

Spatial atomic layer deposition system FHR.Star.400x300-SALD delivered

FHR has successfully delivered the **FHR.Star.400x300-SALD**. This is FHR's first machine using spatial atomic layer deposition (spatial ALD). The system is capable of depositing films on both 200 mm wafers and textiles or other 3D substrates of up to 400 x 300 x 10 mm³.

Spatial ALD allows for high speed and highly conformal coatings on flat as well as micro-structured surfaces. Applications are dielectric layers for anti-reflective coatings on lenses as well as coatings for electrical insulation or protection against moisture or oxygen applied to energy systems, medical devices or functionalized textiles.



In its base configuration, the **FHR.Star.400x300-SALD** is made for thermal ALD on up to eight wafers or four 3D substrates in parallel. For Al₂O₃ on wafers, deposition rates of 5-10 nm/min and thickness non-uniformities $<\pm 2.0\%$ have been reached. A large blind flange allows to add other thin film technologies or plasma treatment and the machine is already prepared to for in-situ ellipsometry and transmission spectroscopy for improved process control. To further increase the productivity, the **FHR.Star.400x300-SALD** can be included in a cluster setup with a central handling robot chamber, load locks, pre-treatment chambers or other process chambers.



Manual device for loading and unloading of 200 mm wafers. The system is prepared to fit into a cluster system with a central transfer robot module, load locks and further process modules.

PRESS RELEASE – 4th January 2021

FHR, Marian Böhling (CSO): „ALD coating technology is valued for its unique conformality and precision even on 3D substrates but claimed to be slow and therefore often ignored. Our FHR.Star.400x300-SALD refutes this claim impressively and makes ALD available as an exciting and promising thin film technology for a wide range of industrial applications. Installed at a world-class thin film research institute, this FHR.Star.400x300-SALD offers a low-threshold access for everybody interested in using ALD for own products.“



FHR Anlagenbau GmbH - The Thin Film Company was founded in 1991 and offers tailor-made vacuum coating systems and sputtering targets as well as coating and equipment service from a single source.

The close cooperation with our customers starts with the process development and continues with the development of pilot scale up to mass production. Our portfolio integrates the technologies sputtering, evaporation, PECVD and ALD into the equipment types cluster, inline, roll-to-roll and batch. Based in Germany and with systems installed worldwide in various industries such as semiconductors, MEMS, electronics, sensor technology, optics, photovoltaics, etc., we will jointly find vacuum coating solution for our customers.



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