Session	Advanced Coating Technologies (I)
Date	APRIL 10, 2025
Time (CET)	17:05 - 17:20
Chair	Ozan Özer

Digitalization of Large Area Glass Coaters: Enabling Future Coating Expectations

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Biography

Wilmert De Bosscher holds a PhD in Solid State Physics and Plasma Physics and has been active in the vacuum coating industry for 40 years. He has been instrumental in the development and introduction of rotatable magnetron technology into the industry.

Since 2012, Wilmert is Chief Technology Officer of Soleras, a global provider and technology leader of advanced target materials, sputter equipment, process control and smart software solutions in a wide variety of coating applications.

Wilmert has been a board member for SVC and is a member of the International Organizing Committee of the ICCG. He received the AIMCAL John Matteucci Award for Technical Excellence and a Lifetime Achievement Award from SVC.

Abstract

Digitalization has come a long way and adoption into industry is happening at an ever-increasing pace. The revolution in high volume large area glass coating applications is happening today.

This presentation tries capturing various activities of digital transformation in industrial vacuum deposition processes and how these may significantly impact our expectations and way of working in the near-future coating businesses.

Although most recent sputter coaters have plenty of possibilities for logging process parameters in real time, data mining and correlation analysis is often insufficiently explored. Limited integration into overall coater data management systems may limit the potential of those advanced tools. Having an appropriate IT framework and data gateways can link all settings and sensor data to the final performance of coated products. A new and flexible control and monitor interface is presented, allowing flexibility in dashboards and user specific configuration tools.

Incorporating machine learning into coater operation and coating processes while using aggregated data from prior operations will be discussed. By linking historical metrology data with real-time sensor and process data, performance of the coated product may be predicted during the coating process. These capabilities allow implementing an operator controlled or automated feedback loop system for providing long-term stable high quality and high yield output even for more complex coated products. In addition, component performance and the potential need for preventive maintenance on coating equipment may be monitored and allowing optimal functionality of the system.

A combination of the presented enablers will allow achieving the desired production efficiency at minimized costs and thus reducing CO_2 emission and carbon footprint. Finally, innovative glass products with advanced coating functionalities and energy saving performance contribute significantly to our greener and sustainable future.