Fraunhofer
POLO

PRESS RELEASE
02 I 2010

Fraunhofer Polymer Surfaces Alliance POLO

Neunerplatz 2
97082 Würzburg

www.polo.fraunhofer.de

FRAUNHOFER POLO ANNOUNCES ROLL-TO-ROLL PILOT PRODUCTION OF TRANSPARENT BARRIER FILMS FOR ENCAPSULATION OF FLEXIBLE ELECTRONICS AND SOLAR CELLS

Researchers from the Fraunhofer Polymer Surfaces Alliance POLO (Fraunhofer POLO) have developed highly efficient barrier films suitable for roll-to-roll production and that are now being produced on a pilot plant scale. The scientists have developed a sandwich structure of inorganic ceramic layers, which embed the patented hybrid coating ORMOCER®. The system has a very low water permeability of 2 x 10^{-4} g/m²/d, as measured in a calcium test at 38°C and 90% r.h..
Dr. Sabine Amberg-Schwab, spokesperson of the Fraunhofer POLO, points out: »The unique properties of the hybrid ORMOCER® layer boost the barrier properties of the inorganic barrier layers. This makes the barrier films suitable for demanding technical applications, such as for flexible electronic devices.«

The processing technology is a big step towards efficient large-area production of flexible electronic devices such as flexible solar cells, flexible OLEDs, and LCD-displays. The Fraunhofer POLO can reproducibly apply the barrier film to various polymeric materials in a roll-to-roll process on a pilot plant scale. Dr. Nicolas Schiller, head of the »Flexible Products« department stresses: »The availability of barrier films on a pilot scale is essential for developers of flexible electronic components. Moreover, the Fraunhofer POLO can customize films with further functionalities such as transparent conducting electrodes. We invite customers to govern the route for further developments in cooperation with Fraunhofer POLO.« Dr. Sabine Amberg-Schwab adds: »Our barrier material has superior performance, and the films are flexible and easy to use. We offer customers our expertise and assistance on film application and handling operations. We also assist customers in the selection of adhesives and in the integration of our material into their production processes.«

In a nutshell, the ultra-barrier films are very versatile. Their properties can be adapted as required by the device manufacturer and various polymeric materials can act as suitable substrates. In addition, the barrier film can be produced as needed and independently of the production of the device, and can then be laminated onto the substrate.

Fraunhofer
POLO

PRESS RELEASE
02 I 2010

Fraunhofer Polymer Surfaces Alliance POLO

Neunerplatz 2
97082 Würzburg

www.polo.fraunhofer.de

About the Fraunhofer POLO

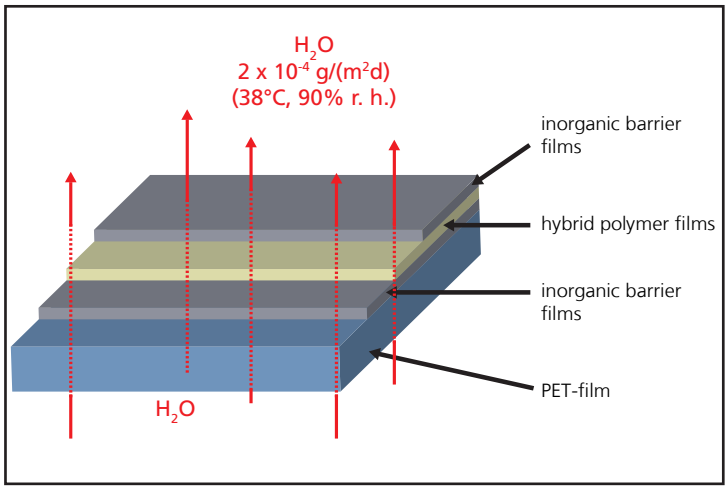
The Fraunhofer Polymer Surfaces Alliance POLO brings together the individual expertise of seven Fraunhofer Institutes and develops innovative concepts for the functionalization of polymer surfaces.
The Fraunhofer POLO offers support throughout the whole development phase, namely from the first fundamental experiments right through to scale-up and automation of the processes. The Fraunhofer POLO is the ideal partner for companies that manufacture and process polymers, and for users of polymers.

More information about the Fraunhofer POLO and ongoing projects can be found at:
www.polo.fraunhofer.de/en/index.html

POLO spokesperson:
Dr. Sabine Amberg-Schwab
Phone +49 931 4100-620
sabine.amberg-schwab@isc.fraunhofer.de

Requests for pilot production of barrier films:
Dr. Nicolas Schiller
Phone +49 351 2586-131
nicolas.schiller@fep.fraunhofer.de

Press contact:
Annett Arnold
Phone +49 351 2586-452
annett.arnold@fep.fraunhofer.de



Structure of barrier film and the achieved barrier value

Pictures in printable resolution (CMYK, 300 dpi) can be found under
www.fep.fraunhofer.de/enu/press