New Challenges for the Inline Thin Film Characterization

Martin Busch, Marcus Klein
SURAGUS GmbH – Sensors and Instruments
Corresponding author: martin.busch@suragus.com

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The current transition to new production technologies in the fabrication of flexible displays, touch screens, flexible solar cells, printed electronics or OLED brings new challenges to the applied inline metrology. Traditional measurement concepts of layer thickness, sheet resistance, optical transparency and layer uniformity are expanded by monitoring of wet layer deposition, drying and curing behaviour. New sensor concepts are additionally required to adapt to high throughput lines, to flexible integration and to decreasing costs of ownership.

Straightforward non-contact sensors can serve as an example to leverage these issues by breaking down complex metrology equipment to flexible technology in a large variety of applications, while significantly lowering the costs of ownership. Metallization, TCO, nanowire and metal ink layers can be characterized with high production speed, allowing to control the fabrication process and also to flexibly modify the fabrication technology.