

MEDIA RELEASE

A*STAR'S INSTITUTE OF MICROELECTRONICS LAUNCHES 2.5D SILICON INTERPOSER MULTI-PROJECT WAFER OFFERING ON 300MM TECHNOLOGY PLATFORM

1. **SINGAPORE, 19 December, 2012** -- The Institute of Microelectronics (IME), a research institute of the Agency for Science, Technology and Research (A*STAR) in Singapore, announced the launch of the world's first 2.5D Through-Silicon-Interposer (TSI) multi-project wafer (MPW) service, aimed at providing a cost-effective platform to do research and development prototyping and proof-of-concept in 2.5D TSI technology.
2. Supported by IME's state-of-the-art 3D Through-Silicon-Via (TSV) engineering line, the MPW service is a one-stop solution for 2.5D TSI R&D prototyping that comes with comprehensive design kits, via and redistribution/bumping technology, as well as packaging and assembly capabilities. By enabling the heterogeneous integration of different functionalities including logic, memory, analog/RF, photonics, micro-electromechanical systems, devices with more functionality, smaller form-factor and less power consumption can now be realized.
3. The service will enable the academic, research and industrial community to develop 2.5D research test vehicles with leading-edge designs, materials and processes so that they can be applied to products such as smart phones, tablets, networking and sensors and bio-medical applications.

4. Robert Patti, Chief Technology Officer of Tezaron Semiconductor, a leader in 3D IC who teamed up with IME to develop 2.5D silicon interposer in 2011¹ says "Tezaron is very excited to work with a research leader like IME on this technology. Early work from the IME 300mm interposer line has already provided detailed insight into the performance benefits offered by 2.5D interposers. IME's 2.5D TSI MPW offering is an extremely important step forward for the semiconductor industry and we look forward to participating in it."

5. "Our 2.5D TSI MPW offers proven expertise and infrastructure that address the technology requirements of new applications and markets," says Prof. Dim-Lee Kwong, Executive Director of IME. "Through our MPW platform, our partners will be able to overcome cost and technical hurdles and significantly reduce development time and cost as they transit to mass production."

6. The IME 2.5D TSI MPW platform currently includes the following modules:

- Leveraging industry standard Electronic Design Automation (EDA) tools to perform 2.5D TSI design, extraction and verification;
- TSV with critical dimension (CD), e.g. 10µm to 50µm;
- Chip-to-wafer (C2W) interconnects with micro-bump;
- Front and backside redistribution layers (RDL) with thin wafer handling (for thickness down to 100µm and below) with bonding and debonding;
- Under-bump metallurgy (UBM); and
- Chip-to-wafer stacking.

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

¹ "A*STAR INSTITUTE OF MICROELECTRONICS AND TEZZARON TEAM UP TO DEVELOP 2.5D/3D THROUGH-SILICON INTERPOSER TECHNOLOGY" <https://www.ime.a-star.edu.sg/files/news/201203032019241150.pdf>

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

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