



## **PRESS RELEASE:**

### **Orbotech Announces Collaboration between SPTS Technologies and Fraunhofer IZM to Advance Process Development of Wafer Level Packaging of Microelectronic Devices**

*Fraunhofer IZM Selects SPTS' DRIE and Low Temperature CVD to Develop Next Generation Manufacturing Techniques*

YAVNE, ISRAEL, January 15, 2015 | ORBOTECH LTD. (NASDAQ: ORBK) today announced that SPTS Technologies, an Orbotech company and a supplier of advanced wafer processing solutions for the global semiconductor industry and related markets, is collaborating with Fraunhofer IZM, an international institute specializing in applied and industrial contract research, on next generation wafer level packaging of microelectronic devices.

"To meet the technical requirements of future microelectronic products, 3D-IC architectures using through silicon vias (TSVs) are being employed to overcome scaling limits while delivering better device performance," stated Kevin Crofton, President of SPTS Technologies and Corporate VP at Orbotech. "SPTS has over 300 DRIE modules being used for advanced packaging applications around the world. Together with Fraunhofer IZM, we aim to develop the techniques needed for cost-effective volume manufacturing of 2.5D and 3D-IC devices."

For the joint development project, Fraunhofer IZM is using SPTS' Rapier process module to etch a range of silicon features, such as deep cavities and tapered or vertical TSVs with high aspect ratios. Leveraging its multi-process capability, the Rapier is also used for other 3D processes, including blanket Si etching for via reveal, post grind stress relief and general wafer thinning. The Rapier carries SPTS' endpoint detection (EPD) systems: Claritas™ for etches to stop layers and low exposed areas, and ReVia™, the industry's only in-situ EPD for via reveal etching, ensuring repeatable and accurate exposure of TSV tips from the wafer back-side, at via densities as low as 0.01%. With the APM CVD chamber, Fraunhofer IZM is benefiting from SPTS' ability to deposit PECVD SiN/SiO film stacks at <190°C with tunable stress, low electrical leakage and excellent diffusion barrier performance. Both technologies are on the single Versalis fxP platform, saving capex and valuable floor space. The ability to run multiple process recipes inside the same system gives Fraunhofer IZM significant flexibility: a valuable resource when working with clients from diverse sectors including automotive, healthcare and industrial electronics.

Martin Wilke, the expert in plasma etching at Fraunhofer IZM, commented, "Our researchers and customers expect us to use the latest state-of-the-art equipment. The SPTS Versalis fxP system was selected for our cleanroom facility in Berlin as it combines industry leading DRIE and CVD modules on a single platform, with the option to add additional modules as our capacity demands increase. The multi-technology Versalis fxP allowed us to reduce initial capital outlay and therefore cost of ownership, within a small footprint."

Crofton added, "Fraunhofer IZM is a leading institute with a key competence in wafer level packaging and system integration. By working with renowned R&D institutes who specialize in industry-oriented applied research, we are able to provide our customers with production ready wafer processing solutions that give them competitive advantage and lower their cost of manufacture."

#### **About SPTS Technologies**

SPTS Technologies, an Orbotech company, designs, manufactures, sells, and supports etch, PVD, CVD and thermal wafer processing solutions for the MEMS, advanced packaging, LEDs, high speed RF on GaAs, and power management device markets. With manufacturing facilities in Newport, Wales, Allentown, Pennsylvania, and San Jose, California, the company operates across 19 countries in Europe, North America and Asia-Pacific. For more information about SPTS Technologies, please visit [www.spts.com](http://www.spts.com)

#### **About Orbotech Ltd.**

Orbotech Ltd. (NASDAQ:ORBK) is a global innovator of enabling technologies used in the manufacture of the world's most sophisticated consumer and industrial products throughout the electronics and adjacent industries. The Company is a leading provider of yield enhancement and production solutions for electronics reading, writing and connecting, used by manufacturers of printed circuit boards, flat panel displays, advanced packaging, micro-electro-mechanical systems and other electronic components. Today, virtually every electronic device is produced using Orbotech technology. For more information, visit <http://www.orbotech.com/>.

#### **Cautionary Statement Regarding Forward-Looking Statements**

Except for historical information, the matters discussed in this press release are forward-looking statements within the meaning of the U.S. Private Securities Litigation Reform Act of 1995. These statements relate to, among other things, future prospects, developments and business strategies and involve certain risks and uncertainties. The words "anticipate," "believe," "could," "will," "plan," "expect" and "would" and similar terms and phrases, including references to assumptions, have been used in this press release to identify forward-looking statements. These forward-looking statements are made based on management's expectations and beliefs concerning future events affecting Orbotech (which includes the Semi IC and Systems business) and are subject to uncertainties and factors relating to Orbotech's operations and business environment, all of which are difficult to predict and many of which are beyond the Company's control. Many factors could cause the actual results to differ materially from those projected including, without limitation, timing and extent of achieving the anticipated benefits of the acquisition of SPTS, the timing and impact of conversion of SPTS's financial statements from U.K. GAAP to U.S. GAAP and the Company's ability to convert SPTS to a U.S. GAAP reporting regime, including its internal control over financial reporting; Orbotech's ability to effectively integrate and operate SPTS's business, the timing, terms and success of any strategic or other transaction, cyclicalities in the industries in which the Company operates, the Company's production capacity, timing and occurrence of product acceptance (the Company defines 'bookings' as purchase arrangements with customers that are based on mutually agreed terms which, in some cases, may still be subject to completion of written documentation and may be changed or cancelled by the customer, often without penalty), fluctuations in product mix, worldwide economic conditions generally, especially in the industries in which the Company operates, the timing and strength of product and service offerings by the Company and each of its competitors, changes in business or pricing strategies, changes in the prevailing political and regulatory framework in which the relevant parties operate or in economic or technological trends or conditions, including currency fluctuations, inflation and consumer confidence, on a global, regional or national basis, the level of consumer demand for sophisticated devices such as smartphones, tablets and other electronic devices, the timing for a verdict in the ongoing appeal of the criminal matter and ongoing investigation in Korea (which may be in 2014 or early 2015), the final outcome and impact of this matter, including its impact on existing or future business opportunities in Korea and elsewhere, any civil actions related to the Korean matter brought by third parties, including the Company's customers, which may result

in monetary judgments or settlements, expenses associated with the Korean matter, ongoing or increased hostilities in Israel and other risks detailed in the Company's SEC reports, including the Company's Annual Report on Form 20-F for the year ended December 31, 2013, and subsequent SEC filings. The Company assumes no obligation to update the information in this press release to reflect new information, future events or otherwise, except as required by law.

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