



INNOVATIONS FOR SEMICONDUCTOR APPLICATION

Advanced Process Technology

SINGULUS TECHNOLOGIES – Nano-Coatings for the Semiconductor Industry

In recent years, SINGULUS TECHNOLOGIES has supplied a number of systems to research institutes for R & D activities of major semiconductor manufacturers, providing a wealth of experience and a strong reputation. SINGULUS TECHNOLOGIES is a renowned manufacturer of advanced thin-film deposition equipment. We are a trusted partner in the respective industry and have proven our leadership in the thin-film deposition technology for semiconductor applications.

The SINGULUS TECHNOLOGIES TIMARIS and ROTARIS vacuum coating machines operate based on the principle of cathode sputtering (physical vapor deposition = PVD). The machines can be used for customer applications in a range of product segments. The PVD Tools from SINGULUS TECHNOLOGIES offer a complete portfolio of process modules for a variety of applications. Functional layers consisting of different materials can be applied with a wide range of thicknesses. Extremely thin layers of about 0.2 nm are applied in the nanotechnology field.

The range of applications includes sensor technology, for example for use in medical technology and the automotive industry, microelectromechanical systems (MEMS), EUV technology, in magneto resistive random access memory (MRAM) and in applications for the "Internet of Things". MRAM chips are non-volatile, i.e. it maintains the information even without power supply. As a result, computers would be operational immediately after switching them on since MRAM chips are extremely-current and very fast, in particular mobile devices such as laptops, mobile phones, tablets and organizers could benefit from this new technology. Key parts of small size or chip laboratories can be manufactured, which include the entire functionality of a macroscopic laboratory on a plastic substrate only the size of a plastic card. With this chemical syntheses and analyses diagnoses (cancer as just one example), can be produced at high speed shortly. An additional application is the use of sensors in vehicle technology of automobiles.



Modern mobile applications are only possible with vacuum deposition technology

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THIN FILM
DEPOSITION

SURFACE
ENGINEERING

THERMAL
PROCESSING

WET
CHEMICAL

SINGULUS TECHNOLOGIES – Innovations for New Technologies

SINGULUS TECHNOLOGIES builds innovative machines and systems for efficient and resource-friendly production processes. SINGULUS TECHNOLOGIES' strategy is to take advantage of its existing core competencies and to expand these further.

The core competencies include vacuum coating, surface processing, wet-chemical and thermal production processes. The company offers machines, which are used worldwide in solar, semiconductor, medical technology, consumer goods and optical disc. For all of the machines, processes and applications SINGULUS TECHNOLOGIES harnesses its automation and process technology expertise.

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