

PRESS RELEASE

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Fraunhofer ENAS extends cooperation with memsstar

Fraunhofer ENAS and memsstar Limited are partnering. In order to ensure the quality of the reactive ion etching processes in MEMS manufacturing and the throughput Fraunhofer ENAS works now with a fully remanufactured "Applied Materials Centura 5200" 200 mm plasma etching tool.

The Fraunhofer Institute for Electronic Nano Systems ENAS is the expert and development partner in the field of Smart Systems and their integration for various applications. Such smart systems contain not only electronic components, but also micro and nano sensors as well as actuator components with interfaces for communication and a self-sufficient energy supply. As a reliable innovation partner, Fraunhofer ENAS develops high performance sensors, new sensor and actuator systems based on integrated nano structures and standard technologies, beyond CMOS components, innovative integration technologies and extended reliability approaches.

In order to manufacture different MEMS devices we use standard equipment as it is used in microelectronics and micro systems technologies. To ensure a high quality of our MEMS devices and with compliance to our DIN EN ISO 9001 certificate, extended requirements for the processes and equipment arose, leading to a replacement of older equipment.

An important technology step in MEMS manufacturing is the etching of different structures. Within a tendering process Fraunhofer ENAS awarded memsstar as supplier for the delivery of a fully remanufactured "Applied Materials Centura 5200" 200 mm plasma etching tool with chambers for

- Multi-Purpose ICP-RIE (Inductively Coupled Plasma – Reactive Ion Etching) via means of a DPS (Decoupled Plasma Source) setup,
- Advanced Strip and Passivation (ASP+) in combination with surface treatment,
- Dedicated ME-RIE (Magnetically Enhanced – Reactive Ion Etching) for dielectrics only,
- Multi-Purpose ME-RIE Etching.

IN COOPERATION WITH



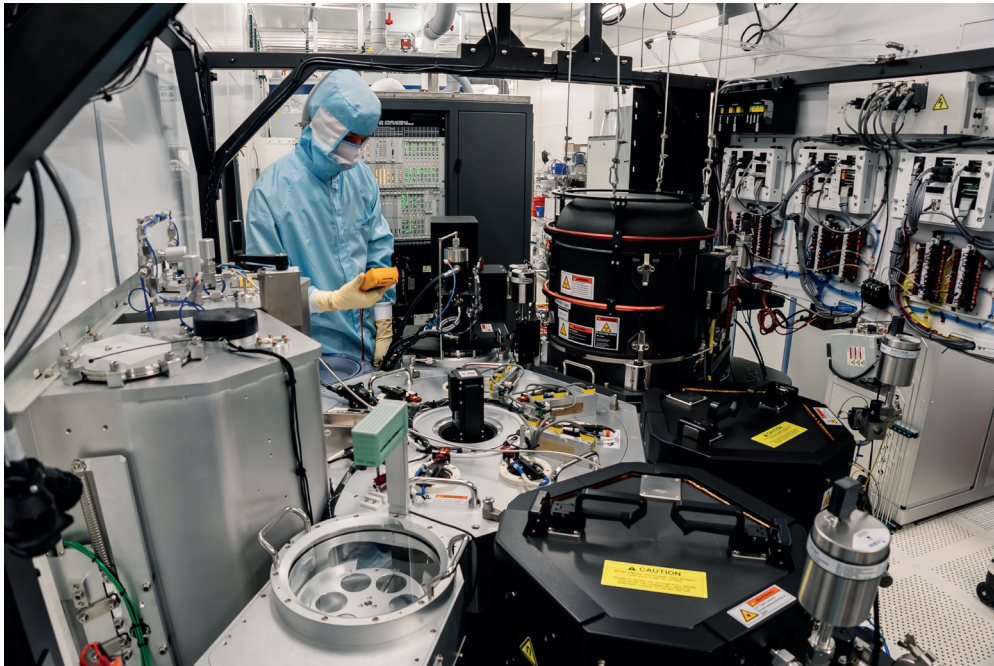
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Maintenance on the “Applied Materials Centura 5200” 200 mm plasma etching tool fully remanufactured and augmented by memsstar.

Photo © Fraunhofer ENAS / Cornelia Schubert

memsstar has been selected as they offer unique tool augmenting capabilities which are the active MEMS wafer backside protection, clear/transparent wafer handling and alignment and the resistively driven aluminium heater for the ASP(+) chamber for sustainable processing (energy savings) and improved chamber performance.

Together with upgrades for obsolescence protection and the capability to expand original chamber purposes the integrated setup of premium tool remanufacturing, field service and after sales support these were also a deciding factor in the tool selection process.

Within the selected support model memsstar also covers service and support for the additional “Applied Materials” installed base of Precision 5000 tools.

The **Fraunhofer Institute for Electronic Nano Systems ENAS** is the specialist and development partner in the field of Smart Systems and their integration for various applications. Fraunhofer ENAS has specialized on the challenge of combining micro and nano sensors, actuators and electronic components with interfaces for communication and a self-sufficient energy supply to form smart systems, thus supporting the Internet of Things and the ongoing digitalization. The institute develops single components, manufacturing technologies and system concepts, system integration technologies and actively supports the technology transfer for and with its customers. It offers innovation consulting and supports customer projects, starting from the idea, via design and technology development or realization based on established technologies up to tested prototypes.



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**Work in progress
at the Centura
5200.**

**Photo ©
Fraunhofer ENAS /
Cornelia Schubert**

about memsstar Limited

memsstar Limited is a leading provider of deposition, etch equipment, and technology products and services to manufacturers of semiconductors and microelectrical mechanical systems (MEMS). The company's remanufactured etch and deposition equipment and its proprietary technology solutions support the European semiconductor market and the global MEMS market. memsstar delivers proprietary process technology and equipment to help the MEMS industry meet the challenges of developing and manufacturing increasingly complex and integrated MEMS devices. <https://memsstar.com>

about Fraunhofer ENAS

The Fraunhofer Institute for Electronic Nano Systems ENAS is the expert and development partner in the field of Smart Systems and their integration for various applications. We offer innovative solutions and support customer projects along the whole value chain of smart systems. Fraunhofer ENAS is a reliable innovation partner for start-ups, SMEs or large enterprises and offers R&D services from the idea to the design, technology development or realization based on existing technologies to the tested prototype and technology transfer. In addition to technology development as well as smart sensor systems, the institute increasingly focuses on the setup of application demonstrators as part of an upstream product development. In its technology portfolio and market development, Fraunhofer ENAS focuses on the three business units Process, Device and Packaging Technologies, Intelligent Sensor and Actuator Systems, and Systems and Applications, which are positioned along the value chain of smart systems. www.enas.fraunhofer.de