

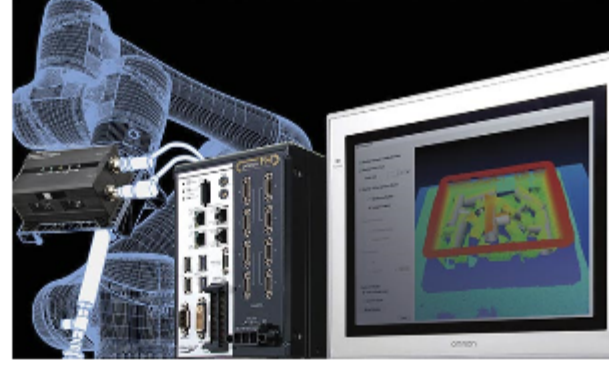
Vision spectra

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Bimonthly 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.

Vision-Powered Cobots Improve Speed and Quality of Inspections

Cobots assisted by machine vision with AI can aid manufacturers with automating assembly and inspection processes, and offer numerous advantages in industries from automotive and packaging to food electronics and pharmaceuticals. They perform additional functions in manufacturing, including pick and place and assembling and disassembling products, and work with machine safety systems by automatically detecting human workers in their vicinity and reducing their speed and force accordingly to prevent injuries.



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Ensuring Perfectly Printed Coins at the Hamburg Mint

The Hamburg Mint in Hamburg, Germany, has been in operation since 834 C.E., making it one of the oldest mints in Germany. Given its rich heritage, the mint's operators have gone to great lengths to ensure that its coins are the best they can be, especially when it comes to color printing their newly stamped currency. To increase the accuracy of the printing technology used on the mint's euros, machine and computer vision specialist phil-vision created a machine vision system that tracks the exact position of the coins as they are placed on their trays, ensuring accurate printing on the coinage.



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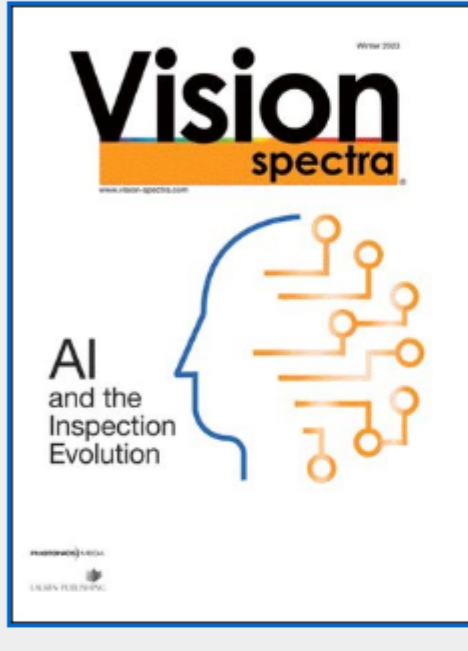
Machine Vision Ensures Error-Free Braille for Pharmaceuticals

Pharmaceutical manufacturers have included braille on their packaging for years, operating with the knowledge that the omission of a single dot could mean the difference between 100 mg and 500 mg, potentially leading to risks of underdosing or overdosing. Considering this potential health risk, an industrial image processing specialist in-situ GmbH, based in Sauerlach, Germany, was tasked with developing a system specifically designed to inspect the quality of braille dots to ensure that every dot is in its correct place.



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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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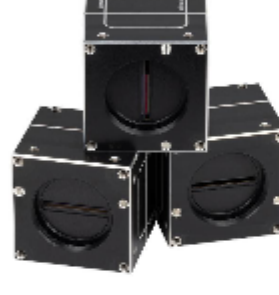
Glazed But Not Confused

Teledyne DALSA, Machine Vision OEM Components

A sweet inspection where three companies combine to ensure consistent, uniform, and package-ready donut perfection. This video provides an overview of the integration of robotics, multidimensional 2D and 3D vision inspection, and software processing resulting in minimized costs and maximized production.

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Multispectral Line-Scan Cameras

Chromasens GmbH allPIXA neo multispectral line-scan cameras from Chromasens deliver highest performance at line rates up to 300 kHz. A quadlinear CMOS sensor provides 4k and 6k resolution in RGB, mono, or NIR. With 10 GigE or CoaXPress interfaces, these cameras are a cost-efficient solution for all high-speed web inspection tasks.

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Machine Vision

Photonics Media Machine Vision is a book for anyone designing or selecting machine vision systems, and implementing or considering the use of machine vision for a specific application. This 260-page volume includes 32 articles on system design and selection, camera sensors, image processing, and more.

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High-Fidelity 3D Profile Sensors

Zebra Technologies Inc. Zebra Altiz is a series of high-fidelity 3D profile sensors. Each sensor features a dual-camera single-laser design that greatly lessens the scanning gaps often encountered at critical surface junctures because of optical occlusions.

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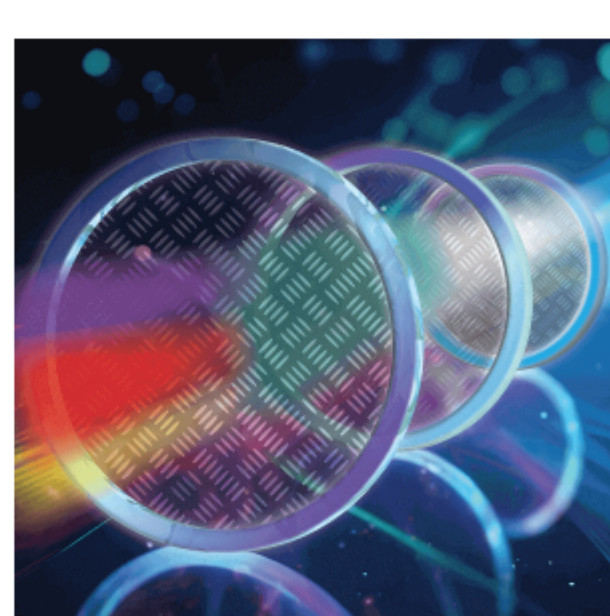
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Compact Thermal Imaging System Created with Spinning Metasurfaces

Researchers have developed a technology that uses meta-optical devices to perform thermal imaging. The approach captures richer information about imaged objects, including spectral and polarization details, which could broaden the use of thermal imaging in fields such as autonomous navigation, security, thermography, medical imaging, and remote sensing.



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Method Creates Quantum Dots for Consumer CMOS SWIR Image Sensors

Researchers from ICFO and ICFO computer vision spinout Qurv have fabricated a high-performance shortwave-infrared image sensor based on nontoxic colloidal quantum dots (CQDs). In their study, the team reports on a method for synthesizing functional high-quality nontoxic CQDs integrable with CMOS technology.

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Cognata, Partners Bring Digital Twin-Based Simulation into Microsoft Azure

Automated Driving Perception Hub global program. The program, which will run on Microsoft Azure, aims to enable automotive customers to virtually and efficiently evaluate advanced driver assistance systems/autonomous vehicle sensors through digital twin-based sensor simulation.

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Features

3D Imaging, Warehouse/Logistics, Hyperspectral Imaging, and Sub-pixel High Dynamic Range Imaging

Photonics Media is currently seeking technical feature articles on a variety of topics for publication in our magazine Vision Spectra. Please submit an informal 100-word abstract to visionspectra@photonics.com, or use our online submission form www.photonics.com/submitfeature.aspx.



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