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MIMOS' nanotech R&D to develop gas and heavy metal sensors

KUALA LUMPUR: MIMOS' Nanotechnology research & development (R&D) would focus on developing gas and heavy metal sensors and digital farming intelligent systems next year, said MIMOS Director of Research for MEMS/NEMS & Nanoelectronics Saat Shukri.

He said 2013 would see further advancement of MIMOS' sensors to target applications such as bio sensors and remote environmental monitoring and food traceability.

In 2014, he said, the focus would be on sweat and body nutrient sensors, livestock and plant disease monitoring systems using Nano-fluidic services.

These efforts are the focus of MIMOS' sensor systems and solutions technology platform roadmap from 2011 to 2015 which aims at enhancing its sensors and microenergy devices.

"As a target for 2015, these sensors are to be developed into a reconfigurable platform with focus on wearable bio-medical devices integrated with ubiquitous sensors," Saat said at a media briefing on Driving Economy Through ICT and Nanotechnology here Thursday.

Saat said the local market size for the sensor systems was estimated at RM200 million.

He also said that MIMOS' roadmap was developed in line with the global market growth expectations.

Saat said this would be possible by incorporating Nanotechnology based elements to ensure higher sensitivity, better responses, lower power consumption, smaller size, increased robustness, flexibility and energy storage capacity as well as to make it more ideal for power conversion and cost competitive for other industries such as aquaculture, environmental, health, safety and

defense.

"At present, the Nanoelectronics team efforts focus on functionalising its Nanomaterials and integrating Nanomaterials with its various sensors and microenergy devices," he said.

According to Cientifica, a global consulting firm that tracks technology from the lab to the boardroom, the market for products enabled by Nanotechnology is expected to reach US\$265 billion by next year and US\$1.5 trillion by 2015 with the highest growth rates expected to be in the healthcare and pharmaceutical sectors.

Meanwhile, MIMOS Nanotechnology Centre of Excellence (CoE) which currently has 37 domain experts in Nanotechnology, targets to increase the number of its researchers by two fold over the next five years in line with its goal of becoming the competency development centre for next generation Nanotechnologists.

Saat said Nanotechnology CoE had also increased its number of patent disclosure from 24 in 2006 to 190 last year, of which 79 had been filed and six patents granted by MyIPO.

"We have to produce 30 patents a year, that's our KPI (key performance index). We have to deliver that as we have to create more and more patents to have the technology. In the past, we had done about 40 patents a year," he added.

The centre has produced three main types of Nanostructures namely Nanoparticles, Nanotubes/Nanowires and Nanocomposites. It has also developed high aspect ratio silicon Nanostructures for various NEMS applications. – Bernama