

# This Week In PHOTONICS

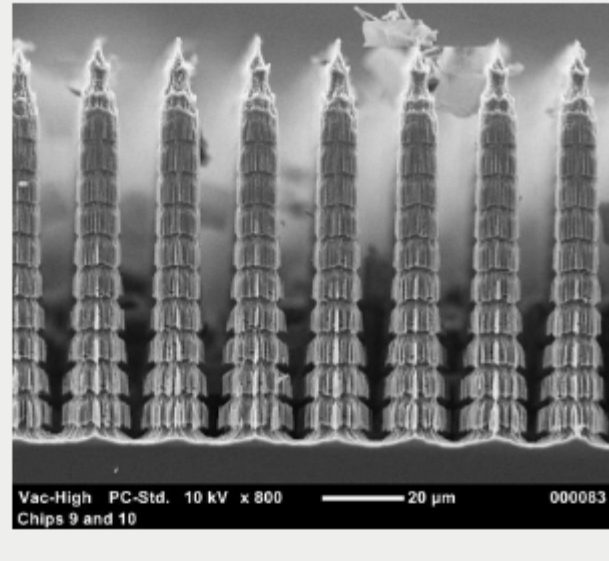
PHOTONICS MEDIA



## Top Stories

### Moth's Eye Inspires Design and Applications of Camera Developed by NASA

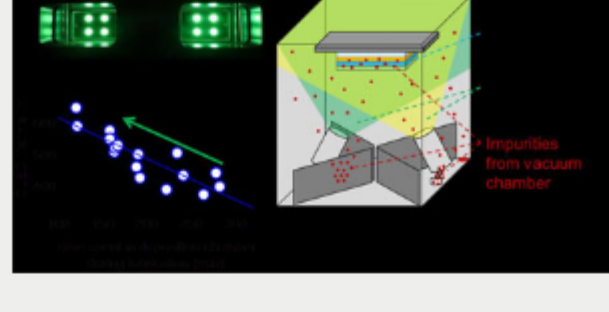
A moth's eye is the inspiration behind the technology that allows a new NASA-developed camera to create images of astronomical objects with far greater sensitivity than was previously possible. When magnified, a moth's eye contains a very fine array of small tapered cylindrical protuberances whose job is to reduce reflection. This allows the moth to absorb light making night navigation possible.



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### Vacuum Impurities Could Impact OLED Lifetime

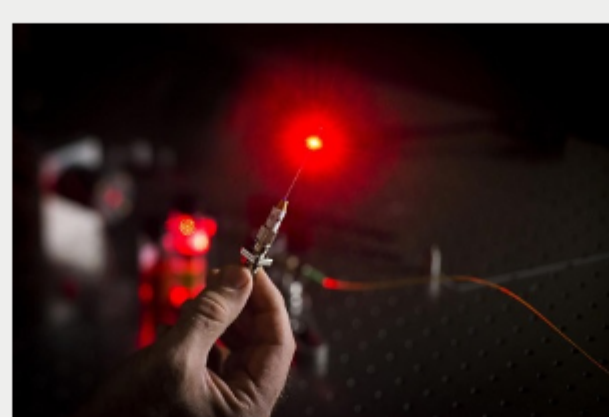
While issues affecting the efficiency of OLEDs are well understood, the reasons why some OLEDs degrade and lose brightness over time have not been as easy to identify. Devices fabricated with seemingly the same procedures and conditions but by different research groups often degrade at vastly different rates, even when the initial performances are the same. One possible explanation for discrepancies in OLED lifetimes could be minuscule impurities present in the vacuum chamber during fabrication.



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### Photonic-Based Smart Needle Detects At-Risk Blood Vessels

A new high-tech tiny imaging probe encased with a brain biopsy needle could make brain surgery safer. Researchers from the University of Adelaide developed the medical device that will let surgeons "see" at-risk blood vessels as they insert the needle; this will potentially lessen fatal brain bleeds. The project is a collaboration with the University of Western Australia and Sir Charles Gairdner Hospital.



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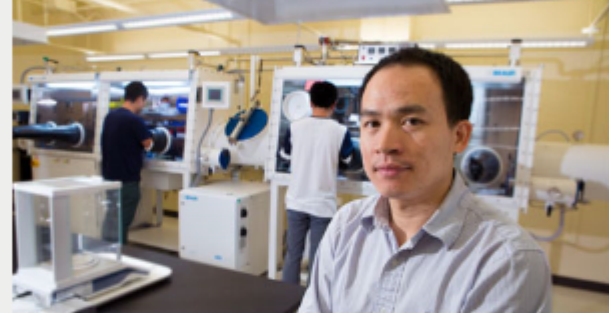
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### Novel Crystal Structure Could Be Used to Build LEDs, Lasers

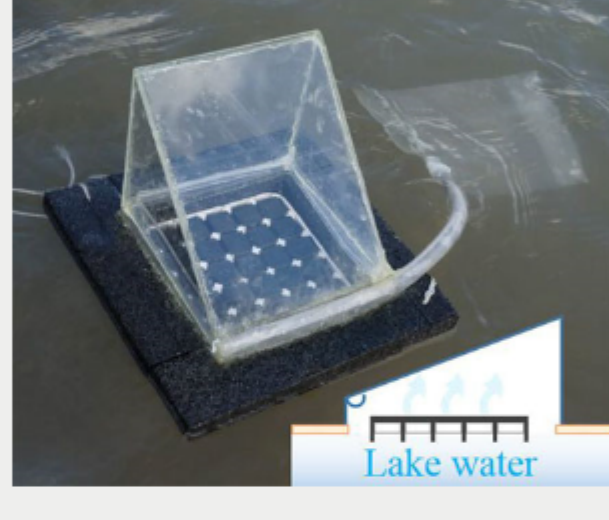
The discovery of a one-dimensional crystal structure that is highly photo luminescent could help facilitate the development of novel applications for optoelectronic devices such as LEDs, photovoltaic cells and lasers.



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### Solar-Powered Water Purifier Could Boost Water Security in Developing Regions

A solar still about the size of a mini-refrigerator, made from polystyrene foam and porous paper coated in carbon, could provide inexpensive, efficient access to clean water in developing regions and regions affected by natural disasters. A research team at the University at Buffalo has built a device called a "solar vapor generator," which cleans and/or desalinates water using heat converted from sunlight.



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## Industry Events

### 7th Annual Congress on Materials Research and Technology

February 20-21, 2017 - Sheraton Berlin Grand Hotel Esplanade - Berlin Germany  
 The 7th Annual Congress on Materials Research and Technology serves as a primary gathering, academy, industry, offering well-organized exhibitions, diverse symposiums, poster presentations as well as world-class scientific, diverse symposiums, workshops and B2B meetings. Sessions will cover various aspects of materials science, nanotechnology, biomaterials, polymers, ceramics, composites, metallurgy, materials chemistry, materials physics, energy materials, optical materials, magnetic materials, metals and alloys, smart materials and advanced materials. Professionals, industrialists and students from research areas of Materials Research and Nanotechnology will have the opportunity to share their knowledge, ideas and research experiences during interactive discussions and special sessions at the event.

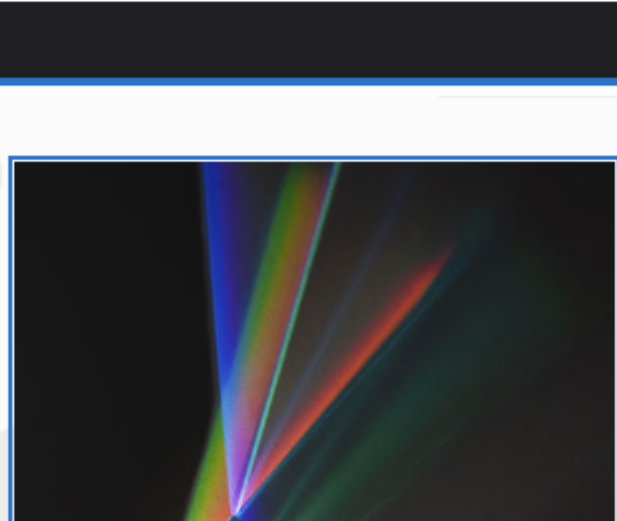


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## Webinars

### An Introduction to Back Illuminated sCMOS Cameras

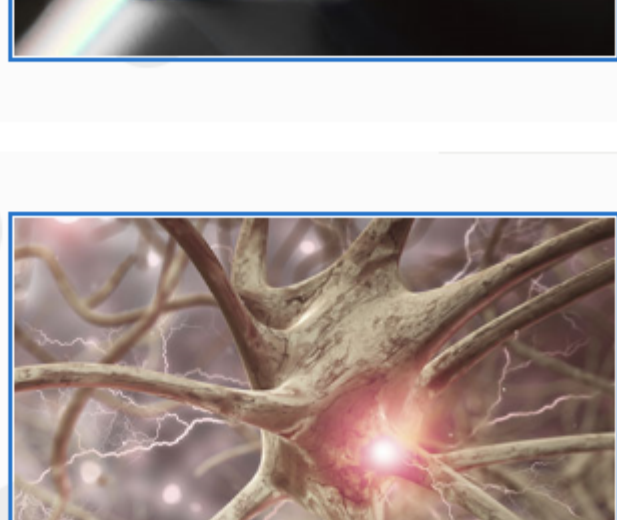
Tue, Feb 14, 2017 1:00 PM - 2:00 PM EST  
 Scientific CMOS (sCMOS) cameras are increasingly becoming detectors of choice for a range of quantitative imaging and spectroscopy applications. This webinar, presented by Princeton Instruments, will give you an overview of sCMOS camera technology and how it compares to CCD, EMCCD and ICCD low light imaging and spectroscopy detectors. Speaker Ravi Guntupalli, vice president of sales and marketing at Princeton Instruments, will discuss the key improvements of "back illuminated" sCMOS technology over previous generations; performance criteria for low light detectors; and how to select the optimum detector technology based on your application requirements. The webinar is aimed at both beginners and advanced users of various optical diagnostic techniques.



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### High-Speed Imaging At and Beyond the Diffraction Limit

Thu, Feb 16, 2017 1:00 PM - 2:00 PM EST  
 Hari Shroff, Ph.D., head of the Section on High Resolution Optical Imaging at the National Institute of Biomedical Imaging and Bioengineering (NIBIB), will speak on his lab's latest work to develop high-resolution optical methods for the study of live, dynamic, 3D samples, including efforts to improve structured illumination microscopy (SIM) and light-sheet microscopy, including new implementations of light-sheet microscopy that improve the spatial and temporal resolution of (dual-view) dSPIM.



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