



## **JOINT NEWS RELEASE**

### **IME and Fujikura strengthen partnership through joint development of chromatic dispersion compensator devices**

**Singapore, 20 September 2007** – The Institute of Microelectronics (IME), a member of the Agency for Science, Technology and Research (A\*STAR), has inked an agreement with Japan’s Fujikura Ltd to collaborate on a research and development project aimed at stabilising optical signals in high-speed optical networks. The agreement was signed at the Fujikura headquarters on 5 September by Professor Kwong Dim-Lee, Executive Director of IME, and Mr. Takao Shiota, Senior Vice President of Fujikura Ltd. This partnership will result in the commercialisation of a chromatic dispersion compensator (CDC) device targeted at the optical communications market in Japan.

IME and Fujikura will jointly develop a CDC device using a novel waveguide grating structure to compensate for chromatic dispersion in optical signals, which causes data distortion over long distances in high-speed telecommunication networks. In optical fibers, waveforms or light signals broaden over long distances, making the signals difficult to interpret by the receiver. Chromatic dispersion in particular poses a major challenge as the effects increase non-linearly at the rate of the square of the increased speed of the transmission. The developed CDC device provides a robust solution to this challenge by enabling smooth, continuously adjustable tuning of the chromatic dispersion at the optical receiver.

Fujikura is a leading manufacturer of world-class optical fiber communication cables. It is also active in optical components, optical instruments, new electronic and automotive components, and the development of new technologies.

In the project, Fujikura will take charge of the design of novel optical devices. The device fabrication and wafer dicing will be carried out at IME’s advanced 200mm silicon wafer processing and packaging facility, where deep ultraviolet lithography will be utilised to produce the photonic crystal structures for the CDC devices.

IME is one of the few organisations in the world with such capabilities. The fabrication process uses silicon-on-insulator wafers and is fully CMOS-compatible, paving the way for Fujikura to offer a “plug and play” solution while ensuring low cost and high yield in its production.

The market for such optical components is emerging, and demand is expected to accelerate quickly as the transmission rates increase. In addition, the mandatory and higher usage of the chromatic dispersion compensator in network systems that deploy Dense Wavelength Division Multiplexing (DWDM), a fiber-optic transmission technique that employs light wavelengths to transmit data, is expected to fuel the market growth of this device. According to industry analysts, the global demand for CDC devices is estimated to grow at an annual rate of 120%.

Said Professor Kwong Dim-Lee, Executive Director of IME, “There is strong indication of spending growth in the optical communications industry, with a distinct shift from discrete optical components to more CMOS-based integrated platforms. IME’s partnership with Fujikura is certainly a step in the right direction, in using CMOS photonics technology to make low-cost, high-speed, high-quality optical communications a reality.”

Mr Lim Chuan Poh, Chairman of A\*STAR, said, “Singapore has a strong semiconductor manufacturing industry with world class infrastructure and an excellent business environment. We are confident that through IME’s research and collaboration projects with Fujikura, we will be able to generate valuable intellectual property and market attractive products that can be mass manufactured in Singapore. We also hope that Fujikura will expand its operations and presence in Singapore as a result of this strategic collaboration.”

Mr. Kazuhiko Ohashi, President of Fujikura Ltd., said, “Fujikura has a strong position in the fiber optic telecommunication business, especially optical fiber related products. New Generation Network (NGN) is expected to prepare more convenient information technology infrastructure for customers. Fujikura wants to contribute towards NGN with a new type of optical component meeting its requirements. Our photonics technology will be applied to NGN as a critical solution for photonics components.”

IME and Fujikura have earlier signed a master collaboration agreement, which will end in December 2008. As the global demand for optical devices grows, more research partnerships are expected between the two parties in future.

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Notes to the Editor:

**About Agency for Science, Technology and Research (A\*STAR)** [www.a-star.edu.sg](http://www.a-star.edu.sg)

The Agency for Science, Technology and Research, or A\*STAR, is Singapore's lead agency for fostering world-class scientific research and talent for a vibrant knowledge-based Singapore.

A\*STAR actively nurtures public sector research and development in Biomedical Sciences, Physical Sciences and Engineering, with a particular focus on fields essential to Singapore's manufacturing industry and new growth industries. It oversees 14 research institutes and supports extramural research with the universities, hospital research centres and other local and international partners.

At the heart of this knowledge intensive work is human capital. Top local and international scientific talent drive knowledge creation at A\*STAR research institutes. The Agency also sends scholars for undergraduate, graduate and post-doctoral training in the best universities, a reflection of the high priority A\*STAR places on nurturing the next generation of scientific talent.

**About Institute of Microelectronics (IME)** [www.ime.a-star.edu.sg](http://www.ime.a-star.edu.sg)

The Institute of Microelectronics (IME) is a research institute of A\*STAR. Positioned to bridge the R&D between academia and industry, IME's mission is to add value to Singapore's semiconductor industry by developing strategic competencies, innovative technologies and intellectual property; enabling enterprises to be technologically competitive; and cultivating a technology talent pool to inject new knowledge to the industry. Its key research areas are in integrated circuits design, advanced packaging, bioelectronics, MEMS, nanoelectronics and photonics.

**About Fujikura Ltd** [www.fujikura.co.jp/ie\\_e](http://www.fujikura.co.jp/ie_e)

Fujikura Ltd commemorated the 120th anniversary of its founding, in 2005. Today the scope of its business has broadened beyond core cable products for the electrical power industry and plants, and encompasses the electronic equipment, auto and telecommunications industries. Fujikura relentlessly strives to create novel solutions through R&D and has delivered leading products, such as optical fibers and flexible print circuits.

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