

# IMAGING

## Tech Pulse

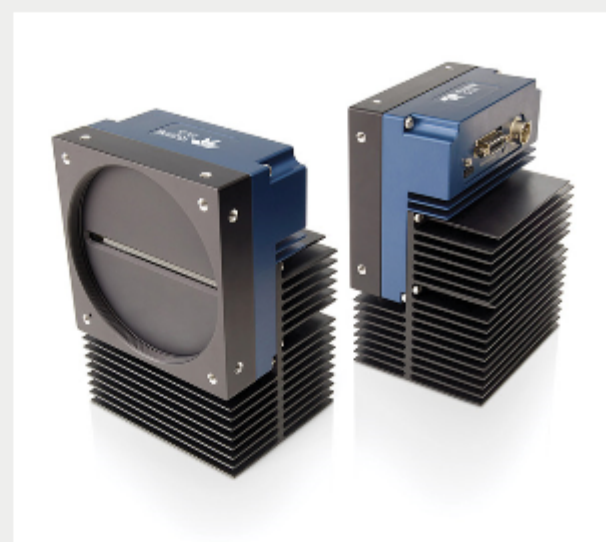


### November 2019

Imaging Tech Pulse is a special edition newsletter from Photonics Media and PCO-TECH Inc. covering key developments in imaging technology. Manage your Photonics Media membership at [Photonics.com/subscribe](https://www.photonics.com/subscribe).

#### Demand for Versatile CMOS Sensors Continues to Grow

Scientific and consumer markets are driving heavy demand for CMOS sensors, and developments such as AI compatibility are at hand. CMOS imagers, spurred by high demand in the smartphone industry, have become commonplace in nearly every type of consumer camera and in most scientific imagers as well.



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#### PROMOTED CONTENT PCO-TECH Inc.

##### pco.dicam C1: Intensified 16 Bit sCMOS Camera

The pco.dicam C1 is the first camera system with image intensifier technology that harnesses the full power of the sCMOS sensor. Unique is the optical connection of the high-resolution 25 mm image intensifier to the 16 bit sCMOS sensor via an efficient tandem lens. Individual photons are detected using the shortest exposure times. A sustained frame rate of 106 fps at 4.2 MPix resolution and 16 bit dynamic is now reality for the first time with intensified cameras.

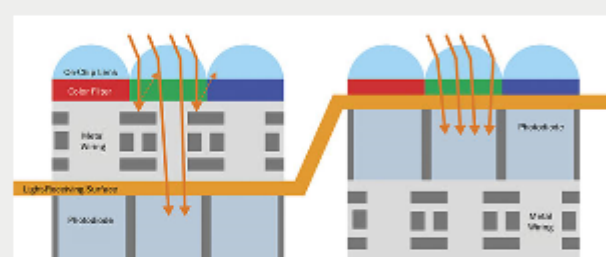
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#### Fluorescence Microscopy: Getting the Picture Right

Fluorescence microscopy is a broadly used term covering numerous applications. It ranges from basic life science applications to sophisticated techniques where only very few photons or single molecules are detected and localized by specific high-end hardware and software. Camera choice has to strike a balance between certain sensor properties and the needs of the intended applications in industry or medicine.



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#### Innovative Design of Optical Systems Boosts Industrial Metrology

Image sensor evolution has been extremely expansive since the first digital camera was created in 1975. In more recent years, increasing use of image sensors has rapidly driven camera chip evolution in many aspects: resolution, sensitivity, signal-to-noise ratio, speed (frame rate), and fill factor among them.

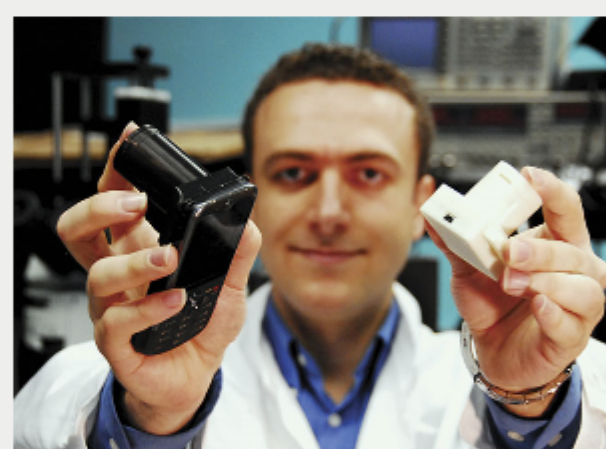


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#### Lens-Free Microscopy Focuses on Commercialization

With advancements in image processing and sensors, lens-free microscopy is ready for a closer look by researchers, industry, and consumers. Compared to traditional benchtop microscopes, lens-free techniques can cost less, reduce instrument size, enlarge the field of view, and improve throughput.

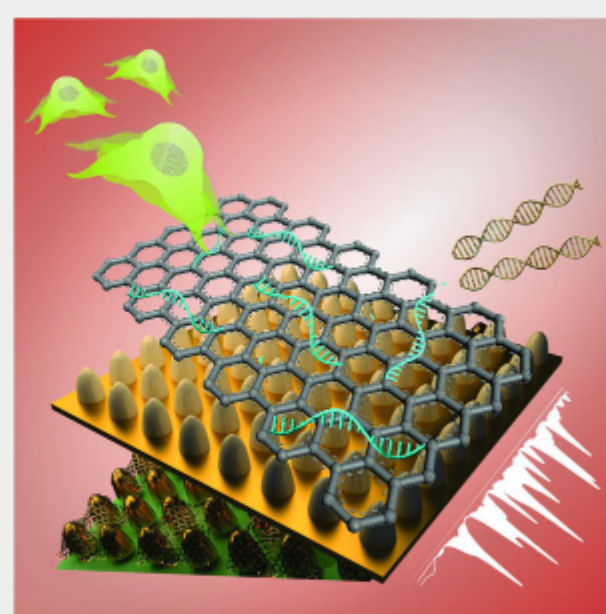


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#### Biosensor Uses Raman Scattering to Help Ensure Safety of Stem Cell Therapies

A research team at Rutgers University has developed a biosensor technology that could benefit applications for the treatment of neurological disorders through stem cell therapy. The hybrid biosensing platform consists of an array of ultrathin graphene layers and gold nanostructures. This platform has been combined with Raman spectroscopy.



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## Webinars

#### Frequency-Domain Fluorescence Lifetime Imaging System Improvements and Applications

Wed, Nov 20, 2019 10:00 AM - 11:00 AM EST

This webinar presented by PCO's Gerhard Holst will demonstrate and discuss improvements in the use and applicability of the FD-FLIM pco.flim camera. New results including investigation of microplastics on lab filters, pH measurements, oxygen measurements in a marine environment, assistance for neurosurgery, and rapid FD-FLIM measurements will be shown to demonstrate the flexibility of the pco.flim camera system.

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