Community Member Monthly Highlights — June – June 28, 2023

3D InCites Community Member Monthly Highlights — June

From Different Dimensions
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Our 3D InCites Community Members had an abundant amount of news to share this month, so we thought we should do a quick recap in our June edition of monthly highlights. If you have news to share, please don't forget to share it with your 3D InCites team!

ASE announced its latest Fan-Out-Chip-on-Substrate-Bridge (FOCoS-Bridge) technology breakthrough, achieved through qualifying a large 70mm x 78mm package that incorporates two ASICs and eight High Bandwidth Memory (HBM) devices connected through eight silicon bridges. This large package features two identical 47mm x 31mm FOCoS-Bridge fan-out structures integrated side-by-side, with each comprising an ASIC with four HBMs and four silicon bridges, effectively integrating nine components in each 47mm x 31mm fan-out package, which is almost 2X the silicon reticle size.
FormFactor introduced the FRT MicroProf® PT, a new semiconductor metrology and inspection tool for rectangular panels up to 600mm containing 4-5X more dies compared to a 300mm wafer. With full automation and hybrid metrology capabilities, a single system can perform multiple types of 3D measurements and defect detection on the large format panels, supporting the heterogenous integration of chiplets used in advanced package technologies such as fan-out panel-level packaging (FoPLP).
Siemens Digital Industries Software announced it has collaborated with leading Outsourced Assembly and Test (OSAT) company Siliconware Precision Industries Co., Ltd. (SPIL) to develop and implement a new integrated circuit (IC) package assembly planning and 3D layout vs. schematic (LVS) assembly verification workflow for SPIL's fan-out family of advanced IC packaging technologies. SPIL plans to deploy this differentiated capability across its 2.5D and fan-out package family technologies.
StratEdge Corporation showcased its thermally-efficient line of post-fired and molded ceramic semiconductor packages at the International Microwave Symposium (IMS), in San Diego, CA, June 13-15. StratEdge packages operate across the spectrum from DC to 63+ GHz, while efficiently dissipating heat from compound semiconductor devices such as gallium nitride (GaN), gallium arsenide (GaAs), and silicon carbide (SiC). These clever packages enable compound semiconductor devices to meet the stringent requirements in applications such as defense, satellite, test and measurement, automotive, and down-hole.
Amkor Technology says it's innovating advanced packaging to enable the car of the future. Behind the wheel, consumers want an immersive and interactive in-car experience that is both entertaining and informative. To meet the demand for this digital control center, Amkor continues to develop advanced infotainment and telematics package solutions that offer seamless connectivity, intuitive interfaces, and personalized experiences. These solutions include flip chip, system in package, MEMS, and sensors that enable advanced features like in-panel and heads-up displays, navigation systems, and vehicle-to-everything systems.
SEMI released its quarterly *300mm Fab Outlook Report to 2026* highlighting global 300mm fab equipment spending for front-end facilities next year is expected to begin a growth streak to a US$119 billion record high in 2026 following a decline in 2023. Sem says trong demand for high-performance

computing, automotive applications, and improved demand for memory will fuel double-digit spending in equipment investments over the three-year period.

Nordson TEST & INSPECTION will highlight the new Quadra 7 Pro Manual X-ray Inspection (MXI) System and demonstrate the WaferSense® Auto Teaching System™ (ATS2) at SEMICON West. The Quadra 7 Pro MXI system sets a new standard for 3D/2D manual inspection with a higher resolution for back-end semiconductor applications. Equipped with the revolutionary Onyx® detector technology, it delivers exceptional image clarity and reduced noise levels, elevating the inspection experience to unprecedented levels of accuracy and efficiency.

ERS electronic developed the first-of-its-kind equipment for the metrology and analysis of warped wafers. Thanks to its advanced optical scanning methodology, *Wave3000* can accurately measure wafer deformities in specific handling positions. It provides a comprehensive and precise analysis of wafer warpage, which is crucial for ensuring the quality of advanced packaging devices.

MZ Technologies announced that an internationally respected System/ASIC company is adopting MZ Technologies' GENIO™ 1.7 fully-integrated EDA co-design tool. The company adopted a full-suite license and has targeted a next-generation global semiconductor product family based on heterogeneous advanced technology system-in-package (SIP.) The licensing agreement marks a major milestone for MZ Technologies, representing its initial entry into the broad Asian market.

Brewer Science announced that it has earned Intel's EPIC Distinguished Supplier Award. Through its dedication to Excellence, Partnership, Inclusion, and Continuous (EPIC) quality improvement, Brewer Science has achieved a level of performance that consistently exceeds Intel's expectations.

Lam Research introduced Coronus DX, the industry's first bevel deposition solution optimized to address key manufacturing challenges in next-generation logic, 3D NAND, and advanced packaging applications. In a single step, Coronus DX deposits a proprietary layer of protective film on both sides of the wafer edge that helps prevent defects and damage that can often occur during advanced semiconductor manufacturing. This powerful protection increases yield and enables chipmakers to implement new leading-edge processes for the production of next-generation chips.

Brewer Science announced the latest breakthrough in high-temperature gap filling materials – OptiStack® SOC450 material, enabling advanced node processes by providing unparalleled performance at extreme temperatures. With OptiStack® SOC450 material EUV processes will no longer have to sacrifice temperature stability for superior gap filling and planarization.

Lam Research announced the launch of *Semiverse™ Solutions* business unit led by Corporate Vice President David Fried. Semiverse Solutions leverage Lam's significant expertise in the areas of software development, simulation and modeling, data systems and advanced analytics. The organization will focus on delivering breakthrough solutions and services to enable a virtual fabrication environment for the semiconductor industry. The Semiverse Solutions portfolio is comprised of advanced software platforms to solve process modeling, design automation, and integration challenges. Also included are solutions to enable advanced plasma, fluid, electromagnetic and particle simulations.

FormFactor earned the exclusive Intel EPIC Program Outstanding Supplier Award for 2023. This award recognizes the absolute top performers in the Intel supply chain for their dedication to continuous quality improvement, performance, collaboration, and inclusion over the past year. The Intel EPIC Outstanding Supplier Award recognizes the highest level of achievement in the Intel global supply chain and is an ongoing realization of continuous improvement within the high-performing Intel supplier ecosystem. Of the thousands of Intel suppliers around the world, only a few hundred qualify to participate in the EPIC Supplier Program. In 2023, only six suppliers across the Intel supply chain earned an Intel Outstanding Supplier Award, making them truly the best of the best.

EV Group announced that it has once again been voted by customers as one of the 10 BEST Focused Suppliers of Chip Making Equipment and one of the 2023 THE BEST Suppliers of Fab Equipment in the 2023 TechInsights Customer Satisfaction Survey, increasing its score in both award segments compared to last year's listings as well as earning a 5 Star rating in both segments for the second time in a row. EVG also received a RANKED 1st in Specialty Fab Equipment award again this year, marking the 11th year in a row that it has received all three customer satisfaction awards.

Nordson Electronics Solutions plans to demonstrate its latest solutions for semiconductor packaging and electronics manufacturing, with partner AMT at the SEMICON China tradeshow, booth E4617. The popular ASYMTEK Vantage® fluid dispensing system, Nordson's most advanced dispensing platform, is designed for high-end semiconductor packaging and assembly. Fast and accurate, the Vantage, when configured with dual IntelliJet valves, can jet into gaps less than 200 um, and up to 90,000 dots per hour.

The newest ASYMTEK Forte® fluid dispensing system offers exceptional dispensing productivity and accuracy for high-volume consumer electronics, flexible circuit, MEMs, and electromechanical assembly applications.
Veeco announced that it has received an order from Quantum Foundry Copenhagen P/S, based in Copenhagen, Denmark for multiple GEN20® Molecular Beam Epitaxy (MBE) Systems. Quantum Foundry is scheduled to receive the multi-process module system next year. The GEN20-Q MBE system, a purpose-built GEN20 MBE reactor designed for the growth of quantum technologies, was selected to enable the development of fault-tolerant quantum computing hardware to support life science and biological applications. Veeco's GEN20-Q MBE system, built on the production-prove GEN20 platform, utilizes a tailored design to support research and production of multiple quantum computing techniques including superconductive materials, spintronics, high-speed optical modulation, and trapped-ion.

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