Thursday, May 20, 2021

This Week in PHOTONICS

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.: Top Stories

Compact, Multifunctional Device Uses Infrared Light to Deliver Images
Electrical engineers at the University of California, San Diego described a thin, large-scale device that converts infrared light into images. The imager, among other applications, can be used to see through smog and smoke and to see through silicon wafers to inspect the quality and composition of electronic boards.

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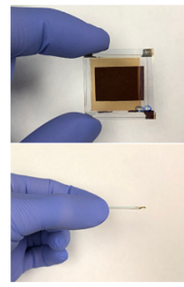

Graphene-Based Tracking System May Streamline Autonomous Vision
A real-time 3D tracking system developed at the University of Michigan may one day replace lidar and cameras in autonomous technologies. The system combines transparent graphene-based light detectors and advanced neural networks to sense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

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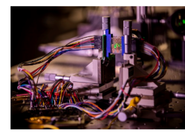

Silicon Multiplexer to Advance THz-Based Communications
An ultra-small silicon chip called a multiplexer is poised to increase data processing speeds and the next generation of communications — 6G and beyond — as a result. The chip, developed by researchers from Osaka University and the University of Adelaide, is made from pure silicon and manages terahertz waves in the 300 GHz band.

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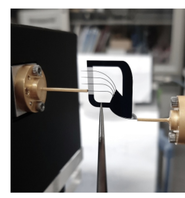

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.: Upcoming Webinars

Freeform Optics for Imaging: Design Methods
Wed, May 26, 2021 1:00 PM - 2:00 PM EDT
The rise of freeform optics in imaging applications has led to optical systems with increased etendue, more compact volumes, and superior performance. In this presentation, Jannick Rolland, Ph.D., and Aaron Bauer, Ph.D., of the University of Rochester's Institute of Optics will provide an overview of the methods in which systems utilizing freeform optics have been designed and the steps taken to bridge freeform design to manufacture. Examples of freeform systems from space applications to an application in the movie industry will be discussed. Part 1 of the 2021 Freeform Optics Series.

Register Now

Freeform Optics for Imaging: Manufacturing Methods
Thu, May 27, 2021 1:00 PM - 2:00 PM EDT
In this talk Matt Davies, Ph.D., of UNC Charlotte, and John Lambropoulos, Ph.D., of the University of Rochester, discuss the current methods employed for manufacturing freeform optics, as well as those methods' comparative strengths and the limitations. In particular, they examine the need for post-processing (finishing) and its interactions with other manufacturing steps and methods. Part 2 of the 2021 Freeform Optics Series.

Register Now

Freeform Optics for Imaging: Mid-Spatial Frequency Errors
Wed, Jun 2, 2021 1:00 PM - 2:00 PM EDT
Residual mid-spatial frequency (MSF) surface errors are common byproducts of the computer-controlled sub-aperture manufacturing techniques needed for fabrication of freeform optics. In this presentation, Thomas Suleski, Ph.D., provides an overview of MSF surface error signatures, specification methods, and performance impacts. Part 3 of the 2021 Freeform Optics Series.

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