

Tegal expands ProNova? ICP silicon drier reactor family with introduction of the ProNova2?(2)

I-Micronews

This week at SEMICON Japan, Tegal Corporation, (Nasdaq: TGAL) an innovator of specialized production solutions for the fabrication of advanced MEMS, power ICs and 3D ICs, will launch the newest member of its popular ProNova™ family of high-density inductively coupled plasma (ICP) reactors for the company's DRIE series wafer processing products. The ProNova2™ is targeted for fast-growing 200-mm MEMS and 3D IC applications. It was built to out-perform the etch rates of comparative tools and deliver industry-leading DRIE productivity and yield benefits. In addition to demonstrating sustained high etch rates, the new reactor offers a three-fold improvement in ion uniformity. For some applications, the higher uniformity enables a 40-plus percent improvement in etch selectivity. The ProNova2 also allows users to adjust selected etch parameters across the ICP reactor plasma and diffusion zones. This allows for better control of etch process performance across the wafer which boosts the silicon DRIE etch flexibility needed for some advanced applications.

The first ProNova2 tool has been installed in a Japanese development laboratory where it is meeting the performance expectations set by Tegal's France-based R&D team.

Porting established MEMS processes onto 200-mm tools and then improving on the baseline process results has been a key challenge for 200-mm MEMS fabrication. For silicon DRIE, these challenges include achieving higher etch rates, along with tighter control of tilt angles and etch profiles, and better etch depth uniformity across 200-mm wafers. The ProNova reactor family was developed to address all key market requirements identified by the 200-mm MEMS community which include Tegal's 3D IC Through Silicon Via (TSV) commercial partners. With an improved ICP reactor geometry and plasma source design, the ProNova products achieve superior etch depth uniformity and etch profiles, as well as better etch tilt angles across 200-mm wafers when compared to traditional ICP sources.

*"At Tegal, we remain focused on driving continuous product and technology improvement so that our customers have the best tools to address the evolving process requirements of advanced silicon DRIE applications like MEMS and 3D ICs," said **Nicolas Launay**, R&D Director at Tegal France. "The ProNova2 builds on the process improvements featured in our first ProNova reactor and offers customers further gains in productivity and yields. It is one of the most advanced silicon DRIE reactors on the market today."*

The ProNova2 is immediately available to ship on Tegal 110, 200, 3200 and 4200 DRIE wafer processing systems. It is also compatible as a retrofit with Tegal and AMMS DRIE systems already in the field. As with the first member of the ProNova

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family, the product supports Tegal's Super High Aspect Ratio Process (SHARP), which achieves etched feature aspect ratios of greater than 100:1 in production environments.

Tegal will showcase the new ProNova2 at SEMICON Japan 2010, Dec. 1-3 at the Makuhari Convention Center in Chiba, Japan. For more information, please visit Tegal at the Canon Marketing Japan booth, Number 3C-701, or visit our website at www.Tegal.com [1].

About Tegal Corporation

Tegal is an innovator of specialized production solutions for the fabrication of advanced MEMS, power ICs and 3D ICs found in products like smart phones, networking gear, solid-state lighting, and digital imaging. The Company's plasma etch and deposition tools enable sophisticated manufacturing techniques, such as 3D interconnect structures formed by intricate silicon etch, also known as Deep Reactive Ion Etching (DRIE). Tegal combines proven expertise with practical system strategies to deliver application-specific solutions that are robust and reliable, and deliver exceptional process quality and high yields at a lower overall cost of ownership. Headquartered in Petaluma, California, the company has more than 35 years of expertise and innovation in specialized technologies, over 100 patents, and has shipped and installed more than 1900 systems worldwide. Please visit us on the web at www.Tegal.com [1].

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