



PRESS RELEASE

Precise measurement technology for complex plastic films enables cost savings Successful cooperation between two Aachen institutes and industry

The increasing requirements upon packaging films are reflected technologically in a more and more complex layer composition and an increase of functional layers of plastic films. As functional layers, expensive materials such as the plastic EVOH, for example, are commonly used.

Due to the comparably high material price of the functional plastic, however, plastics processors have been making an effort to keep the share of the product's raw materials as low as possible while retaining functionality. The thicknesses of the functional layers produced here lie mostly between 1 µm and 20 µm. In order to guarantee a fully functional barrier effect, manufacturers must continuously monitor integrity and thickness of the functional layer. Until now such a film inspection system has not been available, one which can measure the layer composition of multi-layered films at production speeds of up to 450 m/min.

Within the scope of the IRIS* project, researchers from the Fraunhofer Institute for Laser Technology ILT together with the Institut für Kunststoffverarbeitung (IKV) at the RWTH Aachen University are developing a system to measure plastic films. This measuring system is based on an interferometric sensor and uses infrared light to detect refractive index changes within a measurement sector. Such refractive index variations appear on the surface of the film as well as on the transitions between the individual film layers.

Both institutes have cooperated closely with four small and medium-sized enterprises for this project. Octagon GmbH from Würzburg and Elovix GmbH from Karlsruhe placing their long-term experience in the area of measurement technology into the development. In the coming year, the measurement system will be tested at the plant construction company Kuhne GmbH in Sankt Augustin under near-production conditions, before it is installed at the company A+C Plastic Kunststoff GmbH in Eschweiler on a production plant, where it will go into operation for several months.

On the International Trade Fair for Plastics and Rubber K 2010 (Düsseldorf, Germany, October 27 – November 3, 2010), the research partners will be presenting the prototype of their film inspection system to trade experts at Stand C16 of the IKV in Hall 14.

*German: Interferometrisches Regelungs- und Inlinekontrollsystem; Englisch Interferometric Inline Control System

About the IKV

The IKV Institute of Plastics Processing at RWTH Aachen University is one of the biggest institutes engaged in this field of research. The Institute has more than 300 employees working on the problems encountered during the processing of the many different types of plastics that are now available. The IKV's excellent contacts with industry, together with its outstanding facilities, ensure that students benefit from a comprehensive, practically oriented course of study. Plastics engineering graduates from the IKV are thus sought-after experts in industry. Around 50 percent of German plastics engineers with a university degree have received their education at the IKV. In organisational terms, the IKV is divided up into the four specialist departments of Injection Moulding and PU Technology, Extrusion and Further Processing, Part Design and Materials Technology, and Composites. The Institute also takes in the Centre for Analysis and Testing of Plastics, and the Training/Skilled Crafts department. It is run by an Association of Sponsors, which currently has a membership of about 250 plastics companies from all over the world. The members of the Association of Sponsors exploit their cooperation with the Institute to ensure that they benefit from new developments at a particularly early stage. Professor Dr.-Ing. Dr.-Ing. E.h. Walter Michaeli is Head of the Institute and Managing Director



of the Association of Sponsors. He also holds the Chair of Plastics Processing at the Faculty of Mechanical Engineering at RWTH Aachen University.

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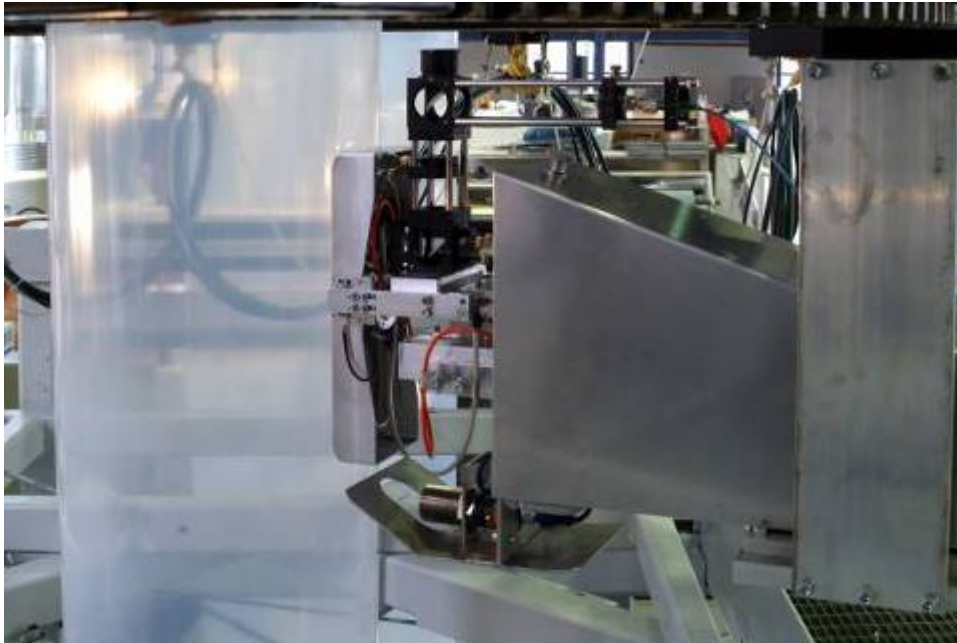
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Blown film plant at a pilot plant of the IKV with a running film inspection system
(photo: Fraunhofer ILT)