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**Dainippon Screen and SEMATECH Collaborate to Advance Techniques
For Achieving Ultra-shallow Junctions**
*Partnership Combines Strengths to Enable Steep and Ultra-shallow Junction Formation
For Sub 14 nm Semiconductor Manufacturing*

Kyoto, Japan – December 19, 2011 – Dainippon Screen Mfg. Co., Ltd. today announced that it has entered into a partnership to accelerate development and commercialization of advanced semiconductor doping technology with SEMATECH, a global consortium of the world's leading chip manufacturers. Screen and SEMATECH will collaborate on techniques for monolayer doping and activation methods that are compatible with ultra-shallow junctions for planar and non-planar device technologies (e.g., FinFETs, nanowires, memories) in silicon and non-silicon high mobility materials.

To achieve faster transistor speeds and lower power dissipation, device fabrication will require innovative solutions to minimize leakage resulting from process damage and electrostatic control. Ultra-shallow, abrupt, damage-free junctions with high active dopant concentrations are essential for better off-state leakage control in modern highly scaled nano-electronics. With the advent of non-planar device architectures and high mobility compound semiconductors, doping conformality and minimal lattice damage are increasingly important, and cooperative research efforts are needed to meet ITRS roadmap requirements. A promising defect-free and conformal doping alternative, monolayer doping, will be investigated, and developed for commercial use.

“This partnership with Screen is a key component of our overall strategy to develop critical infrastructure needed for major industry transitions. Innovative process technologies like monolayer doping are essential to enable transitions to non-planar and to non-silicon high mobility channels, while minimizing processing induced damage, cost and complexity,” said Dan Armbrust, president and CEO of SEMATECH. “We are excited to combine our materials and process technology strengths with Screen’s leading tool engineering strengths to bring innovative solutions for next generation device manufacturers.”

“We are very pleased to collaborate with SEMATECH and its leading-edge industry partners on advanced doping techniques for next generation devices,” said Tadahiro Suhara, President of the Semiconductor Equipment Company at Screen. “We believe that this alliance could be a key driver for improving annealing processes and address associated defect issues for manufacturers to continue scaling of CMOS devices.”

SEMATECH

For 20 years, SEMATECH® , the international consortium of leading semiconductor manufacturers, has set global direction, enabled flexible collaboration, and bridged strategic R&D to manufacturing. Today, we continue accelerating the next technology revolution with our nanoelectronics and emerging technology partners.

URL: www.sematech.org