

PRESS RELEASE

A*STAR IME LEADS NEW COPPER-WIRE BONDING CONSORTIUM IN ADVANCING INDUSTRY PERFORMANCE AND EXPERTISE

SINGAPORE, 8 November 2010 – The Institute of Microelectronics (IME), a research institute of the Agency for Science, Technology and Research (A*STAR), has announced the launch of the Copper Wire (Cu-Wire) Bonding Consortium. The consortium will tackle existing Cu-Wire bonding issues of quality and reliability, and improve existing measurement systems. This joint effort will be spearheaded by IME in collaboration with multinational companies including ASM Technology Singapore, Freescale Semiconductor, GLOBALFOUNDRIES, Infineon Technologies Asia Pacific, UNISEM and Atotech S.E.A.

Copper wire bonding has emerged as an important alternative in the semiconductor supply chain as compared to traditional gold wire as it is cheaper and has better material properties. In addition, conventional techniques are presently unable to adequately measure wire bonding stress, which should ideally be kept low to reduce chip damage during wire bonding.

Through this initiative, IME will fill the gap in current techniques by developing micro-sensor based methodology to measure the wire bonding stress and perform reliability characterisation of wire bonds. These novel sensors will allow the measuring of the stress beneath the wire bonding pad, catalysing the investigation of potential wire bond damage, and identifying a reliable bonding process for copper wire, including bond pad structures and metallisation. Further, the consortium will also cover corrosion study and bond degradation study related to copper wire bonding in harsh environments.

“IME has always worked closely with our partners in the semiconductor industry to understand the latest market needs and requirements,” said Mr. Pinjala Damaruganath, Deputy Lab Director of IME’s Microsystems, Modules and Components (MMC) Lab. “This consortium will further strengthen our relationships by bestowing its members with the competitive advantage of possessing the most advanced knowledge in copper wire bonding and package reliability characterisation, facilitating the adoption or fine tuning of such techniques.”

“GLOBALFOUNDRIES supports the Copper Wire Bonding Consortium in its efforts to develop an in-depth understanding of the impact of Copper Wire Bonding on Chip Package Interaction and its failure mechanisms,” Dr. Sanford Chu, Vice President, for Technology Development and Research at GLOBALFOUNDRIES in Singapore commented. “The competitive pricing of Cu compared to the standard practice of using Au is one of the main motivations to enable this material to assist our customers to further optimise the cost of packaging without compromising on quality.”

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 Silicon 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, please visit www.a-star.edu.sg

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