

OLBRICH GmbH

Title of Paper:

Next Generation Equipment for the Precision Coating of Performance Films, Foils and Papers

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Nowadays, thin Polymer films are present in multiple areas of application such as micro-electronics, bio-technology and process technology for advanced products, serving as protective layer, adhesive agent or clear lacquer and the like.

The application of thin coatings – in conjunction with the overall process onto R2R substrates such as transparent film, special foil and paper – has increased in importance.

To understand the relationship of in-line control and overall coating process criteria, a deep and out-of-the-box knowledge and expertise in single process technologies is required.

OLBRICH's newly designed pilot machine BA-2, which went online in September 2015, has almost all built-in capabilities which recognize the most important criteria with respect to coating, drying, web-handling, winding and in-line quality control technology.

We will discuss coating results from two everyday coating techniques. The qualification of these findings will be done by the use of a sophisticated optical measuring system.

Even in the field of coatings for consumer products, applying thin coating layers to surfaces becomes a challenging task. In order to retain product functionality, imprecise coating methods often have to rely on a certain excess to keep within the specification. This leads to a constant waste of resources. In many cases (e.g. medical coatings), coat weights above the desired target are disastrous for the product and hazardous for the consumer. Two points of focus have been identified:

- 1) Employment of sophisticated measuring technology
- 2) In-line capability

In the course of research, it has been found a necessity to measure down to about 150 nm in order to prove/ discuss product criteria. The finer the measurement unit, the sharper the quality control instrument.

We will discuss results from trials employing 2 dedicated coating techniques - depending on coating media to be applied, target product and on the question of how crucial it is to measure & influence quality by involving optical measuring technology (by spectral reflectivity). Via extensive mining of acquired inline data it is shown how these techniques can be qualified for a particular coating task.