions objective to stimulate creativeness and innovative thinking amongst undergraduates apart from building an interactive platform between the academic circle and industry experts. The competition core theme was "Smart Technology, Intelligent Upgrading". The winning team chose "Smart Grid and City" category, where they develop a proposal and presentation on their idea which was, a new alternative way of implement smart grid system at low cost. The proposed idea is on green and efficient way to store excess energy from the power plant and generate more efficient power generation using compressed air via Tesla turbine.

They emerged as the Grand Prize Winner and took home RM10, 000 made themselves stand out among the other presentations from both private and local universities. As a first timer in the competition arena their winning was truly an amazing achievement.

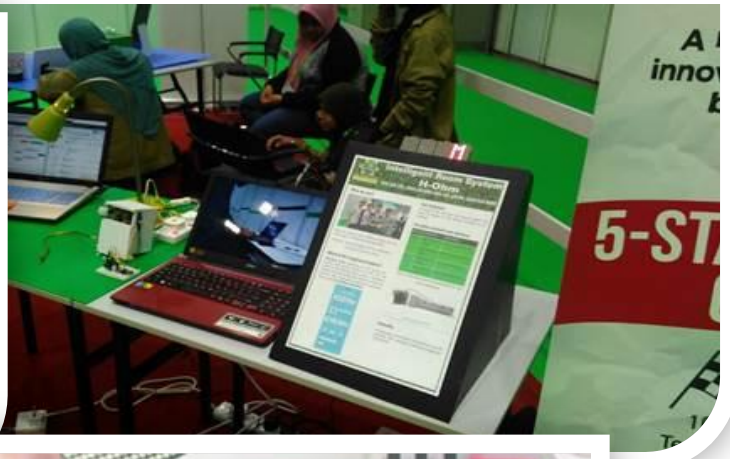
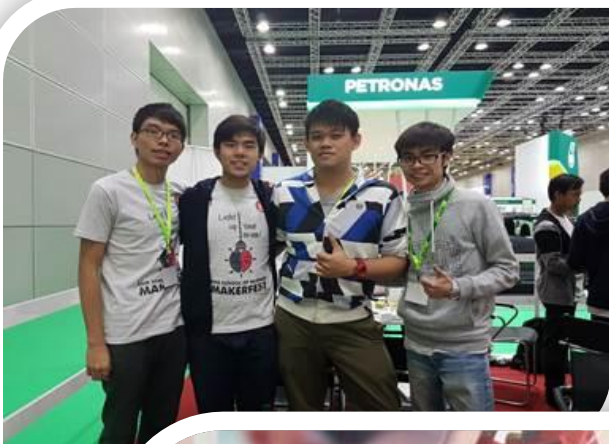


GreenTech Youth Innovation Challenge 2016

Our students recently made their name at the First GreenTech Youth Innovation Challenge 2016 by winning the second place. This event was organised by GreenTech Malaysia, an organization under the purview of the Ministry of Energy, Green Technology and Water (KeTTHA), and Asia School of Business, in conjunction with the International Greentech & Eco Products Exhibition & Conference Malaysia (IGEM) 2016. This competition was held from 5th Oct 2016 – 8th Oct 2016.

Throughout the competition, the students, comprising Ngie Kok Sin, John Lim Hong Aun, Lee Jun On (Mechatronic Engineering students) and Chan Kar Keng (IT student) went through 5 stages of challenges, in which they were required to develop a prototype of a product that addresses the world's environmental sustainability issues. Our students developed the "Intelligent Room System", which made use of Arduino Nano, Motion & Light Sensors and Solid-state Relay to automate the switch of lights to save electricity.

Green technology and sustainability is the primary focus for the future and we are glad that our students are exposed to it prior to their graduation. Congratulations to the team, who was mentored by Vickneswari Durairajah & Suresh Gobee, for this awesome achievement!



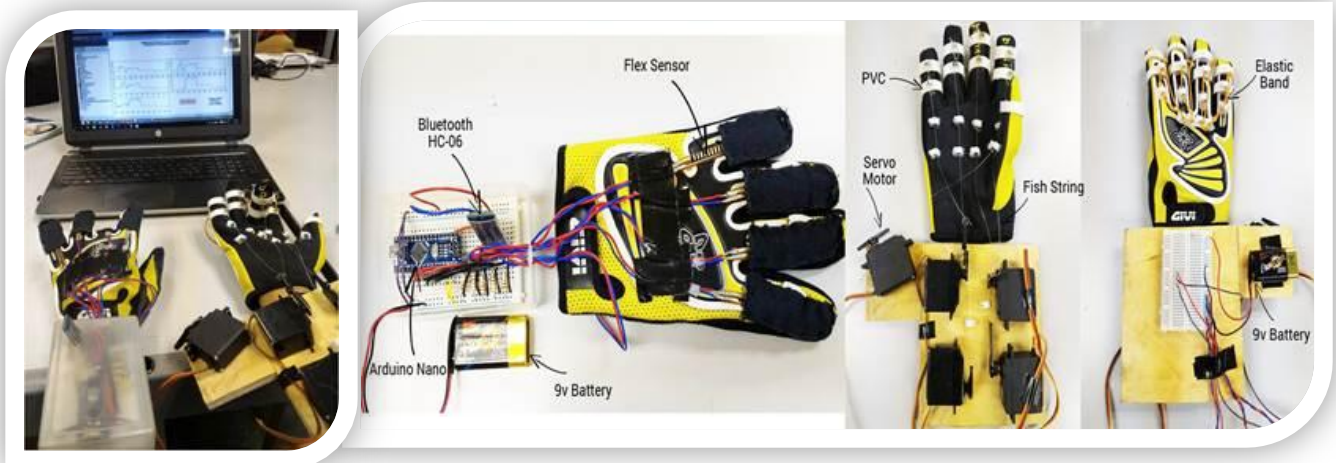
APICTA 2016

For the 23rd time since 1999, we have won ourselves an APICTA Award!

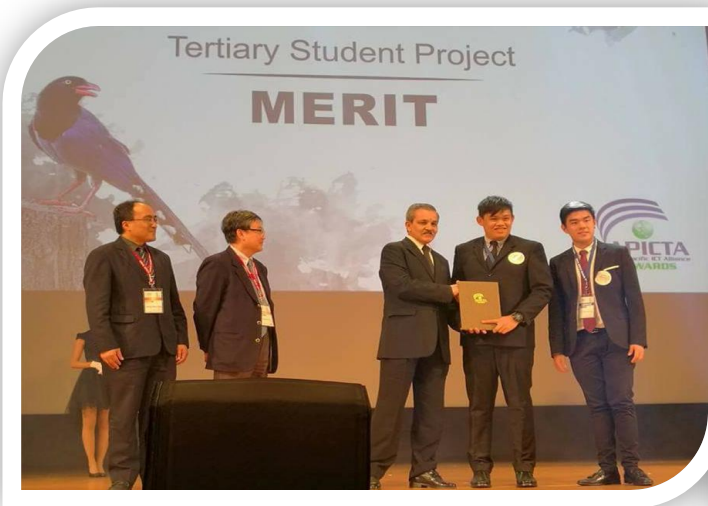


Our students from the APU School of Engineering (SoE) successfully emerged as the Winner for MSC Malaysia Asia Pacific ICT Alliance (APICTA) Awards 2016. The winning team comprises Ngie Kok Sin and John Lim Hong Aun, who are both Year 3 Mechatronic Engineering students. Our students' innovative invention, the 'Low Cost Finger Exoskeleton for Rehabilitation of Stroke Patients' stood out among all other universities in Malaysia in the 'Best of Tertiary Student Project – Software/Hardware' category. Prior to the participation in the competition, the duo has worked on the project for 9 months, under the supervision and mentorship of Vickneswari Durairajah and Suresh Gobee.

The APICTA Awards is an international awards program organized by APICTA, which aims to increase ICT awareness in the community and assist in bridging the digital divide. The project that these two geniuses had worked is the soft finger exoskeleton.



Upon their victory in the Malaysia Finals, Kok Sin and John had represented Malaysia in the International APICTA, which was held in Taipei, Taiwan from Friday, 2 December to Monday, 5 December 2016.



They once again won by emerging as the Merit Winner at the International APICTA 2016 in Taipei and made themselves stand out among the other projects at APICTA 2016 being the only undergraduate team. As they call it "Oscars of the ICT Award", it was truly an amazing achievement by both Ngie Kok Sin and John Lim Hong Aun.



Let's put our hands together to congratulations to them and their supervisors for the astonishing achievements!



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SOE EVENTS

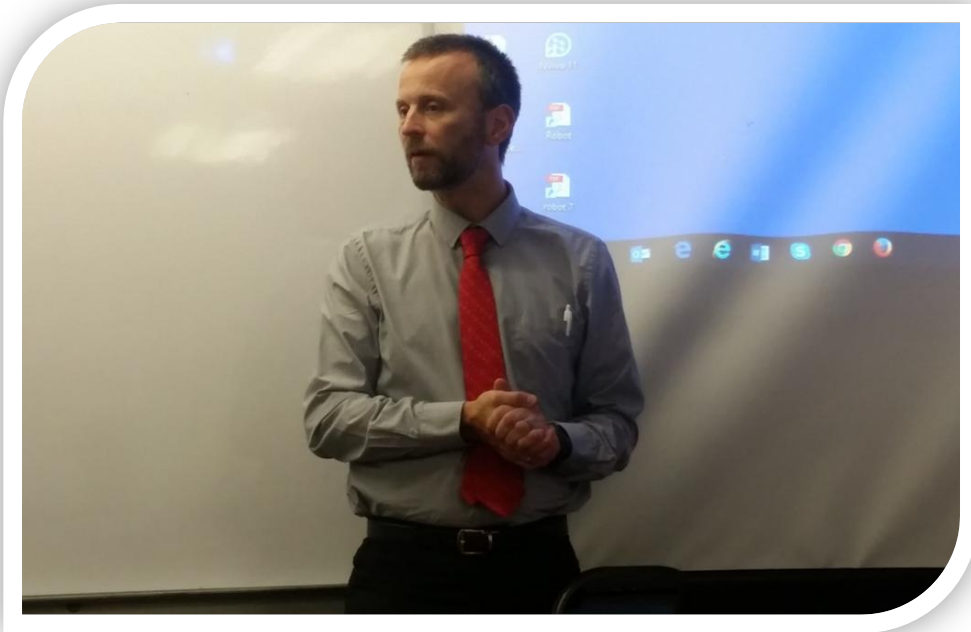
Automation Day 2016



Automation Day is an annual event organised by the Malaysia Automation Technology Association (MATA) and the School of Engineering that brings together the professionals of automation industries and institution for the benefit of students seeking their career in automation industry. The Automation Day-2016 was held on October 18, 2016 that had the Career Fair with Technology Showcase and Technical Talks on Automation Technologies and Trends as the integrated part of the day.



Staff Training – Learning Styles & Motivation of Students



On November 9 & 11, 2016, Prof Dave Dyke, delivered two sessions to the staff members of SoE on “Learning Styles” and “Motivation of Students”.





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SOE EVENTS

Engineering Forum



The Engineering Forum which is a platform that brings together industrial experts, institutional leaders and students is an annual event jointly organized by IEM & APU. It was organized on December 7, 2016. One hundred and fifty students including 20 students from Multimedia University (MMU) along with all the staff of SoE were present at the forum. The guest participators were Ir. Dr. Cheong Thiam Fook, Mr. Chelvam Rengasamy and Ir. Kandiah Padmanathan. Prof. Dr. Ir. Vinesh Thiruchelvam chaired the forum which had discussions on the current industrial trends and skill sets required by budding engineers for employability. Prof Dr Ir Vinesh, highlighted to the students on the relevance of their curriculum at every module level to keep them abreast with technology and latest development in the industry to ensure their employability and career advancement in their chosen field engineering.

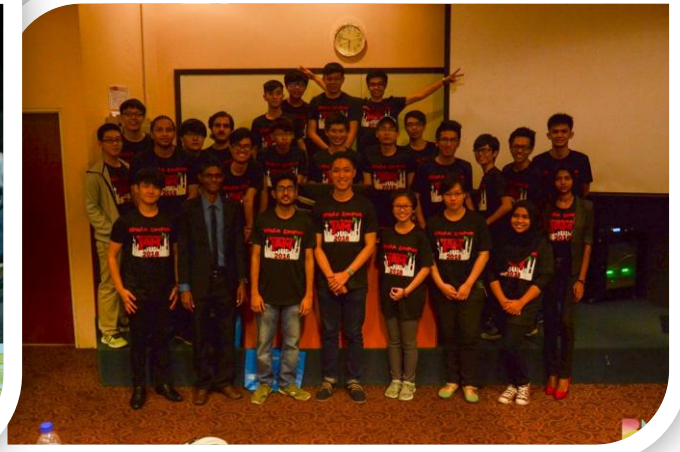




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SOE EVENTS

Raspberry Pi Jam



Kuala Lumpur Raspberry Jam 2016 was held on December 10, 2016 which was a mix of talks and hands-on workshops on Raspberry Pi, the small but powerful computer. The Event is organized by Malaysia Raspberry Pi Club and co organized by APU, in support of MDEC's Mydigitalmaker movement to transform Malaysian youth from digital users to producers in the digital economy.





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SOE EVENTS

Staff Team Building Eagle Ranch Resort



A perfectly communicated problem is half solved