

TUESDAY, MAY 6	
<b>12.00</b>	<b>Opening and Welcome</b>
	<p><b>Session 1   Vacuum Technologies for Advanced Manufacturing: Insights into Roll-to-Roll Systems</b></p> <p>Chair: Dr. Cindy Steiner</p> <p>The tutorial covers vacuum technologies that are crucial for advanced manufacturing, especially in roll-to-roll systems. By combining theoretical knowledge with practical skills, participants will gain an understanding of the physics behind sputtering and evaporation, as well as their relevance in modern industry. Furthermore, the tutorial delves into roll-to-roll winding systems, providing insights into the roll-to-roll manufacturing process and highlighting the importance of efficient winding systems while addressing challenges and solutions for the high-quality transport of web through a roll-to-roll machine.</p>
<b>12.10</b>	<p><b>Introduction into Physical Vapor Deposition</b></p> <p>Dr. Matthias Fahland (Fraunhofer FEP)</p>
<b>12.30</b>	<p><b>Advanced Roll-to-Roll PVD Technology: Transforming High-Volume Production of Precision Multilayer Devices</b></p> <p>Mike Simmons, President &amp; CEO (INTELLIVATION LLC)</p>
<b>13.00</b>	<i>Coffee Break</i>
	<p><b>Session 2   Sustainable Packaging: Innovations in Roll-to-Roll Coating Technologies</b></p> <p>Chair: Jan Hesse</p> <p>In the quest for sustainable packaging solutions, roll-to-roll coating technologies are essential to provide flexible packaging materials in cost-efficient industrial scale. This session will delve into the latest advancements in various roll-to-roll coating techniques that enhance the sustainability of packaging materials. We will explore how these technologies contribute to reducing environmental impact by minimizing material usage, enhancing recyclability, and improving barrier properties. Special emphasis will be placed on the handling and functionalizing of biobased and biodegradable materials using roll-to-roll processes. Join us to discover how roll-to-roll coating technologies are paving the way for a greener future in packaging.</p>
<b>13.35</b>	<p><b>Laser texturing for continuous, R2R production of functional surfaces</b></p> <p>Girolamo Mincuzzi (ALPhANOV)</p>
<b>13.55</b>	<p><b>Circular flexible packaging designs with post-consumer recyclates and barrier coatings</b></p> <p>Dr. Esra Küçükpınar-Niarchos (Fraunhofer IVV)</p>
<b>14.15</b>	<p><b>AlOx &amp; SiOx Barrier Coatings for Sustainable Flexible Packaging</b></p> <p>Dr. Markus Piwko (VON ARDENNE GmbH)</p>
<b>14.35</b>	<p><b>Less is More: Deposition and Use of Inorganic Oxide Coatings in Sustainable Packaging</b></p> <p>Peter Olbrich (Applied Materials WEB Coating GmbH)</p>
<b>14.55</b>	<i>Coffee Break</i>
	<p><b>Session 3   Advances in Surface Structuring: Nano-Imprinting, Curing against drum, and Embossing Processes</b></p> <p>Chair: Dr. Steffen Günther</p> <p>This session delves into the latest advancements in surface structuring technologies, focusing on nano-imprint lithography, curing against drums, and embossing processes. Attendees will gain insights into the methodologies and applications of these techniques in creating structured surfaces. Through expert presentations and discussions, we will explore the challenges, innovations, and future directions in the field. This session is essential for professionals seeking to enhance their understanding and application of surface structuring in various industries.</p>
<b>15.30</b>	<p><b>Seamless stitching by step&amp;repeat UV imprint lithography for R2R and R2P tooling</b></p> <p>Barbara Stadlober (Joanneum Research Forschungsgesellschaft mbH)</p>
<b>15.55</b>	<p><b>High-volume replication of optical components with nanoimprintlithography (NIL)</b></p> <p>Katrin Christiani (Temicon)</p>
<b>16.20</b>	<p><b>Closer to nature: Industrial surface texturing using curing against drum and electron beam technology</b></p> <p>Dr. Markus Schütz (Surteco Group SE)</p>
<b>16.45</b>	<p><b>Advanced patterning for Nano-Imprint masters</b></p> <p>Brid Connolly (Tekscend)</p>
<b>17.10</b>	<b>Closing</b>
<b>17.20</b>	<i>Bio Break</i>
<b>17.30</b>	<b>Lab Tour (50 Minutes)</b>
<b>18.20</b>	<b>Dinner and Poster Session at Technical Center Fraunhofer FEP</b>

## WEDNESDAY, MAY 7

	<b>Session 4   Vacuum Coating Technologies for Batteries</b> Chair: Claus Luber
	The energy transition is progressing worldwide, but many challenges remain unresolved. Energy storage systems play a decisive role in the ecologically sustainable design of our energy systems. Various strategies and technologies for manufacturing energy storage systems are competing with each other on the market in order to realize the required efficiency and cost savings. Coatings and layer systems produced using vacuum coating technologies play an important role in this. This requires an optimum choice of materials for the coatings and coating systems in conjunction with a perfectly adapted coating technology. The session 'Vacuum Coating Technologies for Energy Storage' deals with roll-to-roll vacuum coating technologies that are suitable for Li-ion and 'next generation' batteries and other energy storage systems.
08.30	<b>Deposited silicon: is it viable for anodes in lithium-ion cell technology?</b> Prof. Filippos Farmakis (Uni Thrace)
08.50	<b>Safer Lithium-Ion Batteries: The Role of Metallized Polymer Film Current Collectors in Preventing Thermal Runaway</b> Saurabh Boppte (Soteria BIG)
09.10	<b>Innovative Coating Technologies for LIBs and Beyond - Current Trends and Future Prospects</b> Daniel Becker (Fraunhofer FFB)
09.30	<i>Coffee Break</i>
	<b>Session 5   Thermochromic Materials for Building Applications</b> Chair: Dr. Matthias Fahland
	The building sector is responsible for more than 40 percent of the annual primary energy demand in Europe. Naturally, there is a need to reduce this number with the background of the climate change. At the same time, the demand of cooling will increase worldwide with the increasing temperature levels. Energy management via thin coatings on polymer films looks already back to half a century of technical development. It is 50 years ago that the first solar control films appeared on the market. The technical development is still ongoing. The layer stacks are continuously improving. New functions, like the adaptation of the optical properties to actual conditions were realized. Comprehensive building simulations allow the prediction of the energy demands after the introduction of new technologies. In this session we are looking forward to some contributions of this interesting field of research.
10.00	<b>Design and scalable synthesis of thermochromic VO<sub>2</sub>-based coatings for energy-saving smart windows</b> Prof. Jaroslav Vlcek (University of West Bohemia)
10.20	<b>Bulk and thin film routes for tuning the transition temperature in VO<sub>2</sub></b> Aline Rougier (Université Bordeaux)
10.40	<b>Scale up of Vanadium dioxide-based thermochromic coating deposition for large area</b> Dr. Stephan Ulrich (Fraunhofer IST)
11.00	<i>Coffee Break</i>
	<b>Session 6   Scalable technologies for flexible perovskite solar cells</b> Chair: Dr. Michael Hoffmann
	Perovskite solar cells on lab scale consistently achieve power conversion efficiencies in the range of 20-25% with increasing reports of simultaneously passing IEC accelerated lifetime test for 1000 h. Since they only require low temperature thin film technologies, they have the potential of disrupting the solar energy market. For the route to market, the successful implementation of scalable production technologies plays a crucial role. This session focuses on roll-to-roll technologies for perovskite solar cells on flexible substrates. It addresses the entire value chain including electrodes, buffer-, transport and absorber layers and encapsulation technology up to the module level.
11.30	<b>Disruptive, Lightweight, Low-Cost Solar Film</b> Dr. Trevor McArdle (Power Roll)
11.50	<b>Gravure printing as a deposition method for flexible perovskite solar cells</b> Dr. Riikka Suhonen (VTT)
12.10	<b>Scaling up a Roll to Roll line for flexible PV-modules</b> Herbert Lifka (HyET Solar)
	<b>Session 7   Funding Strategies: Navigating Opportunities and Establishing Collaborative Networks</b> Chair: Dr. Christian May
	This session focuses on effective strategies for securing funding by searching for relevant opportunities and preparing successful applications. Participants will learn how to navigate various funding sources and understand the complexities of the application process. Emphasis will be placed on leveraging networks to identify potential collaborators and resources. The aim of this session is to equip participants with the essential tools needed to successfully seek funding and discover collaborative initiatives in their respective fields.
12.30	<b>How to be successful with EU funding</b> Dr. Gretel Wittenburg (ZEUSS)
12.50	<b>Accelerate innovation from a research result to a product</b> Dr. John Fahlteich (KET Market GmbH)
13.10	<b>Closing Remarks</b>
13.15	<b>End</b>