

# 10 years of EUV multilayer design, fabrication, and characterization – a retrospective.

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optiX fab GmbH was founded in 2013 to commercialize Fraunhofer IOF's EUV optics research and development activities. Located in Jena, Germany, optiX fab designs, develops and fabricates EUV imaging, illumination and collector optics. optiX fab is currently supplying chipmakers, EUV tool and source manufacturers as well as institutes, universities, synchrotron beamlines and EUV research consortia worldwide with customized multilayer and grazing incidence optics for EUV lithography applications at 13.5 nm and the entire XUV, soft and hard X-ray spectral range.

10 years ago, optiX fab GmbH coated its very first customized EUV multilayer mirror for 13.5 nm for a semiconductor equipment manufacturer. Since then, we delivered more than 23,000 customized EUV and X-ray multilayer mirrors to our customers. This paper summarizes highlights of this exciting journey starting with the early days of still low reflecting multilayer coatings made in 1998 to today's 15 million € investment in optiX fab's EUV optics fab.