



Press Release

IME and Physical Logic to Partner on MEMS Accelerometer Device for Biomedical Applications

R&D collaboration to develop a highly sensitive and reliable biomedical device for the monitoring of heart conditions

Singapore, 9 November 2006 – The Institute of Microelectronics (IME), a research institute of the Agency for Science, Technology and Research (A*STAR), has entered into a Research Collaboration Agreement (RCA) with the Swiss-held Physical Logic – Bio Research Pte Ltd, to develop a Micro-Electro-Mechanical-System (MEMS) accelerometer device for biomedical applications.

The two parties will work together on the fabrication of a uniquely structured MEMS 3-D Accelerometer, for inclusion within the leads of cardiac devices, which are implanted into the human heart. The 3-D Accelerometer will continuously monitor and analyse the heart's wall motion and communicate this information to the cardiac device, which is either a Pacemaker or Implantable Cardioverter Defibrillator. Currently, available accelerometers do not provide the required high sensitivity, small size and low energy consumption characteristics required for a sensing device to be chronically implanted within the human body.

The aim of the collaboration between IME and Physical Logic – Bio Research Pte Ltd, is to demonstrate that such a MEMS accelerometer device can be designed and fabricated cost-effectively for mass production. The research is planned in two phases: (i) the development of relevant MEMS fabrication technologies and prototypes, and (ii) the assembly, packaging and application-specific integrated circuit (ASIC) design for control, communication and signal processing.

This collaboration builds on IME's expertise in MEMS fabrication process development, which includes the successful development of devices such as pressure sensors, accelerometer for automotive applications and silicon-based microphones. IME will spearhead the fabrication process while Physical Logic – Bio Research Pte Ltd contributes its expertise in MEMS device design for biomedical applications.

Professor Dim-Lee Kwong, Executive Director of IME commented, "Through this collaboration, the Swiss company will establish operations and bring their know-how and expertise to Singapore. This collaboration opens up the field of applying Si MEMS devices and technologies for novel biomedical applications. The two companies anticipate additional collaborative efforts in the months to come."

Mr Eran Ofek, Executive Director and CEO of Physical Logic – Bio Research Pte Ltd is excited about this new collaboration. "Physical Logic is a Swiss corporation, with global experience in the research and development of sensors for biomedical and Homeland Security applications," said Mr Ofek. "In our search for collaborators, Singapore was identified as the perfect country, providing the required assurance and security for our intellectual property protection, as well as a wealth of intellectual

capital, skilled experts and unique facilities required for our technology development process. Having operated in many other countries worldwide, we are very impressed with the Singapore government's support and attitude towards entrepreneurial companies who are developing state-of-the-art biomedical technologies. IME has been identified as the ideal partner for Physical Logic – Bio Research Pte Ltd. We have also found that A*STAR and EDB have brilliant economic incentive programmes, making it very attractive for companies to locate in Singapore. For all of these reasons, Physical Logic has decided to establish its new subsidiary in Singapore for biomedical technologies research and development. Furthermore, we are considering re-locating other projects and companies to Singapore in the future."

BACKGROUND INFORMATION

About Institute of Microelectronics (IME)

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 increase value-add to the electronics industry in Singapore by engaging in relevant R&D in strategic fields of microelectronics; supporting and partnering the electronics industry; and developing skilled R&D personnel. Its key research areas are in integrated circuits and systems; semiconductor process technologies and microsystems, modules and components.

(website: www.ime.a-star.edu.sg)

About Physical Logic – Bio Research Pte Ltd

Physical Logic – Bio Research Pte Ltd is a wholly-owned subsidiary of Physical Logic AG, a privately-held Swiss company. Physical Logic AG has many subsidiaries which are located in Switzerland, Israel, the United States and, now, Singapore. The companies specialize in the development of NEMS / MEMS sensors for Biomedical, Photonics and Homeland Security applications.

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