

**PRESS RELEASE**

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**Singapore's Institute of Microelectronics and GlucoSTATS System to develop key enabling technologies for Non-Invasive Blood Glucose Monitoring Device**

**Singapore, 13 May 2009** - The Institute of Microelectronics (IME), a research institute of the Agency for Science, Technology and Research (A\*STAR), and a biomedical start-up, GlucoStats System Pte Ltd (GS), today announced the signing of a research collaboration agreement to develop key enabling technologies for non-invasive glucose monitoring device.

Diabetes is a long-term illness characterised by abnormally high levels of blood glucose (sugar). Someone with diabetes is either producing too little insulin or is unable to respond well to the insulin produced. The World Health Organisation (WHO) estimates that more than 180 million people worldwide have diabetes and the number is likely to more than double by 2030. In Singapore, about 10% of our population or 300,000 people aged 18-69 have diabetes. Diabetes is one of the six top killer diseases in Singapore.

Monitoring of blood glucose levels is important for people with diabetes to determine if the treatment plan is working. A diabetic may need to monitor the blood glucose levels up to six times a day. Current blood glucose monitoring methods are invasive and would require blood samples to be drawn from the body. This could be painful, leave skin damage, pose a risk for infection and inconvenient. Thus, a non-invasive and an accurate self-blood glucose monitoring method would greatly improve the treatment and quality of life for people with diabetes.

Both IME and GS will develop enabling technologies and customised electronics for non-invasive glucose monitoring device based on wavelength absorption method. The device can be used to monitor blood glucose concentration non-invasively and

potentially functions as an artificial pancreas when combined with a suitable insulin delivery system.

Professor Dim-Lee Kwong, Executive Director of IME, is upbeat about focusing R&D effort on emerging markets and new opportunities for the microelectronics industry. "We are pleased to partner with an innovative home-grown company like GS to develop a non-invasive glucose monitoring device. This is an excellent opportunity to demonstrate how technology can improve healthcare, particularly for diabetes treatment. Over the years, IME has developed capabilities in design of sensors, low power low voltage sensor signal conditioning and wireless circuits to enable novel biomedical technologies and applications. Recently, a single chip wireless electrocardiogram (ECG) monitoring device was successfully demonstrated at the recent 3<sup>rd</sup> International Convention on Rehabilitation Engineering & Assistive Technology (*i-CREATE* 2009).

Said Dr Ting Choon Meng, Chairman & CEO of GlucoSTATS, "Very often in developing new technologies, we also create new problems or give rise to other problems. As a result, we have to develop "peripheral technologies" to circumvent some of the problems which could be potential show-stoppers. Partnering with IME to overcome some of the key technical hurdles will bring us closer to realise our goal of developing a total non-invasive blood glucose monitoring solution. Our earlier partnership through HealthSTATS International Pte Ltd has given me the confidence that our partnership will be yet another success. With IME's core competencies and our patented core technologies, I strongly believe our collaboration will enable us to make quantum leap towards commercialisation of the final product. This is a perfect example of value creation by leveraging on each other's expertise and know-how."

This project is supported under SPRING Singapore's Technology Innovation Programme which was launched in 2006 to encourage SMEs to tap on technology innovation for sustained competitiveness and growth. To-date, some 500 projects totalling over \$100 million in grants have been supported.

Mr Victor Tay, SPRING's Director for Services and Biomedicals said, "SPRING has been actively nurturing enterprises to grow their innovation capacity. We've been helping to link SMEs up with the technical expertise in the various research institutes. It is hence heartening to see the strategic collaboration between GlucoSTATS and IME

taking shape well. By leveraging on research institutes' expertise, our SMEs will be able to better position themselves to gain from the opportunities in new markets that come about from changing global trends."

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**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 the Agency for Science, Technology and Research (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 GlucoSTATS System Pte Ltd - GS ([www.glucostats.com.sg](http://www.glucostats.com.sg))**

Glucostat System is a Singapore start-up medical device company that is developing a revolutionary glucose-monitoring device for the diabetes market. The monitoring device uses infrared light technology with patent-filed innovative features to enable accurate, real-time, non-invasive blood glucose monitoring. The company was founded in 2000 as a subsidiary of HealthSTATS International and subsequently spun off as a private limited company by 2004. It has already developed its first-generation desktop prototype and proceeded to perform clinical correlation with Oral Glucose Tolerance Tests (OGTT) on test subjects. The research team is currently developing the second-generation prototypes for more extensive clinical evaluation.

**About SPRING Singapore – SPRING ([www.spring.gov.sg](http://www.spring.gov.sg))**

SPRING Singapore is the enterprise development agency for growing innovative companies and fostering a competitive SME (Small and Medium Enterprises) sector. We work with partners to help enterprises in financing, capabilities and management development, technology and innovation, and access to markets. As the national standards and accreditation body, SPRING also develops and promotes internationally-recognised standards and quality assurance to enhance competitiveness and facilitate trade.

For enquiries, please contact:

Charles Lee

Publicity

Institute of Microelectronics

DID: +65-6770 5318

Email: leewm@ime.a-star.edu.sg

Dr Ting Choon Meng

Chairman & CEO

Glucostat System Pte Ltd

DID: +65-6858 3248

Email: cmting@healthstats.com.sg

Liu Xiangjun

Corporate Communications

SPRING Singapore

DID: +65-6279 3344

Email: liu\_xiangjun@spring.gov.sg