

3M and Yushin Precision Equipment Announce Agreement on Temporary Wafer Bonding Technology to Enable 3-D Semiconductors

3M, a leading supplier of advanced materials to the semiconductor industry, and Yushin Precision Equipment Co., Ltd., of Japan, a leading supplier of automation and packaging equipment, today announced an agreement to allow Yushin Precision Equipment to manufacture and sell equipment for temporary bonding of ultrathin wafers required for 3-D packaging. As part of this agreement, Yushin Precision Equipment becomes a 3M Authorized Equipment Supplier for equipment that is configured to use 3M Wafer Support System (WSS) materials including 3M's Liquid UV-Curable Adhesive and Light-To-Heat Conversion coating. Under the agreement both companies will continue to work closely to address customer demands for high-performance process solutions that support high-volume manufacturing with a competitive cost of ownership.

The 3M Wafer Support System includes equipment and materials that allow temporary wafer bonding to support wafer thinning and subsequent processing of ultra thin wafers for 3D packaging. 3M's innovative use of a UV curable adhesive for wafer bonding to glass carriers provides robust wafer support throughout wafer grinding and subsequent multiple high-temperature processing cycles. After processing, 3M's unique Light-To-Heat Conversion layer allows low stress, room temperature debonding of the thinned wafer directly to a tape carrier. The thinned wafer is supported throughout the entire process thereby minimizing warpage, stress and process complexity. As compared to other processes that expose the thinned wafer to high-temperature and stress or other processes that use solvents to release the thinned wafer, 3M's process and materials solutions enables high-volume manufacturing at multiple semiconductor sites worldwide today.

"The agreement ensures our joint customers access to Yushin supplied equipment that was previously sold under the 3M™ brand and builds on the successful relationship the two companies have had over several years," said Mike Bowman, marketing development manager for 3M Electronics Markets Materials Division. "Customers can now simplify the equipment sales and support process by purchasing the equipment directly from any of 3M's three Authorized WSS Equipment Suppliers, which includes Yushin Precision Equipment. This enables 3M to focus on its core strengths in materials development to address customer requirements for advanced materials for 3-D semiconductor manufacturing."

Since 2004 Yushin Precision Equipment has worked with 3M to design and develop equipment for temporary bonding of ultrathin wafers to optimize 3M's materials. This joint development has resulted in multiple systems that have been placed worldwide.

"Our strong relationship with 3M allows both companies to support customer requirements for equipment and materials for advanced 3-D packaging solutions on a global scale," said Satoshi Kimura, executive managing director at Yushin Precision Equipment. "Together we are able to offer world-class precision material handling and packaging experience and the best process materials."

About Yushin Precision Equipment

With a focus on take-out robots for plastic injection molding machines, Yushin Precision Equipment develops, manufactures and sells plant automation and productivity-boosting systems and equipment. Responding to the specialized needs of our customers, Yushin produces various customized automatic equipment, of all kinds, including semiconductor related equipment. Yushin Precision Equipment's circle of technology and trust has expanded globally to 31 locations in 15 countries, with sales of over Y19 billion and more than 500 employees. For more information, visit www.yushin.com.

About 3M

A recognized leader in research and development, 3M produces thousands of innovative products for dozens of diverse markets. 3M's core strength is applying its more than 40 distinct technology platforms – often in combination – to a wide array of customer needs. With \$23 billion in sales, 3M employs 75,000 people worldwide and has operations in more than 65 countries. For more information, visit www.3M.com/wss

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