



MKS Instruments introduces industry leading integrated approach to creating solutions for complex package substrate manufacturing requirements and roadmaps

Unveils significant investment in its Yokohama TechCenter (YTC) during the grand expansion ceremony

Yokohama, Japan, March 14, 2023: MKS Instruments, Inc. (NASDAQ: MKSI) (“MKS”), a global provider of technologies that transform our world, today unveiled a significant investment in its Yokohama Technical Center (“YTC”) in Japan, which will enable an industry leading integrated approach to creating solutions for complex package substrate manufacturing, satisfying current requirements as well as those needed for future roadmaps.

The YTC is an integral part of the most comprehensive portfolio of global TechCenters in the industry. These TechCenters combine unique analytical capabilities, state of the art full scale equipment, and highly proficient expert teams to conduct extensive research and development, providing world-class service to more than 8,000 customers around the globe. Working closely with customers and industry partners helps anticipate the industry’s future requirements, which in turn enables MKS to help customers stay ahead in a rapidly changing environment.

The recent investment in the YTC delivers the latest capabilities for the production of next generation package substrates. Offering a unique combination, the YTC utilizes dedicated lasers, optics, and motion systems for high precision, high-speed via formation in ABF build-up laminates, in combination with the latest process chemistry and equipment for desmear and electroless copper metallization. Using the latest Equalized Curtain Flow (ECF) plating tool, the YTC is able to support customers in their yield optimization and next generation process development for advanced packaging applications.

During the YTC Expansion Ceremony, Dr. John T.C. Lee, President and CEO of MKS Instruments, escorted visitors around the state-of-the-art facility showcasing the two new systems, the ESI Geode™ A CO2 laser system and the Atotech G-Plate® plating tool, as well as demonstrating the Vitrocoat® process for Plating on Glass (PoG).

- ESI Geode™ A CO2 laser system for high precision and high-speed ABF build-up laminate processing



- Atotech G-Plate® vertical desmear and electroless HVM plating tool for next generation high-end package substrates



“We are highly committed to driving and leading technology development within our industries,” Dr. Lee said. “With these key installations, we are accelerating time to market through our combined capabilities, which allow us to view problems holistically

and design solutions faster. This helps us to drive innovation for next generation electronic devices and offer customers and OEMs quicker development cycles for new products and materials enabling high-end SAP technology requiring $\leq 5/5\mu\text{m}$ lines and spaces. Our unique portfolio of MKS combined services at our Yokohama technical center allows us to reduce the cycle time for a typical ABF sample from three months or more to less than one month.”

MKS Instruments’ Optimize the InterconnectSM offering drives MKS’ focus on next-generation advanced PCB and package substrate development. The investment in the YTC will further solidify MKS as a leader in the next frontier for miniaturization and complexity by enabling increasingly smaller feature sizes and offering new solutions by combining ESI laser drilling technologies with Atotech chemistry and plating equipment.

About MKS Instruments

MKS Instruments enables technologies that transform our world. We deliver foundational technology solutions to leading edge semiconductor manufacturing, electronics and packaging, and specialty industrial applications. We apply our broad science and engineering capabilities to create instruments, subsystems, systems, process control solutions and specialty chemicals technology that improve process performance, optimize productivity and enable unique innovations for many of the world’s leading technology and industrial companies. Our solutions are critical to addressing the challenges of miniaturization and complexity in advanced device manufacturing by enabling increased power, speed, feature enhancement, and optimized connectivity. Our solutions are also critical to addressing ever-increasing performance requirements across a wide array of specialty industrial applications. Additional information can be found at www.mks.com.

About ESI

ESI is a brand within the Photonics Solutions Division of MKS Instruments. ESI systems deliver market-leading solutions for Flexible PCB laser processing, high-speed MLCC testing, and CO₂-laser-based systems for HDI PCB and IC substrate manufacturing.

ESI solutions help manufacturers optimize production of the materials, components and systems that are an integral part of the electronic devices in use today. They deliver greater flexibility and a higher degree of processing control, enabling customers to incorporate a wider range of materials into their production processes. The result is higher production quality, increased throughput and higher yields at a lower total cost of ownership. For more information, visit www.esi.com, www.laserprocessing.cn.

About Atotech

Atotech, a brand within the Materials Solutions Division of MKS Instruments, develops leading process and manufacturing technologies for advanced surface modification, electroless and electrolytic plating, and surface finishing. Applying a comprehensive systems-and-solutions approach, the Atotech portfolio includes chemistry, equipment, software, and services for innovative and high-technology applications in a wide variety of end-markets. With its innovative strength and industry-leading global TechCenter network, MKS delivers pioneering solutions through its Atotech brand – combined with unparalleled on-site support for customers worldwide. For more information, visit atotech.com.

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