

Poster-Session

Eddy Current Monitoring in High Temperature Vacuum Environment

T. Preussner¹, M. Klein², D. Hecker¹, S. Vinodh², J. Neidhardt¹

¹ Fraunhofer FEP, Dresden; ² SURAGUS GmbH – Sensors and Instruments, Dresden

thomas.preussner@fep.fraunhofer.de

Process monitoring is one of the key elements in modern product manufacturing. The knowledge of the product quality at any stage of the production cycle allows the adjustment of further processing steps and helps to prevent defects and over-processing. Thus, the product yield increases whereas costs and required resources decrease.

This poster introduces a novel concept in in-tool electrical characterization of conductive layers deposited by PVD vacuum technology. A non-contact eddy current sensor, directly installed in a heated vacuum process chamber, provides early-stage detection. It measures the electrical resistivity during the post-annealing step of AZO layers in a simulated coating production cycle and controls their annealing time. In order to ascertain the applicability of the sensor under pilot-scale conditions, reproducibility and influence of certain process parameters (e.g. heater temperature and film thickness) on the process stability were investigated.