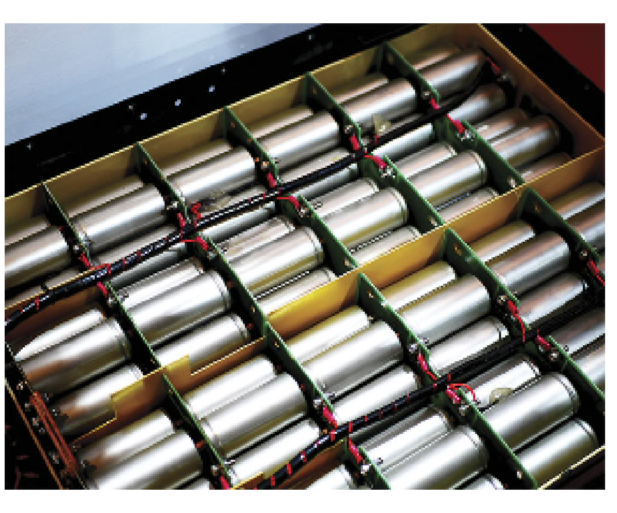
Tuesday, June 27, 2023

Vision spectra

www.Vision-Spectra.com

Quarterly newsletter from Photonics Media featuring the latest advancements in and applications for vision systems – from sensors to software. Manage your Photonics Media membership at Photonics.com/subscribe.

Line-Scan Cameras Facilitate Increasingly Higher Throughput



In their most basic form, line-scan cameras have a single row of pixels. To capture an image, the object being imaged must be moving at a known speed. An encoder provides a feedback signal from a moving belt into the camera to tell it when the speed is increasing or decreasing. Image data is then sent from the camera via cable to a frame grabber, or directly to the computer's local area network (LAN) input via network cable. Depending on the application, lighting requirements, which become more important at higher speeds, may also need to be considered.

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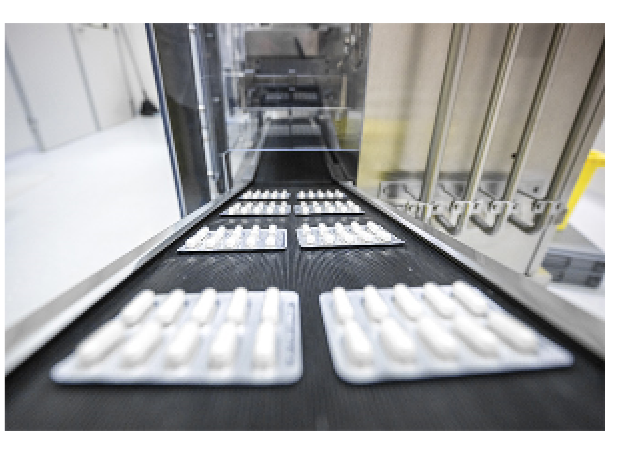
AI Streamlines Inspection in the Pharmaceutical Industry



Visual inspections in the pharmaceutical and medical device industries help to ensure that medications, instruments, and packaged items arrive free of defects for end users. Whether such products are marketed for use in clinal settings or for at-home care, the processes that ensure efficiency in pharmaceutical manufacturing must perform flawless repetitions and yield high throughputs.

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AI Brings New Capabilities to Bin Picking

Plucking individual objects from a collection, or bin picking, is a staple of manufacturing and processing. Robotic bin picking has been around for decades but often required special expertise to configure, as well as some sort of manual intervention, such as placing parts on a fixture prior to the robot's actions. However, recent advancements in machine learning and associated AI technologies are prompting emerging capabilities in robotic bin picking, saving time and money.

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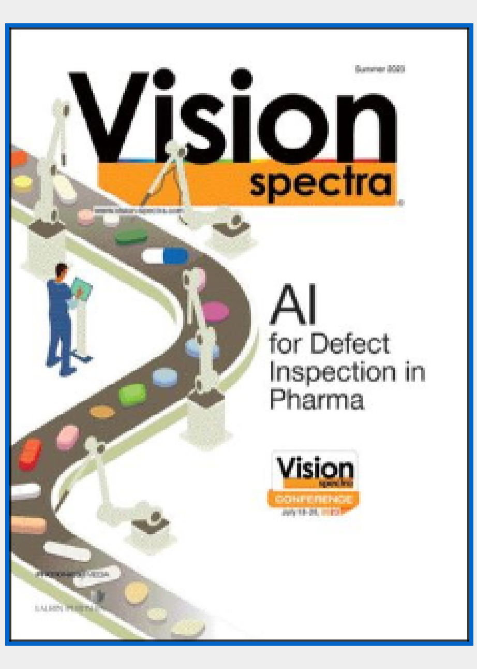
About *Vision Spectra*



Vision Spectra is a global resource geared for the vision community, with real-world case studies of vision in action, comprehensive feature articles, and columns from experts in the field examining the trends that enable Industry 4.0.

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.: Featured Products & Services

More Copper to Fiber Conversions

Euresys SA

Euresys and Vieworks, respond to increasing requirements for image speed, size, resolution and distributed vision. With a strong record of anticipated collaboration with camera makers, Euresys Coaxlink QSFP+ compatibility with the new Vieworks camera will soon be illustrated.

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Multispectral Line Scan Camera

Chromasens GmbH

The new allPIXA neo multispectral line scan cameras deliver highest performance at line rates up to 300 kHz. The quadlinear CMOS sensor provides 4k and 6k resolution in Color, Mono, or NIR. With 10 GigE or CoaXPress interfaces, they are a cost-efficient solution for all high-speed web inspection tasks.

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Atlas10 Camera with RDMA

LUCID Vision Labs Inc.

The award-winning Atlas10 camera offers Remote Direct Memory Access (RDMA) for optimal 10 GigE image transfer and reliably streams 1.2 GB/s of data directly to main memory, bypassing the CPU and OS. This increases throughput, lowers latency, and eliminates CPU usage, which is required for reliable multi-10 GigE camera applications.

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Smart Cameras With NVIDIA Jetson Xavier NX

Baumer Ltd.

5 Megapixel, Color, NVIDIA Jetson Xavier NX Sony IMX250 2448 × 2048 px, 2/3" CMOS, 77 fps 6-Core NVIDIA Carmel ARM 384 Core NVIDIA Volta GPU 8 GB 128-bit LPDDR4x Gigabit Ethernet, USB 3.0, RS232

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IDENT Sensor for Optical Identification of 1D, 2D, and DMS Codes

Balluff Inc.

Balluff's new IDENT sensor is the first code reader on the market to offer IO-Link, allowing users to integrate code reading without separate Ethernet drops and IP addresses for every reader. This stationary sensor was designed to precisely read barcodes, 2D codes, and Direct part marked codes.

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High Intensity Back-lit Backlights

Advanced illumination (Ai)

Advanced illumination is announcing the release of their BL2 High Intensity Back-lit Backlights, a new and improved take on Ai's original backlight design. The BL2 Backlights are highly customizable and provide improvements in brightness, uniformity, structural rigidity, and efficiency.

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MAGMA Light Engine

Lumencor Inc.

MAGMA Light Engine controls 21 solid-state light sources for best-in-class spectral breadth and purity. Numerous illuminators operate as ethernet-connected ensembles with host computer oversight in manufacturing or for inspection processes. Large scale lighting installations can be coordinated efficiently, are scalable, and readily reconfigurable.

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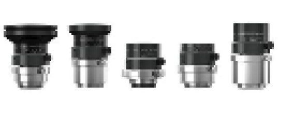

C-Mount Lenses

Schneider Optics Inc., Industrial Optics

This JADE family of C-Mount Lenses covers a 1.2-in. format (19.3-mm image circle) with a broadband antireflection coating that allows transmission from 400 to 1000 nm.

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Peak Performance for Embedded Vision Applications

MATRIX VISION GmbH

With the new series mvBlueNAOS4, MATRIX VISION complements the embedded vision portfolio with models that are especially designed for the fast sensors of the Sony Pregius S series. These sensors achieve both high image quality with small pixel size and high transfer rates. The mvBlueNAOS4 uses the direct way for image transfer: PCI Express.

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10 GigE, 25 GigE, and 100 GigE Machine Vision Cameras

Emergent Vision Technologies Inc.

Emergent Vision Technologies has responded to today's growing application requirements by introducing innovative new offerings designed for today's machine vision and imaging challenges, including 10 GigE, 25 GigE, and 100 GigE area scan cameras that reach speeds of up to 3462 fps.

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Camera Tech Holds Promise for Plastics Recycling

Due to the diverse nature of the materials used to make plastics, as well as additives such as dyes and flame inhibitors, plastic recycling poses significant challenges. According to Bjarke Jørgensen, head of research and development at Newtec Engineering A/S, separating plastics into pure fractions of compositional elements is needed to increase the rate of recycling. At least 95% purity in the plastic fractions is currently required, Jørgensen said.

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Clustering Resolves Bottlenecks Plaguing Vision Transformer AI

Vision transformers (ViTs), which are AI models that perform image identifications or categorizations from within images, hold numerous applications in day-to-day life. For example, these powerful technologies could be used to identify the cars in an image that includes pedestrians, or vice versa.

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Inspection Technology Incorporates AI to Detect Defects in Real Time

Researchers at the Fraunhofer Institute for Material and Beam Technology IWS (Fraunhofer IWS) have developed a solution that uses AI and optical measurement technology to detect, classify, and visualize defects in real time, and report them to the plant carrying out the production.

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Features

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