

VA 1 Vacuum coatings

Time: Monday 10:00–10:40

Room: HSZ 101

Invited Talk

VA 1.1 Mon 10:00 HSZ 101

High performance coatings for UV and EUV (Next Generation Lithography) — •NORBERT KAISER — Fraunhofer IOF, Albert Einstein Str. 7, 07745 Jena

High laser pulse energy, ultra-short pulse lengths, high repetition rates as well as short wavelengths have given ultraviolet radiation a prominent role in optics. It is mainly excimer lasers which show potential for future applications such as ultra-precision machining and measurement, minimal invasive brain, vascular, and eye surgery, data communication, and LSI electronic devices. The main problem is efficiency. Only very few of the expensively generated UV photons can be used. Stable and efficient UV configurations require stable and efficient optics with extreme technical demands. Efficient optics can only be coated optics and, consequently, stable coatings are one of the most important prerequisites for solving the problem of low efficiency. Laser fusion and optical lithography are the technology drivers for developing optical components and coatings for shorter and shorter wavelengths. Investigations are being concentrated on the excimer laser wavelengths (248 nm, 193 nm). Even much shorter wavelength of about 13.5 nm (EUV) are becoming important now for the Next Generation Lithography.