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**Window film producer KDX equips its Zhangjiagang plant in Jiangsu Province, China with ISRA's SMASH system for high level surface inspection**

## **Exceeding the market's requirements – KDX improves product quality with high-end surface inspection system**

One of China's largest producers of window film has equipped its coating process line with the ISRA inspection System SMASH for high level window film inspection. KDX must meet the demanding quality requirements of the market. Therefore, extremely small scratches in the material need to be identified which until now could not be detected. The Chinese company chose ISRA as its partner in order to find the most efficient solution for those challenges, which is the intelligent automated optical inspection system, precisely analyzing and detecting defects.

The decision to integrate SMASH at the Zhangjiagang site, Jiangsu Province, was well-founded for KDX. The optical film branch works with the highest requirements for surface quality. For example, window film is used in the automotive or the construction sectors to reduce solar radiation. Even very tiny scratches affect the intended features of these products, which are cost-sensitive for customers. Both aspects account for a product that needs high-end inspection before it can be delivered and further processed.

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Therefore KDX identified the need to introduce a new inspection system to improve quality. ISRA had been recommended to KDX by contacts and business partners in the industry as a globally leading company of surface vision. Mr. Hu, the Production Director, said: "ISRA's system can detect surface defects like small scratches in real-time and classify the shape and location of such defects. It replaces manual methods for inspection entirely, significantly increases the production efficiency, reduces the production cost, and ensures the film quality." Mr. Hu added that competitors' systems are often just able to detect either scratches or parts of defects.

ISRA's SMASH is used for surface inspection of optical film and detects the defects in real-time. Four advantages can be identified: First, the system, ensures that end customers receive only flawless material. Second, waste is reduced and the marketable production volume can be increased. Third, product properties are fully monitored and defect sources corrected. And last, plant operators can make product changes efficiently, thereby saving costs. Defects as glue line, bubbles, color deviations, light distortion and scratches can all be avoided with the inline inspection system.

In the case of KDX, an optical configuration was developed by ISRA especially for this project and has proven to be very valuable to the customer. KDX has reached all of its objectives in quality control at optimal costs due to the affordable and efficient solution: The short adjustment time of the production line and lower waste rate significantly increased output. With the cooperation on the on-site ISRA service engineers and additional expert assistance from the

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Germany headquarters, as well as the initial maintenance support, the system set-up smooth. Today the manufacturing staff uses system very efficiently. ISRA checks the system status regularly and applies the customer's valuable feedback for continuous performance refinement and system development. Remote access enables easy service and fast adjustments.

"We are now able to avoid continuous defects, to reduce waste and in-line adjustment time. ISRA's SMASH can detect the defects in-line and locate them precisely. It can show the product quality each day based on the history records and data statistics, which allow immediate adjustments," Mr. Hu said about the very satisfying performance and the good classification results. Today, the technical department adjusts process parameters according to the data. ISRA upgraded the system recently, thereby the best possible performance.

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## Images



### 776\_1:

Combining 100% defect detection with deep learning algorithms SMASH significantly increases the production efficiency and secures perfect material quality.



### 776\_2:

SMASH provides a previously unattainable degree of precision in detection of smallest scratches down to <math><10 \mu\text{m}</math>.

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