MOCCA⁺® – PROCESS AUTOMATION AND OPTICAL MONITORING

In order to increase precision in coating processes, in-situ monitoring is typically applied for testing the coating thickness. For a couple of years now, the monitoring system MOCCA⁺® has been under continuous development at the Fraunhofer IST. It allows for a variety of measurement systems to be used to increase both the precision and the degree of automation in coating processes.

MOCCA⁺® – the advantages

- Monitoring: increase in the precision of deposition
- Redesigning: optimization of the remaining layer stack for in-situ correction of layer thickness deviations
- Process control: full automation and easy to use
- Simple surfaces: management of coating formulas, material data and filter designs with just a few mouse clicks
- Optical calculations: no further software is required

Example of adaptation: EOSS

The system has been adapted to the EOSS coating installation; the significant challenge here lies in the extremely short measurement windows. In order to ensure maximum light intensity, low angle of beam divergence and extremely short measurement times, a mirror system (Fig. 1 and 2) was designed. Coupled with special measurement and trigger electronics measurement times of 500 µs can be realized with accuracies of ± 1.6 µs. The upper graph shows a typical measurement at full measurement speed. The lower graph shows the transmission curve calculated from this. All coating plant functions relevant to the process can be controlled by MOCCA⁺®.

What we can offer

The Fraunhofer IST is a competent partner in the implementation of monitoring systems tailored to individual requirements. Apart from standard solutions MOCCA⁺® can be adapted to the specific requirements and possibilities of coating systems which means that MOCCA⁺® can be used throughout the range extending from simple monitoring to complete process automation.
Measuring the spectrum via a rotation of the EOSS coating installation.

Spectral quality of measurement from 260 to 1020 nm wavelength in the EOSS.

1. Measurement beam of the monitoring system in the EOSS.
2. Imaging quality of the measuring set-up in the EOSS.

CONTACT

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