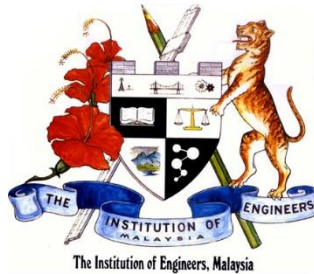


ENGINEERS INSIGHT



A . P . U
ASIA PACIFIC UNIVERSITY
OF TECHNOLOGY & INNOVATION



A . P . I . I . T
ASIA PACIFIC INSTITUTE
OF INFORMATION TECHNOLOGY

SCHOOL OF ENGINEERING

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IEM Gold Award

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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.

Letter from the Editor Desk

Prof Dr Ir Vinesh Thiruchelvam

It has finally happened....we have moved into our new campus. The campus is a beauty from an architectural perspective. It has been engineered and built to have the modern education institution outlook. The new generations' way of thinking and actions have been embedded into the design of the flow of movements within the campus, may it be the central spine, stairways, incubators, laboratories or library, all spaces fit learning and campus lifestyle of the future.

Predicting the future is a fool's errand. But that shouldn't keep us from trying to imagine what lies ahead. After all, it is often an inspiring vision of the future that drives change. Students are encouraged to feed into our APU's growth, share ideas and utilize the campus 100%.

Education, like life itself, should not be a spectator sport. Merely listening or even reading may create the illusion of learning, but without active engagement, retention of course material, or the ability to apply it, is laughably low. The new campus allows for hands on learning and experimenting. Students who engage in hands-on activities understand concepts more deeply and remember them more accurately.

Project-based, case-based, and team-based learning and problem-solving are activity-based approaches to teaching and learning, allowing students to become creators of knowledge rather than mere recipients of knowledge.

Students might annotate a text or play or work of art, map and analyze data, visually represent change over time, document a neighborhood or community. The web can then make student projects and research publicly accessible. Technology is a given provision at the new campus.

By learning by doing can take even richer forms. A solver community brings together students and faculty to source innovative solutions to the critical challenges of our time. The APU new campus research centres allow for tackling a real-world challenges and is a proven way to nurture a community of engage, creative learners. One of the broader goals is to transform a class of students into a knowledge network, an ongoing community that can continue to partner and share expertise and insights.

Enjoy your new campus.....it has finally come into your learning experience.



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Innovative Designs toward Sustainable Products – Series 5

Rubbish is a huge problem, the UK alone produces 100 million tonnes of rubbish every year. Our land and oceans are filled with rubbish, so people are inventing new ways to clean the environment. Just looking at the hot drink, just in America, 146 billion paper cups are thrown away every year after we have enjoyed our teas, coffee or hot chocolate. What will be figure looking like if the whole world is included? Scary right! However, just looking at America, this has eventually increase the carbon foot print of paper cups where each paper cup produces 35g of CO₂ emission as shown in Figure 1. Can you now calculate the amount of CO₂ produced by 146 billion paper cups:



Figure 1: Carbon Footprint of Paper Cups

This global issue leads to ideas about producing water bottles made from algae and paper cups with seeds and many other ideas. Many of these inventions are still in the very early stages of development. But with investment, public awareness, interest and support some of these inventions may change the way we live and define a sustainable and environmentally friendly society. This is by no means an exhaustive list but one of some inventions that have caught my eye and made me wish I had thought of that, is the “Seed Cup” or also better known as biodegradable seed cup. A company in California called “Reduce. Reuse. Grow” has designed a coffee cup as shown in Figure 2 that is not only biodegradable, but even has seeds in its walls so that it can be planted and grows into a plant or flower. The company offers this solution with the aim to educate consumers as well as change their bad coffee habits. These innovative cups as said earlier, feature embedded seeds in the coffee cup which can be planted after finishing your beverage to grow flowers or native trees of your state. The company launched their first round of compost packaging products with their program ‘Buy a Cup, Grow a Plant’ in San Luis Obispo, California. Future plans include expansion in to other territories such as Denver, Seattle, and several major cities in California. This program is helping offset overgrazing, fire destroyed forests, and deforestation.

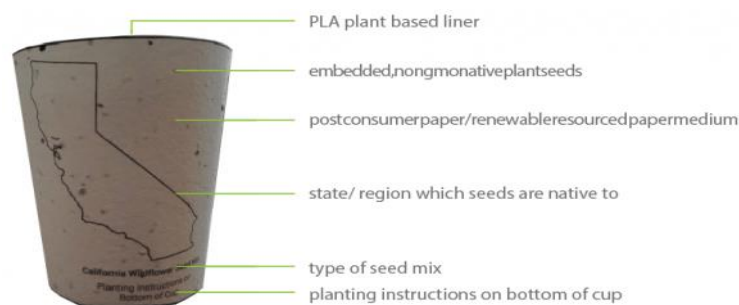


Figure 2: Biodegradable Seed Cup

Alex Henige the genius designer behind this idea, says “every cup has then got the potential to become a plant”. These paper based cup which will be able to extract over 1 ton of CO₂ out of the atmosphere annually once planted. So, how this works...Simple, as shown in Figure 3 the consumer drinks their coffee from the coffee shop. If they choose to take the cup with them, they can plant it in several scenarios based off of the seed variety embedded within the cup.



Figure 3

Consumers can see the seed variety displayed on the front of their cup as well as planting instructions on the bottom of the cup. So how we plant the cup? As shown in Figure 4, unravel the cup, then soak it in the water for 5 minutes, plant it in your garden or any suitable area and finally watch them grow! What a fascinating idea!

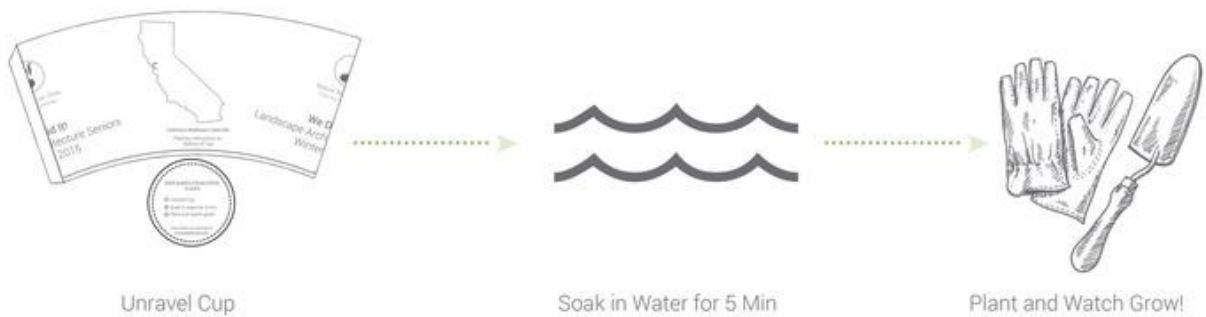


Figure 4

If the consumer decides to discard the cup, as shown in Figure 5, they can place the cup in a special trash bin where Reduce. Reuse. Grow.(RRG) will come in and take the cups for local reforestation purposes. Again if you decide to throw away, no problem. The cup is compost certified and will be able to biodegrade within 180 days leaving the seeds and cup itself to turn into nutrients for other plants to enjoy!

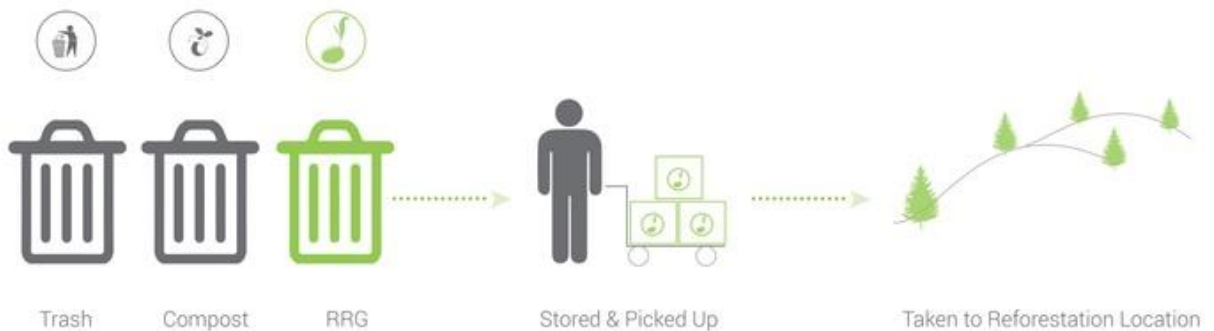
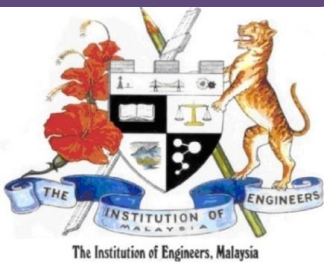


Figure 5

Why is this approach said to be sustainable? That because as like said earlier, these paper based cup which will be able to extract over 1 ton of CO2 out of the atmosphere annually once planted. We could say the Mother Nature while we enjoy our coffee. Think about it! You might be the next inventors of such ingenious ideas to a great sustainable world. Let embrace the idea of sustainability and put it in practice.

For more information watch the video at: <https://www.kickstarter.com/projects/reducereusegrow/the-worlds-first-plantable-coffee-cup>

All figures adapted from: www.kickstarter.com/projects/reducereusegrow



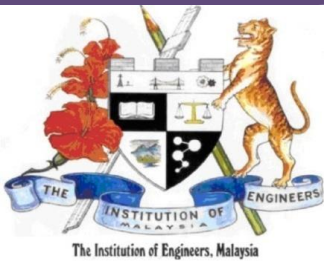
INDUSTRIAL VISITS

MEASAT Teleport & Broadcast Center



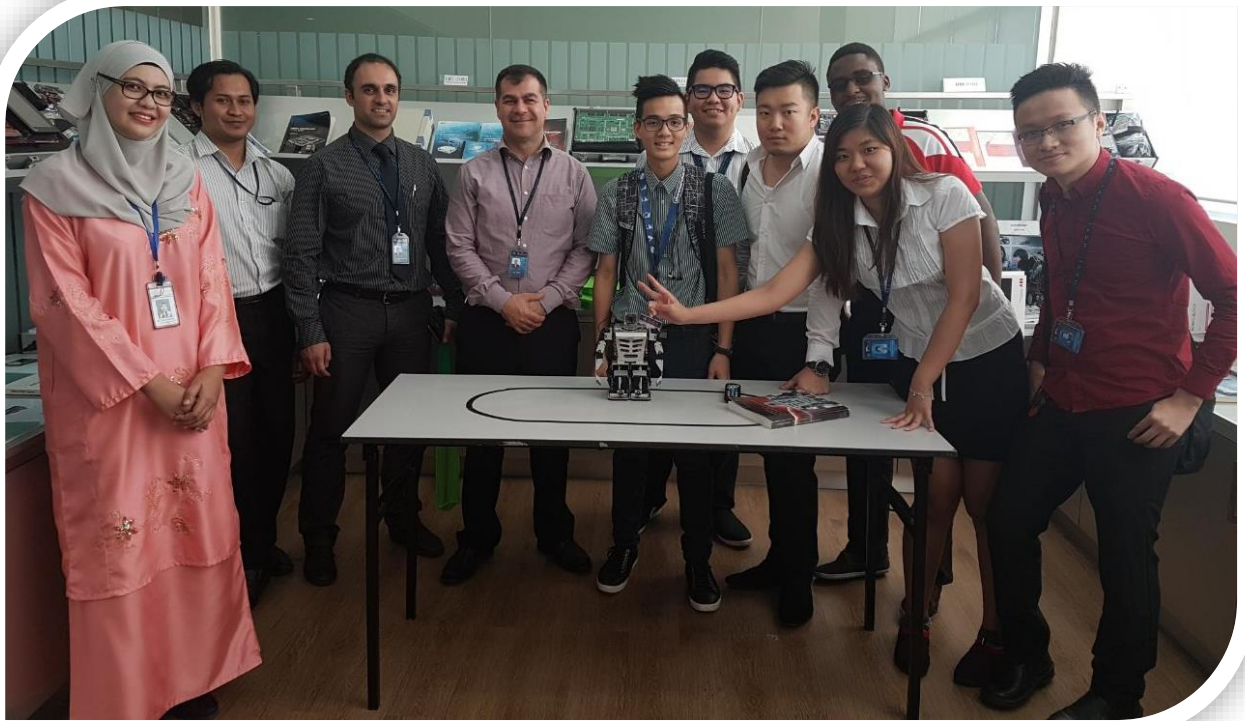
Since 1996, MEASAT has been providing premium satellite solutions to customers across the Asia-Pacific region, and now has a reach that covers over 150 countries across Asia, Africa, Europe, the Middle East and Australia, representing 80% of the world's population. The MEASAT satellite fleet includes the state-of-the-art MEASAT-2, MEASAT-3, MEASAT-3a, MEASAT-3b and MEASAT-5. The MEASAT fleet supports leading DTH platforms in Malaysia, Brunei, India and Indonesia, providing DTH multi-channel television services to over 20 million subscribers. The fleet is also used by many leading international channel operators to distribute television programming to pay television platforms, and by telecommunications operators to support remote connectivity, cellular backhaul, IP trunking and corporate VSAT networks. On March 13, 2017 twenty five engineering students accompanied by two staff visited the MEASAT Teleport and Broadcast Center at Cyberjaya.





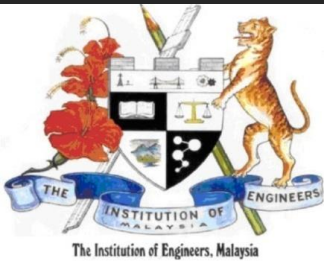
INDUSTRIAL VISITS

Mutiara Synergy Solutions Sdn Bhd



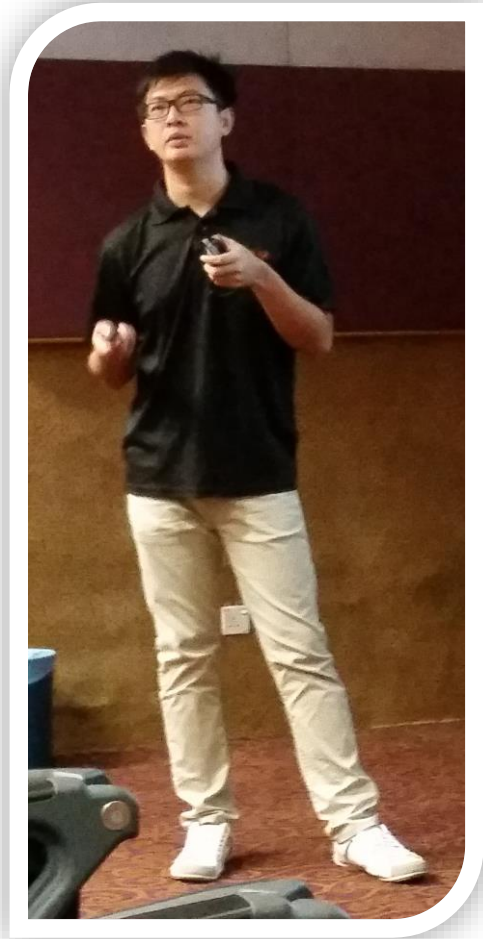
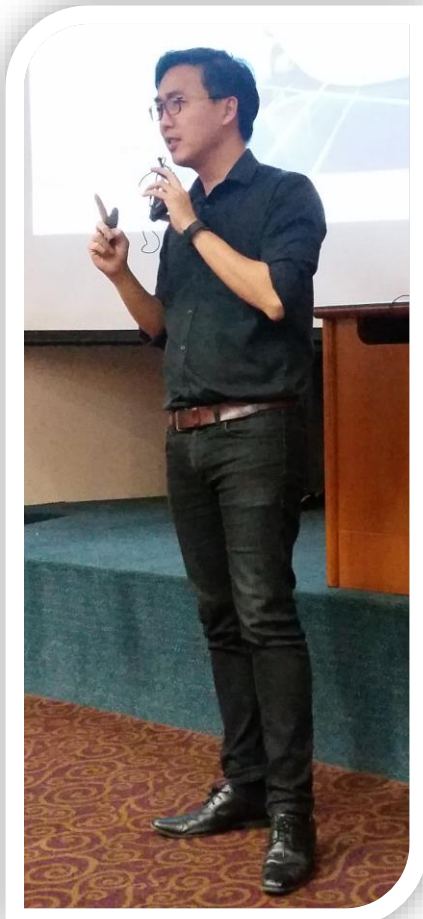
On March 16, 2017, fifteen students accompanied by two staff visited Mutiara Synergy Solutions Sdn Bhd. The students had an opportunity to view the trainer kits namely HBE-ARDUINO-SENSOR, BT2007 BLUETOOTH TELECOM TRAINER and RFID/USN Training System





SEMINARS & WORKSHOPS

PLUS SOLAR SYSTEMS SDN BHD



+Solar System Sdn Bhd with an aim to provide the highest solar PV development standards while making the switch to cleaner energy simple and painless for customers are involved in offering a world class residential solar PV solution. On February 8, 2021, Mr Simon Wong & Mr Siow Lip Han of +Solar Sdn Bhd shared their knowledge on solar photovoltaic system and their experience in project management at sites. 90 students and 15 staff attended the talk.



Debate Competition at Engineering Carnival Week - Nottingham



Engineering Carnival Week is an annual event organized by the Institution of Engineers Malaysia University of Nottingham Malaysia Campus Student Branch with an aim of “bringing students to enjoy themselves as they get a further glimpse into the engineering world”. The theme for this year was “E-inspire” and it featured a variety of activities including exhibition of prototypes, engineering quiz competition, engineering talks, debate competition, team building challenges and many more. APU was among the universities invited to take part in the debate competition, forming two teams to compete in the two categories; Technical Debate and Non-Technical Debate. Each team comprised of four members. A total of 14 teams from different schools took part in the Non-Technical Debate while 8 teams from different universities challenged the Technical debate championship.

The first stage of the competition was the kickoff round which took place on Monday 20th February, 2017, in which each team was given a topic to brainstorm for 10 minutes and later present to a panel of judges for 10 minutes. The APU Technical Debate Team, whose members were Hoy Chun Wai, Chama Serenje, Ting Ding Ching and Mohammad Goolfee Haadi, managed to wow the judges with their calm and structured style of presentation on the topic “Should bot developers be held responsible for the criminal activities resulting from their creations?” This secured them a place in the finals. The topic for the final round of the debate was “Should human cloning be legalized?” and the team faced the hosts, University of Nottingham Malaysia Campus in a traditional debate style witnessed by fellow students and lecturers. Despite not having one of the team members present and the other team members having to face exams the very next day, the team managed to be the first runners up in the competition. Many thanks goes to UNMC IEM Student Branch for extending this invitation and to the lecturers Mr Shankar Duraikannan and Mr Chandrasekharan Nataraj who accompanied the team and gave their support and mentorship during the course of the competition.





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SOE COMPETITIONS

IEM Gold Award 2017



On 15th April 2017, at the Institution of Engineers Malaysia's annual dinner APU's School of Engineering was again proud to have our top student from 2016 win the IEM Gold Medal for engineering student excellence in academic results obtained. The gold medal achievement was the 4th year in a row and the School of Engineering is proud to have made it this far. This year the Gold went to **Phoo Khai Meng** – our Mechatronics Engineering student. Kudos to the lecturers who taught his over his 4 year tenure at APU.





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SOE EVENTS

SoE Staff @ APU Cricket Championship



SoE staff teamed up with the APU cricket team managers, played against 8 other student teams in APU Cricket Championship. Captained by Dr Chitturi Venkatratnam, the master blaster, the team won a match with the captain's knock of half century which was one of the highest score of the championship.



Engineer A Better World Everyday