

## DESIGN AND PERFORMANCE OF A LARGE SCALE DIGITAL IMAGING SPECTROPHOTOMETER

VALTR Miroslav, NEČAS David, KLAPETEK Petr

*Czech Metrology Institute, Brno, Czech Republic, EU*

### **Abstract**

Thin films can be found everywhere around us. We can find them for example in optical elements such as bandpass or edgepass filters, antireflective coatings, high-reflection coatings, etc. Digital Imaging Spectrophotometry (also known as Imaging Reflectometry) is an optical and hence non-contact technique that can be used for thin films characterization. In a common setup the sample area being evaluated ranges up to several square centimeters. In our setup, however, the sample area is virtually unlimited because only one axis is limited. This can be in particular important in case of a roll-to-roll process. Our device was tested with a 2D stage enabling evaluation on area ranging up to 113 x 136 mm and reflectance spectra were recorded in a range from 410 nm to 770 nm. Lateral resolution is 18 microns in both axes. Thin films thicknesses acquired by the spectrophotometer on a SiO<sub>2</sub>/Si standard were compared to ellipsometrically determined values with very good agreement.

**Keywords:** Imaging Spectrophotometer, Thin Films, Reflectance

**Author did not supply full text of the paper/poster.**