

PRESS RELEASE

A*STAR INSTITUTE OF MICROELECTRONICS AND STANFORD UNIVERSITY TO CO-DEVELOP NANOELECTROMECHANICAL RELAY TECHNOLOGY FOR ULTRA-LOW POWER APPLICATIONS

Singapore, 29 November 2010 – The Institute of Microelectronics (IME), a research institute of the Agency for Science, Technology and Research (A*STAR), today announced a collaborative partnership with Stanford University in USA to develop nanoelectromechanical (NEM) relay technology to enable ultra-low power computation. NEMS-based integrated circuits are ideal for a wide range of emerging green electronics solutions as they eliminate leakage power, one of the leading sources of power consumption in today's scaled devices.

NEMS, as the name implies, is made up of mechanical and electronic properties, and is touted the next frontier of the semiconductor industry's continuous miniaturization exercise. NEMS components offer near ideal device performances of multi-functionality, ultra-low power consumption and operational ruggedness.

The project will be jointly led by Dr Navab Singh, Principal Investigator of the Nano-Electronics Programme at IME, and Professor H.S. Philip Wong, Professor Roger Howe, and Professor Subhasish Mitra from Stanford University.

“Not only do the NEMS devices allow much greater integration density to enable even smaller form factor to be attained, these devices are also suitable for use in robust electronic systems, given their high tolerance to harsh operating environments,” said Dr Singh. “This project extends and strengthens our R&D partnership with Stanford University.”

On the joint partnership, Professor Wong said, “Our collaboration will leverage on IME's established CMOS platform and state-of-the-art clean room infrastructure to develop a practical and robust process flow for NEMS device fabrication. The success of a CMOS-compatible process flow will drive down the production costs of these state-of-the-art NEMS devices to accelerate other emerging applications in electronics, chemistry and biology, not just ultra-low power computation.”

Professor Dim-Lee Kwong, Executive Director of IME, remarked, “Consumers' insatiable appetite for multifunctional intelligent systems will propel the development of NEMS technology. We can expect NEMS technology to play a key role in the world-wide effort to produce environmentally-oriented solutions that will directly impact our lifestyles.”

About the Institute of Microelectronics (IME)

The Institute of Microelectronics (IME) is a research institute of the Science and Engineering Research Council 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 and medical devices, MEMS, nanoelectronics, and photonics. For more information, visit IME on the Internet: <http://www.ime.a-star.edu.sg>.

About the Agency for Science, Technology and Research (A*STAR)

The Agency for Science, Technology and Research (A*STAR) is the lead agency for fostering world-class scientific research and talent for a vibrant knowledge-based and innovation-driven Singapore. A*STAR oversees 14 biomedical sciences, and physical sciences and engineering research institutes, and seven consortia & centre, which are located in Biopolis and Fusionopolis, as well as their immediate vicinity.

A*STAR supports Singapore's key economic clusters by providing intellectual, human and industrial capital to its partners in industry. It also supports extramural research in the universities, hospitals, research centres, and with other local and international partners.

For more information about A*STAR, please visit www.a-star.edu.sg.

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