

PRESS RELEASE

04 | 17

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March 6, 2017 | Page 1 / 3

FOSA LabX 330 Glass – Coating Flexible Glass in a Roll-to-Roll Process

The Fraunhofer Institute for Organic Electronics, Electron Beam and Plasma Technology FEP and VON ARDENNE will intensify their cooperation in the field of the coating of flexible glass. Due to its properties, this new material is ideally suited as a substrate for various applications in flexible electronics. Since October 2016, the two partners have been operating the roll-to-roll coating system FOSA LabX 330 Glass together.

VON ARDENNE 

This new, innovative machine was especially developed for processing flexible glass by the equipment manufacturer VON ARDENNE, which is based in Dresden, Germany. It is the first of its kind worldwide. As all the components of the system are working very precisely, the sensitive glass can be wound, heated and coated. As the material is thinner than one-tenth of a millimeter, enormous technological expertise is required to guarantee the reliability of the process.

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Within the KONFEKT project funded by the German Federal Ministry of Education and Research (funding reference number 13N13818), the two partners seek to open up new fields of application and to demonstrate the efficiency of the system. SCHOTT AG and TESA SE, who are also involved in this project, provide, optimize and ensure the further processing of the substrate material.



The LOPEC 2017 will take place on 29 and 30 March 2017 in Munich. There, at booth 318 in hall B0, Fraunhofer FEP will present coating samples of the FOSA LabX 330 Glass for the first time. VON ARDENNE will introduce the machine at booth B0/210.

“We have achieved excellent results on this system already during the first tests with transparent electrodes”, enthused Dr. Matthias Fahland, deputy manager of the business area Flat and Flexible Products at the Fraunhofer FEP. “ The system offers our customers a high potential for the development of innovative layer systems on flexible substrates”, he continued.

The exceptionally high quality of the coatings reached with the FOSA LabX 330 Glass is the basis for high-quality electrodes for organic light emitting diodes (OLED). These electrodes power organic light emitting diodes (OLED) with a size of up to 30 cm x 30 cm in a steady manner. This is only one example for the numerous possible applications for the machine – be it for coatings or for layer developments in optoelectronics.

Fraunhofer Institute for Organic Electronics, Electron Beam and Plasma Technology FEP

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“Because of its outstanding properties, flexible glass will play a vital role as material of the future”, said Dr. Andreas Nilsson, Vice President Web Coating at VON ARDENNE. “We are looking forward to the new possibilities that this material offers. In the joint project with our long-term partner Fraunhofer FEP, we are transferring the necessary roll-to-roll vacuum coating process of flexible glass from a laboratory to an industrial scale. From this, we expect important cost benefits for everyone involved in the value chain.” Dr. Nilsson explained.

At present, the scientists of both companies are working on the manufacturing of the first demonstrators. At the same time, they have already been working on further layer systems. The focus is mainly on optical layers, such as anti-reflection layers or optical filters. Fraunhofer FEP and VON ARDENNE will be pleased to share their technical and technological expertise in thin-film vacuum processing with potential partners in order to join forces to develop applications for the FOSA LabX 330 Glass, to coat further samples and evaluate the material.

On 4 and 5 April 2017, the new web coating system FOSA LabX 330 Glass will be presented to the general public during a workshop at the Fraunhofer FEP titled VISION | Flexible Glass.

More information about the workshop VISION | Flexible Glass:

www.fep.fraunhofer.de/visionflexible

About VON ARDENNE

VON ARDENNE develops and manufactures equipment for industrial coatings on materials such as glass, wafers, metal strip and polymer films. These coatings give the surfaces new functional properties and can be between one nanometer and a few micrometers thin, depending on the application. The coated materials are the basis for products such as architectural glass, solar modules or touch screens.

VON ARDENNE is a leading provider of architectural glass coating equipment and coating systems for thin-film photovoltaics. The family-owned company with subsidiaries in China, Japan, Malaysia and the USA relies on customer proximity in order to offer ideal on-site service. VON ARDENNE equipment is in operation in more than 50 countries around the world.

VON ARDENNE

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Meet VON ARDENNE at LOPEC 2017 in Munich from 29 to 30 March 2017: Hall B0, booth 210

Fraunhofer FEP at LOPEC 2017:

Trade Fair: Hall B0, booth no. 210

Talks during scientific conference:

29.3.2017

Session: Materials III; 15:40 – 17:20, Room 14c

Claudia Keibler, Fraunhofer FEP

Novel simplistic method for bending tests on flexible electronic devices

30.3.2017

Session: Flexible Displays & Lighting; 11:30 – 12:50, Room 13a

Dr. Stefan Mogck, Fraunhofer FEP

Flexible OLED lighting Integration into glass-glass composites



VON ARDENNE FOSA LabX 330 Glass - coating system for flexible glass

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The **Fraunhofer Institute for Organic Electronics, Electron Beam and Plasma Technology FEP** works on innovative solutions in the fields of vacuum coating, surface treatment as well as organic semiconductors. The core competences electron beam technology, sputtering and plasma-activated deposition, high-rate PECVD as well as technologies for the organic electronics and IC/system design provide a basis for these activities. Thus, Fraunhofer FEP offers a wide range of possibilities for research, development and pilot production, especially for the processing, sterilization, structuring and refining of surfaces as well as OLED microdisplays, organic and inorganic sensors, optical filters and flexible OLED lighting. Our aim is to seize the innovation potential of the electron beam, plasma technology and organic electronics for new production processes and devices and to make it available for our customers.