

Vision spectra



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.



One-stop Sourcing Platform for Optoelectronic Ecosystem

3D Matching and Deep Learning Transform Bin Picking

3D-based matching, a means of finding the exact 3D location of objects, is used in machine vision systems to optimize and automate the handling of items, allowing all types of objects to be accurately identified and located in three-dimensional space. The benefits of the method are most apparent when used for precisely determining the position and orientation of 3D objects, particularly in highly automated manufacturing scenarios involving robotics.

[Read Article](#)



Embedded Vision Is Set for Application on a Massive Scale

Compact, efficient, and highly application specific, embedded vision technology increasingly offers performance and price points that would have been impossible to achieve only a few years ago. The steady advancement in capabilities has been driven by improvements in all component technologies, including sensors, optics, and processors.

[Read Article](#)



3D Imaging Sees Growth in Multiple Dimensions

From time to time, we all find ourselves forced to rummage through the cluttered jumble of our home “junk drawer” to dig out a screwdriver, battery, paper clip, or other much-needed object. For humans, this is merely cause for fleeting irritation — but for robots working on a factory floor, this same problem poses a major technological challenge.

[Read Article](#)



.: Vision Spectra Conference



Presentation: “Shrinking Pixels and Growing Sensors: Two Approaches for Increasing Resolution”

Presented by: Greg Hollows, Edmund Optics

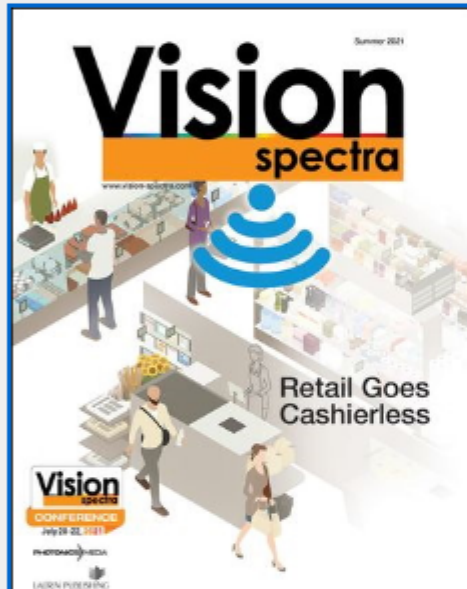
The drive for continuous innovation in machine vision results in a constantly increasing demand for higher resolution. Sensor manufacturers can take two main approaches to meet demand: They can either shrink pixels, or increase sensor size. Both options come with tradeoffs, in terms of sensor performance, and with the imaging optics used with them. Because of fundamental limitations in the pixel size that can be successfully used with traditional imaging optics, the sizes of the sensor and mounting interface must increase to accommodate demands for higher resolution.

Greg Hollows, vice president of the Imaging Business Unit at Edmund Optics in Barrington, N.J., goes into the meaning of this trend for lenses; the challenges the trend introduces for builders of machine vision systems; and solutions for getting the most out of sensors and lenses.

The inaugural *Vision Spectra* Conference runs July 20 - 22. Registration is free for the event, which is offered exclusively online. For more information and registration, please visit www.photonics.com/vsc2021. Continued coverage of this inaugural event will also be available on vision-spectra.com and Photonics.com leading up to the conference.

[Register Now](#)

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.

Visit Photonics.com/subscribe to manage your Photonics Media membership.

[View Digital Edition](#) [Manage Membership](#)

.: Featured Products



10 GigE Camera Series with Robust Housing

MATRIX VISION GmbH

The mvBlueCOUGAR-XT camera series combines a 10 GigE interface with the performance of modern

image sensor technology and resistant IP67 housing for the industrial environment. The first series models come equipped with 24.6 MP, 20.4 MP and 16.2 MP sensors from the Sony Pregius S Gen4 CMOS family.

[Visit Website](#)

[Request Info](#)



Bi-Telecentric Lenses by DIOPTIC

DIOPTIC GmbH

Telecentric lenses are ideally suited for image processing solutions such as the measurement of components due to their imaging properties. DIOPTIC's bi-telecentric lens series is additionally telecentric on the image side and can be quickly and flexibly extended to special customer requirements due to its modular design.

[Visit Website](#)

[Request Info](#)



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

engaging overview is a resource for designers, engineers, researchers, marketers and students looking for a broad survey of advancements in systems,...

[Visit Website](#)

[Request Info](#)



Alluxa Ultra Series Filters and Coatings

Alluxa

Alluxa Ultra Series Filters, including Narrowband, Dichroic, UV, IR, and Notch filters, provide the highest performance optical thin film solutions available today. For example, the Ultra Series Flat Top Narrowband filters offer the narrowest bandwidths and squarest filter profiles in the industry.

[Visit Website](#)

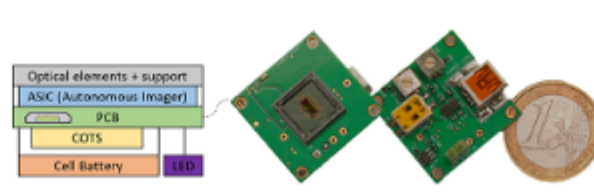
[Request Info](#)



.: More Vision News

CEA-Leti Unveils Autonomous Imager

CEA-Leti has unveiled an autonomous imager technology that is able to activate smartphones and small appliances through facial recognition or other specific patterns, using 10,000x less power than similar technologies.



[Read Article](#)

Graphene-Based Tracking System May Streamline Autonomous Vision

A real-time 3D tracking system developed at the University of Michigan may one day replace lidar and cameras in autonomous technologies. The system combines transparent graphene-based light detectors and advanced neural networks to sense and image scenes in three dimensions.

[Read Article](#)

Radio Frequency, Vision Combine to Allow Robots to Detect Hidden Objects

MIT researchers combined traditional characteristics of computer vision with radio sensing to enable a robot to detect occluded, or blocked objects. In application, the development could streamline e-commerce fulfillment in warehouses or help a machine detect a particular object in a disordered context.

[Read Article](#)

.: Next issue:

Features

Ruggedized Lenses, Vision in the Pharmaceutical Industry, Polarization Cameras, and more.

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.



We respect your time and privacy. You are receiving this email because you are a Photonics Media subscriber, and/or a member of our website, Photonics.com. You may use the links below to manage your subscriptions or contact us.

Questions: info@photonics.com

[Unsubscribe](#) | [Subscribe](#) | [Subscriptions](#) | [Privacy Policy](#) | [Terms and Conditions of Use](#)

Photonics Media, 100 West St., PO Box 4949, Pittsfield, MA 01202-4949

© 1996 - 2021 Laurin Publishing. All rights reserved. Photonics Media is Registered with the U.S. Patent & Trademark Office. Reproduction in whole or in part without permission is prohibited.