ISRA VISION AT K 2022

A new generation of camera-based inline inspection systems increases earnings, lowers costs, and simplifies operation

In line with its new Empowering Vision Excellence strategy, ISRA VISION (www.isravision.com) introduces the next generation of camera-based inline inspection systems with new features and intelligent software tools. Visitors can see a live demonstration at stand C52 in hall 10 of the key global plastics trade fair, K 2022, in Düsseldorf. Demonstrations include system solutions for the production of lithium-ion batteries and a combined solution for inspecting unprinted and printed web materials. The comprehensive portfolio is rounded off by the latest generation of the Cloud Xperience software platform, with its AI (artificial intelligence) concept for clustering during defect classification and a smart software solution for real-time process and status monitoring. Used in manufacturing and converting plastic webs and coatings, these new and enhanced solutions optimize user convenience and offer an array of benefits.

Dirk Broichhausen, Managing Director and Group Vice President of the Surface & Print Inspection – Advanced Materials business unit at ISRA VISION, states: “Today, users of the latest generation of ISRA optical inspection systems not only receive comprehensive information about the condition of their products in real-time during ongoing production processes. But they also benefit from accelerating the ramping-up of their production, lowering costs, and simplifying the operation of these high-tech systems. Thanks to ISRA’s solutions, the data generated can be used to immediately derive measures that ensure that even the tiniest defects are found – meeting even the strictest quality criteria.”
100% inline inspection for the production of lithium-ion batteries

ISRA VISION offers two series of inspection systems that help manufacturers of powerful, safe, and durable lithium-ion batteries to identify possible problems and defects at an early stage in the production process. Thus, enabling them to meet even the most stringent quality requirements.

The SMASH Battery system – part of the well-known SMASH product range – is optimized for the automatic inspection of electrode coatings, as well as separator foils and their coatings (e.g., PVDF). SMASH Battery delivers real-time information on product quality and indicates to what extent the specifications have been met. As such, it allows the reliable detection and classification of potential material and product defects that could compromise the quality of the end product as early as the preliminary stage of battery production. In particular, its reliable inline classification, i.e., the differentiation between “black spots” and holes that appear dark, ensures maximum safety and confidence in our customers’ products. Costly and time-consuming lab tests are virtually a thing of the past.

ISRA VISION will also present PouchSTAR – a completely new turnkey solution for inline inspection of single battery cells. The system inspects the shape, size, and sealed seam of the cells and reliably detects surface defects, deformations, blemishes, and contamination. It also checks and documents bar codes and data codes. This ensures that only perfect cells are supplied to customers, thereby preventing the need for costly recalls. If a problem does occur, the product qualities can be traced in order to optimize the process.
Combined inspection solution for unprinted and printed materials

DualSTAR is a new system that further optimizes the workflow of flexible packaging manufacturing and finishing. Because it allows the user to switch between “surface” and “print” inspection depending on the job, it is currently the only solution worldwide to combine the inspection of unprinted foils, laminates, and coatings with that of printed material in a single system. This saves the converter or laminator considerable investment costs, as they only have to choose one system.

The “surface inspection” component automatically detects and classifies all relevant defects when manufacturing unprinted, transparent, opaque, dyed, and translucent web material. For printed material, DualSTAR continuously checks the quality of the printed image, lamination, and coating, thus ensuring process optimization throughout the value chain. As a result, 100% inline inspection delivers significant quality and cost benefits for users.

The next generation of Cloud Xperience: even faster startup, even more user-friendly

Under the name Cloud Xperience, ISRA VISION offers an innovative software platform that combines the advantages of cloud computing with intelligent analytics tools. It stores data in a central location while also enabling the continuous status monitoring of production processes and inspection systems.

Thanks to a self-learning, AI-based cluster function for classifying defects, it can collect, save, sort and then automatically classify image files in the cloud. This automated processing allows defect patterns to be differentiated from one another and classified more quickly and reliably, in turn simplifying system setup and potentially bringing about a significant reduction in the time needed to ramp up production. Furthermore, the data stored in the cloud is available to all authorized users, such as those at other production lines or company sites, allowing a global recipe management system to dramatically shorten and simplify the setup of the inspection systems.
Comprehensive condition and health monitoring with PROMI live

PROMI live is a production management intelligence solution that enables comprehensive monitoring of ongoing processes and the inspection systems themselves. The new data platform intelligently combines data such as the defect rate, production line speed, lamp brightness, CPU utilization, and customer-specific parameters and presents the results in clear COCKPITs covering multiple sites. This gives the user maximum transparency on the current state of their processes and the inspection systems themselves so that possible maintenance windows can also be identified and planned quickly. Another advantage is that the production speed can be increased without affecting the product quality, as new possibilities can be used on the basis of the analysis results.
The new PouchSTAR inspection system for the production of pouch cells for lithium-ion batteries examines the shape, size, and sealed seam of the cells and reliably detects surface defects, contamination, and damage.
The new DualSTAR inspection system combines surface and printed image inspection. In the future, just a single inspection system will be needed for individual steps in the production and finishing of flexible packaging, such as laminating, winding, and slitting, reliably detecting both print defects and defects on unprinted films.
The EPROMI live production analytics tool monitors the data from ISRA VISION’s inspection system, allowing real-time status monitoring that can be accessed from anywhere, without having to install client software. The analysis tool continuously checks the status of the system and acts as an early warning system to detect upcoming problems.