

Workshop »Coatings for Optics and Optical Components«

Recent results and future demands on optical coating technology

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We present recent results of developments in optical coating technology at Fraunhofer IST with focus on magnetron sputtering. It is, of course, a truism to say that advances in modern coating technology continue. This is exciting for the developer, the user is only happy about high-quality products that can be produced more cheaply. Optics of high actuality are still improved coating and process properties such as uniformity, losses, precision etc. Production processes for coatings on curved surfaces with specific gradients or coating processes on thin substrates are two examples. In order to be able to open up the new possibilities of using artificial intelligence, developments are being carried out in relation to sensors and their use in process and coating monitoring. We present new options in optical broadband monitoring and the use of additional sensors such as real-time ellipsometry for a turntable coater with high rotation speed. Not only the implementation of further sensors, but more important the combination of the data of the existing with the new sensors allow new insights into the production process. Automated measurement procedures, useable for example during cooling down or off-time of the coater, allow both quality control and deeper analysis of the physical effects going on.