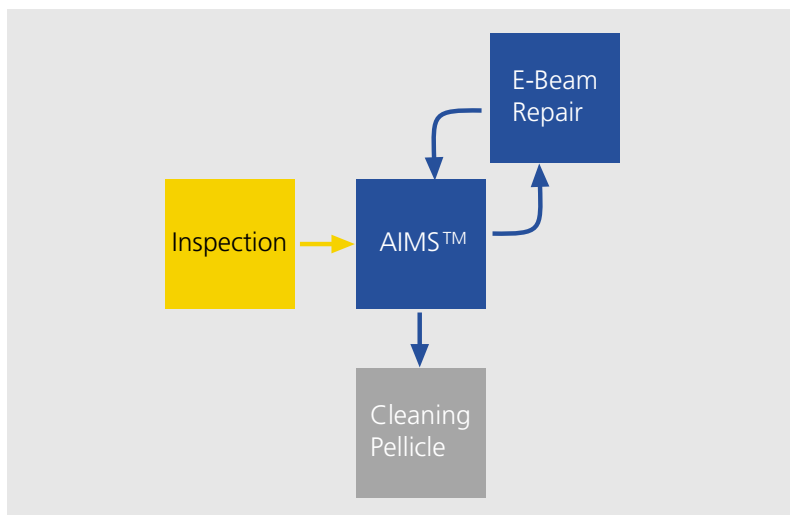


Carl Zeiss SMT AG Acquires NaWoTec G



Carl Zeiss SMT AG acquired innovative manufacturer NaWoTec GmbH shortly before the market launch of its electron beam-based mask repair system in 2005. NaWoTec has been developing the MeRiT™ MG mask repair system based on the GEMINI® 1560 FE SEM since 2001 as part of a cooperation agreement with Carl Zeiss SMT AG. To inspect and simulate repair results, the company used the recently honored AIMS™ FAB 248 and MSM 193 UV mask inspection and stepper simulation microscopes produced by Carl Zeiss SMT AG. Now there is a one-stop total solution for photo mask problems. The brand and

technology behind the electron beam-based mask repair system is protected by a series of patent applications. There are also additional future-oriented patents for applications of 3D nano-structuring with electron beams in medical diagnostics and treatment, electrical engineering, electronics, optics, mechanics and electron optics.

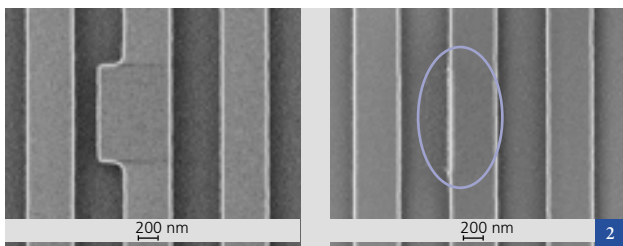
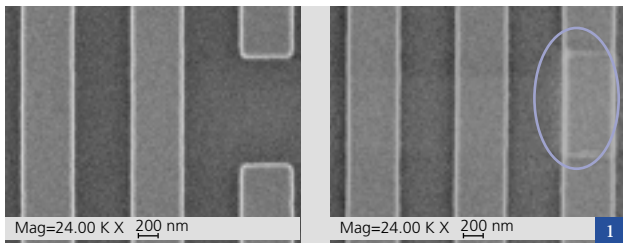
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special

MeRiT™ MG

With its processes and accuracy, the MeRiT™ MG electron beam mask repair system meets the demands of mask manufacturers for the 65 nm and 45 nm "node." It can be used in a clean room with the quality and certification required for mask fabrication. Defects can be reproducibly repaired with an accuracy of 5 nm: open defects (e.g. in the chromium absorber, Fig. 1) are repaired by depositing materials containing chromium; excess material in a closed defect (Fig. 2) is removed using electron beam induced etching. During this process, the base must not be affected. Missing mask structures are deposited in accordance with the CAD (Computer Aided Design) structural drawing or copied from other intact areas and added to or removed from the location of the defect.

mbH



details

NaWoTec GmbH

NaWoTec stands for Nano World Technologies and describes the various applications of electron beam-based nano-structuring through the induced etching and deposition of 3D structures for metrology, optics, light generation, detection, maximum frequency electronics, semiconductor technology, energy technology, biotechnology, and medical analysis and treatment. The MeRiT™ MG photo mask repair system is a globally recognized product. Different demonstrators were designed, built and patented during development of the technology: applications such as miniaturized, electrostatic lenses with particularly small lens defects, mini-electron sources, micro-tubes for GHz switching amplifiers, a multi-sensor probe for metrology and nano-analytics, and a free electron laser as THz radiation source for security, medical and analytical applications, field electron sources for electron microscopes and flat screen monitors were examined.

NaWoTec GmbH was founded in **1999** as a spin-off of Deutsche Telekom and was supplied with applications and equipment from Deutsche Telekom's T-Nova Technology Center.

In **2001**, C. Hockenmeyer and H.W.P Koops began initial development activities with 6 employees.

The delivery of basic instruments, as well as global sales and service was agreed in **2001** in a cooperation agreement with Carl Zeiss subsidiary LEO GmbH: NaWoTec develops and delivers the equipment for the photo mask repair system with process gas injection and process control software, customer demonstrations and process development tailored to the customer, as well as an application laboratory for photo mask repair.

The company grew to 30 employees at the end of **2002**.

The first system for use in the development lab at Intel was delivered in the fall of **2003**.

NaWoTec received the Innovation Award from German Industry in the Start-up category in December **2003**.

The MeRiT™ MG electron beam-based mask repair system was presented by Carl Zeiss SMT AG at Semicon **2004** in Europe, the USA and Japan as a multi-generation tool.

NaWoTec was acquired by Carl Zeiss SMT AG in **2005**.