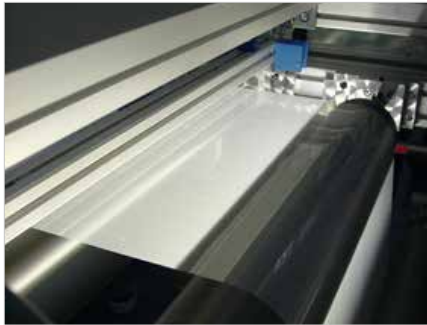


## In-line Inspection for Coated Materials: Quality and Process Control for Higher Yields



Coated material production line

Dr. Schenk's reliable in-line inspection solutions detect defects and irregularities in film, foil and paper during all production steps, e.g. lamination and coating. Thanks to an innovative optical concept even the smallest defects are detected.

Automated quality assurance and process control with EasyInspect and EasyMeasure ensure fast process optimization and increased yield combined with minimized rejects for web manufacturers and converters.

### Examples of coating applications

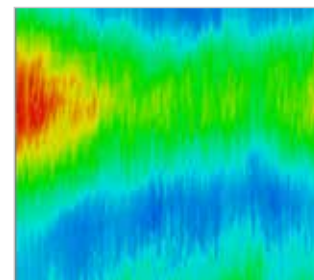
**Coating on label material:** In pharmaceutical or food product applications strict legal requirements exist for the information printed on labels to be legible without fail. The printing quality depends largely on the surface quality of the involved base material. Even separating the release liner from a label can be challenging when its silicone layers were not evenly applied. Automatic optical inspection with EasyInspect helps to identify defects and monitor the overall product quality.

**Coating of battery films:** The very thin, stacked film sheets that separate the electrodes in Li-ion batteries for cars and trucks have to be without defect. A small hole in the film could cause a high local current and trigger an explosion. The need for high production line output commands fast and flexible inspection systems that can handle varying substrates as well as varying production line configurations in roll-to-roll and roll-to-sheet assembly. EasyInspect is ideally suited for this demanding task.

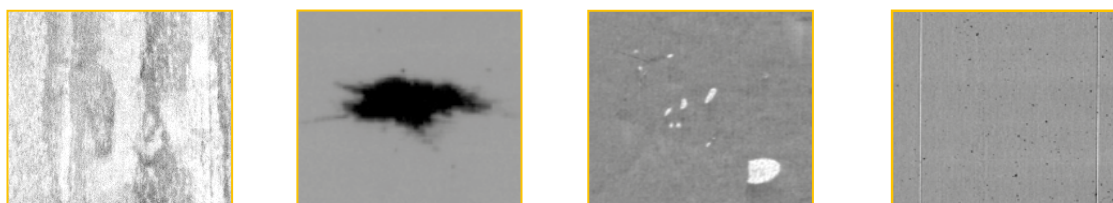
### EasyMeasure

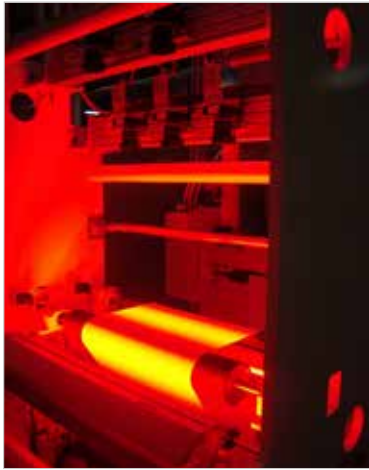
#### Monitoring options for the coating process:

- Layer Thickness:** Local thickness variations
- Porosity:** Porosity of films and coatings
- Formation:** Fiber dispersion variations in paper / non-wovens
- Reflectivity:** Reflectance of materials and coatings
- Resistivity:** Coating sheet resistance
- Haze:** Coating surface structure



False color images reflect layer thickness variations





*Dr. Schenk inspection system*

## Quality challenges for coated material manufacturers

**Controlling coating layers:** During the coating processes microscopically thin layers of, e.g. polycarbonate, polyester or acrylic, are deposited on film substrates. To guarantee their full functionality, these coating layers must be free from defects, contaminations or unacceptable thickness variations.

**Detecting repeating defects in coatings:** Residue and foreign particles on rollers of a coating line can generate a repeating defect in subsequent material sections. EasyInspect recognizes the equal distance between defects and automatically diagnoses contaminated or damaged rollers. This reliable detection of repeating defects helps to ensure a consistently high quality level throughout the production process.

## YOUR BENEFITS

### Cost Savings with Superior Technology

- Improved defect detection and classification through Multiple Image Defect Analysis (MIDA)
- Super-fast cameras allow multiple optical channels in one camera line
- Reduced costs and installation space through Twin-Line illumination – 2 optical channels in one illumination

### Unparalleled User-Friendliness

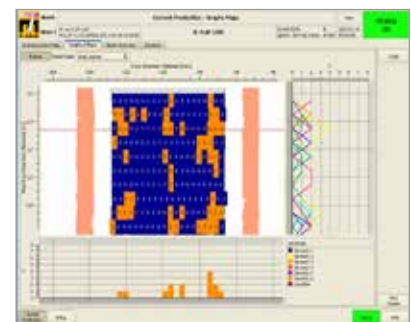
- Easy and automatic creation of classification rules with the Auto-Classifier
- Configurable reports with the Dr. Schenk Reporting Tool

### 100% Material Monitoring

- Easy Measure for 100% monitoring of the material properties e.g. haze, thickness, and many more



*Running defect map to visualize inspection results*



*Density map of the material*

#### About Dr. Schenk

Dr. Schenk GmbH offers inspection and measurement solutions for automated quality assurance and production process control - a key success factor in the making and converting of many materials, e.g. plastics, textile materials, nonwovens, paper, metal, or glass, for a multitude of markets like display glass, automotive, packaging, medical, renewable energy, and many more. From modular standard units to highly customized systems – Dr. Schenk's solutions have your material in focus!

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