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Groundbreaking research projects

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THE public universities promised it would be an eye-opener and they have delivered their promise.

"It" was the inaugural Public Universities' Research and Development exhibition held at the Putra World Trade Centre in Kuala Lumpur recently.

Two weeks ago, 15 public universities including "old faces" such as Universiti Kebangsaan Malaysia (UKM) and Universiti Malaya (UM) joined forces with newcomers Universiti Malaysia Sarawak (Unimas) and Kolej Universiti Teknikal Kebangsaan Malaysia (KUTKM) to showcase some of their best research findings to the public.

According to UKM Vice-Chancellor Professor Datuk Dr Anuwar Ali, the exhibition was held in response to Prime Minister Datuk Seri Dr Mahathir Mohamad's challenge to public universities to exhibit their research findings.

He said the PM's challenge came about following complaints from both the public and industry that the universities' research findings were not very transparent.

"With help from the Ministry of Education, some 600 findings from fields ranging from space technology to archaeology have been exhibited," added Anuwar, who was also the chairman of the exhibition committee.

The research projects are anything but run-of-the-mill. They are groundbreaking research projects with potential to be commercialised.

UKM's booths, which number the highest among all the universities, were a big hit. Among the attractions were five projects on space technology conducted by the Faculty of Engineering.

Another projects was the Low-Cost Beacon Control Receiving System, a low-cost tool for studying the radio link between the Earth and a satellite.

Team member Izhar Hadafi Abdul Halim, a graduate student from the Faculty of Engineering, says: "Atmospheric activities such as haze or rain can affect the strength of signals transmitted via satellite. For telecommunication companies, this is bad for business.

"By using a personal computer, a small satellite dish and the Protea 2GHz RF Field Analyser, telecommunication companies can record and monitor the signals and their strength," he added.

In the long run, the companies can predict signal weakness and take measures to avoid service disruption.

Unimas too showcased an engineering-based project. If all goes well, engineering teams will soon be able to collaborate "remotely" using the Virtual Collaboration In Product Design (VCODE).

Professor Dr Halimahtun M. Khalid from the Institute of Design and Ergonomics Application said the project was aimed at developing an interface for conceptual design.

"The VCODE system comprises an integrated desktop video conferencing system with collaborative multimedia and Web-based Virtual Reality Modeling Language (VRML) environment.

"This enables engineering teams to conduct discussions and design a product together even when they are kilometres apart," said Halimahtun.

Another noteworthy research project from Unimas is the Experimentation on Natural Resist, Natural Dyes, Synthetic Dyes and Devore For Contemporary Textile Printing and Dyeing.

June Ngo, a lecturer from the Faculty of Applied and Creative Arts, said

the project explored the potential for fusion between the textiles craft method and textile design for mass production.

"I use natural dyes such as curry, onionskins, tumeric and tea, and reactive dyes creatively at intervals before transferring the colour onto silk fabrics by hand-screen, devore and natural resist printing," she adds.

Ngo believes that when arts and science come together, the results are "unique".

"I took part in the World Eco-Fibre Textile Fashion show in Hong Kong last September and the response from the public was amazing. There were even requests to purchase the fabrics because of the quality and rich colour," she added.

Although much emphasis is placed on commercialisation, the universities have not neglected fundamental research projects.

Associate Professor Dr Tunku Mohani Tunku Mohtar from UM's Department of Language Education and Literacy developed the Telematics for Teacher Training In English Language Training website which assists trainees of Teaching of English as a Second Language (TESL) Teacher Education Project during their practical training sessions.

The idea for the website came up when many of her students called her for advice on lesson plans during their training sessions.

"I wanted to set up a comprehensive and interactive website which will serve as a one-stop resource centre for the students as well as other teachers.

"There are useful tips and lesson plan ideas for teachers. Apart from that, they can also post questions and receive feedback from us," she adds.

Tunku Mohani and her teammates collaborated with Professor Keith Cameron from the School of Modern Language, University of Exeter, United Kingdom to set up and maintain the website.

"I hope it will be a catalyst for distance learning among teachers who are usually too bogged down by their workload to further their studies," she added.

Most of the research findings exhibited are still under development but each has a bright prospect for commercialisation.

In fact, a good number of the researches have caught the attention of the industry. What may transpire is still uncertain but looking at how things have developed, commercialisation is likely to happen sooner than we think.

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