

MEDIA RELEASE

A*STAR'S INSTITUTE OF MICROELECTRONICS AND HITACHI CHEMICAL TO DEVELOP 3D IC PACKAGING MATERIAL TECHNOLOGIES

1. **Singapore 13 September, 2012**— A*STAR's Institute of Microelectronics (IME), and Hitachi Chemical Co., Ltd (Hitachi Chemical) in Japan, will be collaborating on a joint research of high performance material technologies to support thin wafer processing for 3 dimensional integrated circuit (3D IC) packaging.
2. Through this research collaboration, Hitachi Chemical will leverage IME's advanced 3D IC process capabilities to enhance material technologies that can support the demanding requirements of thin wafer processing and enable the industry to move to high-volume production of 3D ICs. This innovative research will improve productivity of 3D ICs, to be used in mobile handsets, computers, gaming platforms, wireless and wired communication equipment, cameras, automobiles and aerospace applications.
3. "Our expertise, experience and infrastructure in 2.5D/3D IC process-integration, thin-wafer-handling, and assembly flow provide a compelling value proposition for advanced materials manufacturers to test their products and overcome key technical barriers in the commercialization of 2.5D/3D IC technology," said Prof. Dim-Lee Kwong, Executive Director of IME. "IME is in a strong position to enable materials development that is increasingly critical to ramping advanced packaging technologies to high volume manufacturing."
4. "IME has strong background technologies of microelectronics, especially in IC packaging technologies, and Hitachi Chemical has many kinds of material for the electronics. I believe this joint research between IME and Hitachi Chemical will

contribute greatly to the progress in advanced 3D IC packaging technologies.” said Shun-ichiro Uchimura, Vice President and CTO of Hitachi Chemical.

About 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 about IME, please visit <http://www.ime.a-star.edu.sg>.

About 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 centers, and with other local and international partners. For more information about A*STAR, please visit <http://www.a-star.edu.sg>.

About Hitachi Chemical Co., Ltd

Hitachi Chemical Co., Ltd. (Head Office: Tokyo; President & CEO: Kazuyuki Tanaka; Capital: 15.5 billion yen) is a chemical company headquartered in Tokyo, Japan with 16,713 employees. The Group reported consolidated net sales of 473,069 million yen for its fiscal year 2011 ended March 31, 2012. Hitachi Chemical offers materials and

components under functional materials segment and advanced components and systems segment and is proud to achieve No.1 market share in many products.

The Company defines a mid- and long-term research-and-development strategy, and is concentrating on research and development of next-generation high performance and highly efficient material. Strive for research and development adapting the broad fundamental technology of its company, and also by joint research with cooperation with the Hitachi group, the participation in a consortium, research commission in the other company, the introduction of technological know-hows from the other company, an alliance, and a university, etc., Without persisting only in its own technology, the technology which was excellent in the exterior is also introduced positively, and the efficiency improvement and speedup of industrialization of research and development are aimed at. For more information about Hitachi Chemical, please visit <http://www.hitachi-chem.co.jp/english/index.html>

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