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New Photonics Technology Center Moves Local Industry Upstream

A new research center opened at Hong Kong University of Science and Technology (HKUST) today (28 May) is working closely with the industry in developing new technology for the manufacture of high-brightness inorganic blue/green light-emitting diodes (LEDs).

The Center was established with a HK\$15 million grant from the Innovation and Technology Commission of the Hong Kong Government and \$1.7 million sponsorship from the LED industry. The Commissioner for Innovation and Technology Commission, Mr Francis Ho, was the officiating guest at today's ceremony.

LEDs are semiconductor devices that emit colored lights. They have the advantages of small size, high brightness, low power consumption, longer lifetime, greater reliability and flexibility in designing new lighting applications, such as outdoor video screens. The production cost of some new colors such as blue, green, and white, is relatively high. Because LED structures that emit in the blue/green spectral regimes are advanced models that are difficult to fabricate, they are always in high demand.

Speaking at the opening ceremony, HKUST President Prof Paul Ching-Wu Chu described the Center as a good example of how the Government, education, and industrial sectors can work as a team to enhance Hong Kong's competitiveness.

"To reap the benefits of photonics, or any kind of high technology, we need contributions from all parties--the academia, the public sector and industry. The Center will help place Hong Kong's industry at the upstream production chain by introducing cutting-edge photonic technologies," said Prof Chu.

Director of the Center, Prof Kei May Lau of HKUST's Electrical and Electronic Engineering Department, said: "The Center will perform basic research, design products and processes, conduct experimental studies, fabricate and test prototype devices, and transfer developed technologies to industry. Apart from helping the local industry to develop new products, the Center will also nurture local professionals."

LEDs have been used to replace conventional incandescent in traffic lights and color light bulbs for special applications. Their high brightness makes them ideal for applications in large-area display panels, traffic signals and other signages as well as backlighting for consumer electronics products, such as mobile phones and electronic games. One of the most outstanding LED displays is the Nasdaq MarketSite Tower in New York's Time Square, which is the largest video screen in the world and contains almost 19 million high-brightness LEDs. In Hong Kong, the video screen at Times Square in Causeway Bay and display panels in MTR compartments are all LED applications.



From the left: Prof Paul Chu, Mr Francis Ho, Prof Kei May Lau, and Prof Otto Lin