



## **JOINT PRESS RELEASE**

# **Lightwire's Advanced Silicon Photonics Technology Moves from IME Development Fab to Chartered Manufacturing Facility**

*New approach to 10Gbps to 100Gbps optical solutions will lead to advanced, low-cost silicon photonics devices by mid-2008*

**ALLENTOWN, PA and SINGAPORE – November 27, 2007** – Lightwire, Inc., a US-based provider of high-bandwidth interconnects, today announced that its silicon photonics process jointly developed with Singapore's Institute of Microelectronics (IME) and Chartered Semiconductor Manufacturing Ltd. (Chartered) for producing ultra-high speed devices of 10 to 100 Gbps is being transferred to Chartered, one of the world's leading semiconductor foundries. The new silicon photonics device technology, protected by over 120 patents, is revolutionary in its ability to integrate light modulation circuitry into silicon, yet is fully compatible with Chartered's current high-volume CMOS process technologies. This is a critical milestone in bringing to market a new silicon photonics process that meets the high-speed, low-power and low-cost requirements of high-performance interconnects for computing and communications.

"Silicon photonics is an emerging field that offers tremendous potential in every area requiring high-speed interconnects, from the backbone of the Internet to high-performance computing and networking," points out Lightwire CEO Vijay Albuquerque. "But the key is being able to drive down the extremely high costs associated with traditional optical solutions. Lightwire's innovative silicon photonics-based technology offers orders of magnitude improvements in both performance and cost of interconnects by making high-performance optical interconnects as inexpensive as electrical ones. Today's announcement, a result of a three-party collaboration by IME, Chartered and Lightwire which began in 2006, moves the industry one important step closer to that goal and opens the doors to production-ready devices in 2008."

"Through this collaboration with international partners, we aim to jump-start a silicon photonics industry in Singapore. The project combines the value-add of the world-class silicon photonics technology of Lightwire, the excellent process technology research of IME and the world-class

manufacturing of Chartered. It is a unique model where world-class companies from multiple geographical regions are able to capitalize on the strengths of Singapore research institutes, bridging the gap between design and manufacturing," said Mr. Boon Swan Foo, Executive Chairman of Exploit Technologies, the marketing and commercialization arm of A\*STAR. "Given the vast commercial potential of the technology, Exploit Technologies has identified silicon photonics as a flagship initiative. Exploit's funding of the collaborative efforts of A\*STAR's research institutes supports technologies identified as key to future high volume market opportunities."

Professor Dim-Lee Kwong, Executive Director of IME, said, "We are extremely pleased to announce this milestone as it will have significant impact on a very important emerging field, silicon photonics. The collaboration with Lightwire is a strategic step in utilizing IME's CMOS process capability to develop silicon photonics process technology fully compatible for volume production at Chartered."

"Chartered is pleased to add this new CMOS photonics process to our high-volume manufacturing capabilities," said Dr. Simon Yang, Senior Vice President, Fab Operations and Chief Technology Officer at Chartered. "This opens the door for Chartered's participation in the high-volume markets for ultra-high speed silicon photonic devices. Lightwire, IME and Chartered have worked well together, and we are pleased to have reached this milestone so quickly."

"Silicon photonics has tremendous potential in changing how computing, communications and networking equipment incorporate very high-speed interconnects," said Jag Bolaria, Senior Analyst at The Linley Group. "Silicon photonics is moving from the lab into mainstream production and this is a major breakthrough, given Chartered's industry leading position as a dedicated semiconductor foundry."

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### **About Lightwire**

Lightwire, Inc. delivers industry-leading 10 Gbps and faster interconnects for next-generation networking, communications and server/storage systems. Lightwire's high-speed interconnects exploit its patented silicon photonics-based Optical Application Specific Integrated Circuit (OASIC) interconnect platform to achieve unprecedented signal integrity, power dissipation, and scalability. Lightwire has applied for over 120 patents with more than 50 granted for its innovative silicon photonics technology. Lightwire is a privately funded fabless interconnect company with offices in Allentown, PA. Lightwire's key R&D and manufacturing partners are located in Singapore. More information about Lightwire can be found at [www.Lightwire.com](http://www.Lightwire.com).

### **About Chartered**

Chartered Semiconductor Manufacturing Ltd. (Nasdaq: CHRT, SGX-ST: CHARTERED), one of the world's top dedicated semiconductor foundries, offers leading-edge technologies down to 65 nanometer (nm), enabling today's system-on-chip designs. The company further serves the needs of customers through its collaborative, joint development approach on a technology roadmap that extends to 32nm. Chartered's strategy is based on open and comprehensive design enablement solutions, manufacturing enhancement methodologies, and a commitment to flexible sourcing. In Singapore, the company operates a 300mm fabrication facility and four 200mm facilities. Information about Chartered can be found at [www.charteredsemi.com](http://www.charteredsemi.com).

### **About Institute of Microelectronics (IME)**

The Institute of Microelectronics (IME) is a research institute of the Agency for Science, Technology and Research (A\*STAR) in Singapore. 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.  
(website: [www.ime.a-star.edu.sg](http://www.ime.a-star.edu.sg))

### **About Exploit Technologies Pte Ltd**

Exploit Technologies is the marketing and commercialization arm of the Agency for Science, Technology and Research (A\*STAR). Its charter is to identify, protect and exploit promising intellectual property (IP) created by A\*STAR's research institutes. This includes facilitating the IP management process (ie the protection of inventions through patents and copyrights, etc), analyzing the strength of our IP and the market that they could serve, and working with companies to commercialize the technologies. For more information, please visit <http://www.exploit-tech.com>.

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