

## **NEWS RELEASE**

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### **NTU conducts cutting-edge research in optical access technology**

Two Nanyang Technological University (NTU) professors will showcase their cutting-edge research projects in the area of optical access technology at a forum today. Professor Yoon Soon Fatt and Associate Professor Liu Ai Qun, both from NTU's School of Electrical and Electronic Engineering (EEE), will present their research achievements at the 2nd ONFIG<sup>1</sup> Program Wide Forum, organised by the Science & Engineering Research Council of the Agency of Science, Technology and Research.

NTU is participating in six out of the eight projects supported under ONFIG. Three projects are led by NTU as principal investigators. Prof Yoon's project is about miniaturised optical technology, using quantum dots, for fast data transmission speeds. Assoc Prof Liu's two projects are about microelectromechanical systems (MEMS) devices for high speed optical fibre communication network applications.

Quantum dots are nano-sized particles, each about 1/4000<sup>th</sup> the diameter of a strand of human hair. These dots serve as a highly efficient medium for light amplification. The EEE team, headed by Prof Yoon, crossed a milestone when they developed the technology to produce or "grow" these dots using new forms of semiconductor compounds currently not available commercially, and then found a way to introduce these dots as a component of lasers.

MEMS is an enabling technology that integrates mechanical structures with microelectronics, allowing the development of smart products and making possible the realisation of complete systems-on-a-chip. MEMS technology has an advantage over existing technology because it enhances existing microchips to make them become "intelligent". The EEE team, led by Assoc Prof Liu, has been working on MEMS research for the past six years and is now one of the world's leading MEMS research group.

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<sup>1</sup> Optical Network Focused Interest Group

Says Prof Yoon, *“We are excited about our achievements in quantum dot science research because the development of NTU’s quantum dot laser opens up a host of exciting research opportunities in nano-photonics science, optical communication and optical interconnect components that could lead to bold and exciting innovations in the future for telecommunication and integrated semiconductor applications. The ONFIG Program provides an excellent platform to link basic research to potential applications.”*

Says Assoc Prof Liu, *“NTU is a key leader in MEMS technology research in Singapore and around the world. We are honoured to work with ONFIG during the last four years. We are not only coming up with an innovative research idea, but we are also capable of converting this idea into a practical application which can be tested at high speed optical communication networks. Our team is working on the best research innovation, which combines theoretical concepts with engineering practise. We are capable of making an impact in leading the new research direction of MEMS technology.”*

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***About Nanyang Technological University***

Nanyang Technological University (NTU) is a research-intensive university with globally acknowledged strengths in science and engineering. The university is located in a garden campus in western Singapore, tracing its roots back to 1955.

NTU has 4 colleges comprising 12 schools. The College of Engineering comprises six schools focused on technology and innovation. Its research output ranks among the top four in the world. The College of Science pushes the boundaries of Singapore’s life sciences initiatives. The Nanyang Business School (the College of Business) offers one of the world’s top 100 MBA programmes. The College of Humanities, Arts, & Social Sciences boasts Singapore’s first professional art school offering degree courses in art, design and interactive digital media, the Humanities and Social Science School, and the Wee Kim Wee School of Communication and Information, a top journalism and media school in Asia.

The 13<sup>th</sup> school, S Rajaratnam School of International Studies, will be inaugurated in 2007. An important component of this autonomous school is the Institute of Defence and Strategic Studies, long recognised as a world authority on strategic studies and terrorism.

NTU is also home to the internationally-acclaimed National Institute of Education, Singapore’s only teacher-training institute.

NTU has in place multi-country programmes and initiatives with established institutions worldwide. Key partners include MIT, Stanford University, Cornell University, Caltech, University of Washington, Carnegie Mellon University in USA, Peking University, Shanghai Jiaotong University, Waseda University, Indian Institute of Technology in Asia, Cambridge University, Imperial College and Swiss Federal Institute of Technology in Europe.

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