$100m centre to drive research in new tech

Aim is to put Singapore at forefront of work on lasers, fibre-optics

By IRENE THAM
TECHNOLOGY CORRESPONDENT

FANCY being able to print a commercial aircraft or surf the Web at actual speeds of 100Gbps, more than 100 times faster than what is currently available?

These ground-breaking developments could come out of research labs in Singapore in just a few years.

Yesterday, the nation unveiled its first Photonics Institute, complete with high-tech machines to research and make next-generation lasers and fibre-optic cables that will enable such breakthroughs.

Backed by this $100 million facility at the Nanyang Technological University (NTU), Singapore has joined a global league of nations with such advanced research capabilities, which include the United States and Britain.

Current research in photonics includes work on hollow fibre-optic cables and better compression and transmission technologies for faster Web surfing.

The fibre-optic cables that deliver today's broadband services are as thin as a strand of hair but they are not hollow-core.

Another key area of research involves advanced 3D laser printers that can print stronger and more well-defined models. One goal is to print parts of an aircraft or a car that can be fitted together without additional work such as sanding and polishing.

"Asean's rising affluence will increase regional demand for consumer devices, cars..." said Minister of State for Trade and Industry Teo Ser Luck, speaking yesterday at the launch of the institute.

He added that this development would in turn drive the need for laser-aided manufacturing.

He said Singapore aims to train 120 postgraduates in photonics specialisations over the next five years.

The funding, expected to last three to five years, came from the Agency of Science, Technology and Research (A*Star), DSO National Laboratories, the Economic Development Board, the Ministry of Education and the National Research Foundation.

"Our goal is to spin off companies and license products developed from our research efforts for commercial use," said NTU professor Tjin Swee Chuan, a co-director of the Photonics Institute.

"This will boost Singapore's economy, and establish the nation as a powerhouse in photonics and optics research," he added.

With 4,000 sq m of floor space across three schools at NTU, the facility has 120 scientists, researchers and doctoral students.

It will work with Optoelectronics Research Centre (ORC) at the University of Southampton in Britain. ORC director David Payne also serves as a co-director of the NTU facility.

itham@sph.com.sg