Green solutions

SCIENCE moves at a startling pace and at UCSI University's Faculty of Engineering, Technology and Built Environment, a green revolution of sorts is approaching its zenith.

If you are an engineering postgraduate student at UCSI, you will get to learn from and work alongside academics who walk the talk.

Using various photovoltaic systems, Assoc Prof Dr Rodney Tan Hean Gay seeks to convert sunlight into electricity under partial shading circumstances.

"While Malaysia's proximity to the equator sees it receiving plenty of sunlight throughout the year, cloud formations also take shape rapidly and this adversely affects the conversion of sunlight to electricity," he explains.

"Presently, photovoltaic systems are prone to breaking down and the entire circuit fails whenever they are covered in shade or by dirt."

Using theoretical modelling and experimental measurement, Assoc Prof Tan will focus on understanding the impact of shading on different photovoltaic systems.

As the beneficiary of Malaysia's Fundamental Research Grant Scheme (FRGS), Assoc Prof Tan has been given RM85,200 to spur his research.

He was also awarded the Mathworks Central Challenge Coin by Mathworks, a leading developer of mathematical computing software for engineers and scientists.

Asst Prof Ahmad Shamiri is also making waves for his efforts to improve wastewater treatment.

After a decade in the petrochemical industry, Asst Prof Ahmad discovered a type of algae capable of consuming chemical waste, neutralising wastewater in the process. If grown in large numbers, the algae could pass as an economical, safe measure to treat wastewater from factories.

"Wastewater is often treated with chemicals that are dangerous. Using algae to treat wastewater reduces the cost of procuring chemicals and lowers health risks significantly," says Asst Prof Ahmad.

His work has not gone unnoticed in the international arena. In June, RMIT University invited Asst Prof Ahmad to further his work in Melbourne.

Taking up the offer, Asst Prof Ahmad will leave for Melbourne in October for a month, before returning to UCSI to wrap up his research.

Asst Prof Ammar Ali Al Talib, the faculty's head of postgraduate and research, is collaborating with Asst Prof Mahmood Al-Imam to shorten the harvesting process of oil palm.

Instead of harvesting through manual labour that consumes energy and time, they use lasers to detach oil palm clusters to save time and energy.

Shedding light on the research culture at UCSI, Asst Prof Ammar explains that pertinent research is carried out in each engineering field and the university has established the Process Systems Engineering Centre (PSEC) to spur the efforts.

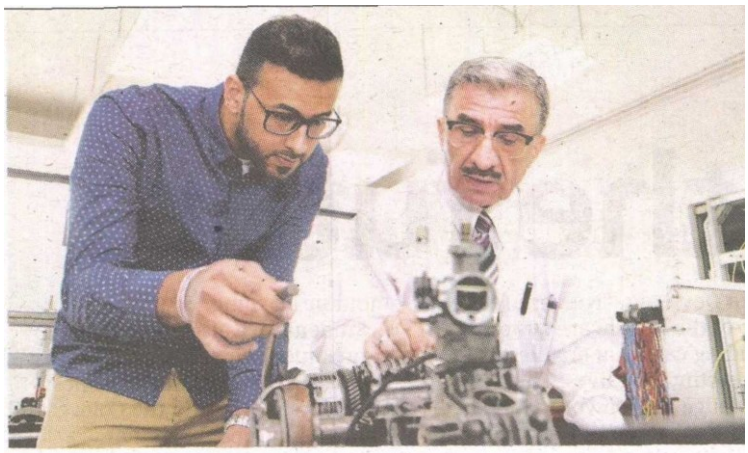
He adds that distinguished academics from King's College London of the United Kingdom, Queen's University Belfast of Northern Ireland, Fraunhofer Institute for Production Systems and Design Technology of Germany, and Polytech Nantes, Université de Nantes of France serve as external advisors and examiners for the postgraduate students.

Engineering-related research at UCSI is bolstered by the university's research laboratory that caters to simulations.

This dynamic setting provides postgraduate students with avenues to achieve their moonshot. By pursuing the Master of Philosophy in Engineering and Doctor of Philosophy in Engineering programmes, students can focus on key research areas of their choice.

UCSI's postgraduate programmes in engineering cover these specialisms: mechanical, mechatronics, electrical, communications, civil, petroleum and chemical engineering.

■ For more information, call 03-9102 4739 or visit *www.ucsiuniversity.edu.my/onlineenquiry.*



Asst Prof Dr Ammar Ali Al Talib (right) leads the Faculty of Engineering, Technology and Built Environment's postgraduate studies and research.