

SCREEN Launch of New 150 WPH “RF³ⁱ” Immersion Coat-Develop Track includes Immersion Process Lithocluster in the Netherlands

Dainippon Screen Manufacturing. Co., Ltd. (Headquarters: Kyoto, Japan) Semiconductor Company (President: Takashige Suetake) to introduce a new “RF³ⁱ (R-F cube-eye)” immersion photolithography coat-develop track equipment at SEMICON Japan, December 2005, with 150 WPH volume manufacturing capability. Leveraging the company’s global cleaning equipment market leadership, the new RF³ⁱ track integrates wafer clean-and-dry technology to remove immersion-specific watermark defects.

In order to pursue further optimization of the semiconductor manufacturing process, Screen is collaborating with exposure equipment and materials manufacturers. Starting January 2006 the company’s RF³ⁱ system will be installed in-line at ASML’s facilities in Veldhoven (the Netherlands) with its TWINSCAN™ XT:1700i immersion exposure system establishing an environment for continued immersion process development and customer demonstrations. The in-line systems will be within ASML’s Veldhoven research and development site and will be supported by the necessary metrology equipment including an on-site KLA-Tencor 2365 defect inspection system.

Next generation circuit devices below 65 nanometer (one billionth of a meter) are being made possible with immersion exposure technology, which utilizes a liquid between the lens and wafer substrate. It has been clearly identified among semiconductor manufacturers that improving yield for the immersion lithography process is critical for acceptance into volume production. Based on the company’s existing 300 mm wafer substrate coat-develop “RF³ (R-F cube)” product, the RF³ⁱ system integrates new capabilities to support immersion process steps and improve manufacturing yield. The RF³ⁱ system has the configuration flexibility to support either immersion process development or volume manufacturing up to 150 WPH (wafers per hour) throughput.

Since November 2003, Screen and ASML initiated joint litho-cluster improvement projects of which included confirming 150 WPH linked in-line throughput performance as announced last year, July 2004. For the last nine (9) months the two companies have been cooperatively evaluating immersion lithography processes utilizing the existing RF³ track system installed in Veldhoven.

“CD uniformity results and the yield we have attained has confirmed for our customers we are clearly maintaining technology leadership with our major competitor despite their larger install-base,” indicated Kenji Kamei, Deputy General Manager, Technology Development Division, Dainippon Screen Mfg. Co., Ltd.

“Establishing a leading edge immersion lithocluster at our facilities in Veldhoven, in combination with metrology and defect inspection equipment and the support of Dainippon Screen, we will be able to bring immersion to maturity for volume production faster,” clarified Jan Smits, Senior Vice President Advanced Products at ASML.

The combined Lithocluster XT:1700i and RF³ⁱ is anticipated to be ready for customer demonstrations starting April 2006.

■ About Dainippon Screen

Dainippon Screen Manufacturing Co., Ltd was established in 1943 and is a top 10 supplier of semiconductor fabrication equipment. The company specializes in coat-develop track equipment, wafer cleaning systems, and next generation flash lamp anneal tools. All of the company's production sites are certified for ISO9001 as well as for ISO14001 Environmental Management System. Dainippon Screen is a public company quoted on the Tokyo Stock Exchange. Home page: <http://www.screen.co.jp/>

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RF³ⁱ (R-F cube-eye)

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