OPTINANOPRO

INLINE OPTICAL MONITORING AS KEY TO SUPPORT THE OPTIMAL PROCESSING OF TEXTURED SURFACES

OptiNanoPro set up in the electrospray line of the company Bioinicia S.L. (Valencia, Spain)

- **Continuous contact-less non-destructive** measurements of roll to roll process
- Real-time in situ analysis to immediately adjust texturing process
- Compatible with transparent and non-transparent coatings, mono- and multi-layer plastics films
- The type of optical probes can be adjusted to typology of texture
- Resolution down to **micron range** or below
- **Versatile hardware**: adjustable to film width and required measurement points across the web
- **Customizable software**

Software showing the variation of the monitored values across a set of 4 optical probes vs. set tolerance along the web while the coating is applied

OptiNanoPro: real time monitoring of thin film and coated films texture across and along the web

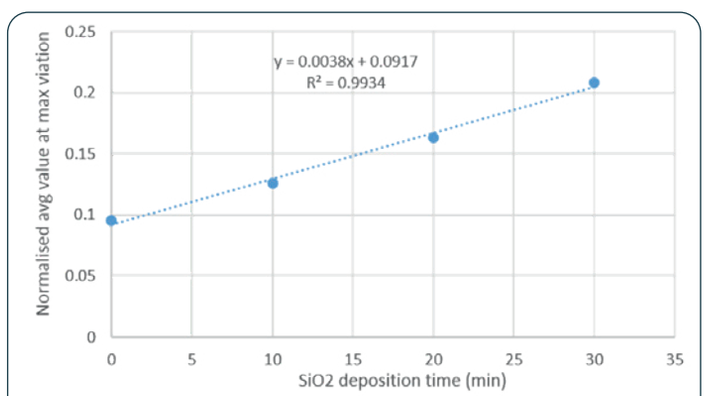
The performance of a textured surface is fully dependent on the resulting topography and its homogeneity. Having a proper control is even more challenging in case of transparent patterns in the micro/nano range produced on flexible webs.

IRIS' OptiNanoPro monitoring systems can be calibrated to measure the patterns and distribution or vs. selected final film properties in case of non-periodic/difficult to characterise patterns. It is compatible with different coating and surface treatment/engineering process requirements.

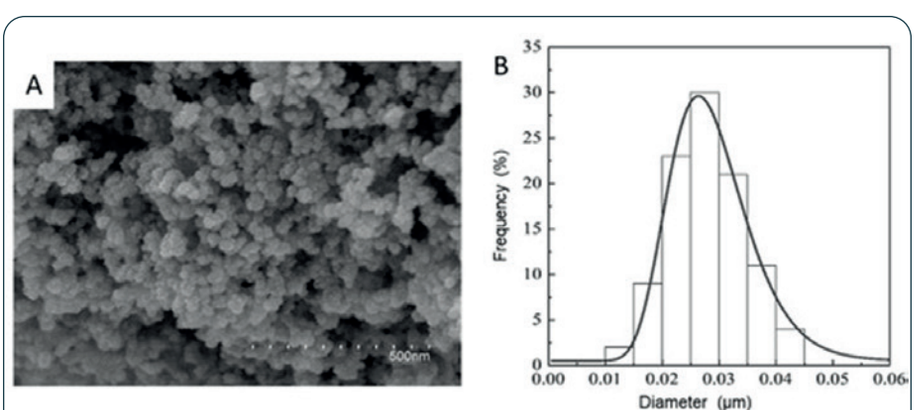
Application examples

Nanoparticles layer texturing a polymer film surface (easy emptying packaging and self cleaning Organic Photovoltaic cells)

- Calibration against deposition amount (time) and resulting surface polarity (contact angle)



Calibration curve



Surface structure (*doi.org/10.3390/coatings8050173*)

Conclusion

OptiNanoPro monitoring systems portfolio can support any roll to roll process ramp up, optimization, reduce scrap and post-production quality control needs while ensuring constant product quality.

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