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SAES experience in NEG coating of challenging vacuum chambers

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In recent years, SAES has deepened its knowledge in the NEG coating field, aiming at uniformly coating vacuum chambers with challenging geometries and fine-tuning the film characteristics, according to the needs and requirements of the final users.
To achieve these goals, several complex vacuum chambers have been coated and studied, both at SAES and in collaboration with various research institutes around the globe. Tests made on NEG-coated samples include pumping speed and sorption capacity measurements, extensive film characterisations by XRF, SEM-EDS and XRD analyses, vacuum and plasma simulations, and photon-stimulated desorption yield measurements.
At the same time, SAES has been committed to the NEG coating of hundreds of vacuum chambers and of several prototypes for ongoing and upcoming machine upgrades, respectively.
An overview of the most significant achievements and results is presented, not only focusing on the technical challenges and the optimisation of few prototypes, but also giving an industrial perspective in terms of reliability, when large batches of tens or hundreds of vacuum chambers should be deposited.

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Footnotes

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