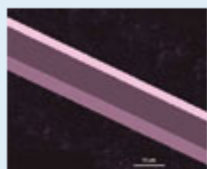


Highlights from the December 2012 issue of Photonics Spectra

Streak Cameras Improve Materials Research



New calibration options enable significant improvements in the accuracy of new and old devices, which could mean big advances in materials for LEDs and lasers. LEDs have numerous advantages over traditional light sources such as halogen or energy-saving lamps. They use electric power efficiently and, employed in combination with various-colored bodies, can be designed to provide an almost natural light. They are also completely jitter-free.

[FULL ARTICLE >>](#)

CMOS Sensors Increase Inspection Speed and Accuracy

As they get faster and offer higher resolution and sensitivity, CMOS sensors continue to impress the manufacturing industry. The main goal of any industrial inspection system is to increase manufacturing efficiency as measured by throughput, yield and number of product returns. Inspection systems are therefore pressed for continual improvements in speed, resolution and power consumption as well as capital cost.

[FULL ARTICLE >>](#)

Plastic Optics Provide Precision

Polymer optics are taking everyday applications by storm, thanks to advances that make plastic more and more competitive with glass. As materials, engineering design and tooling improved between the mid-1990s and the middle of the past decade, plastic grew to be common in more high-end optical applications, including fiber optics, biomedical devices, biometric scanning, and the displays and devices used in defense and homeland security.

[FULL ARTICLE >>](#)

Charge-Injection Devices Overcome Radiation Effects

An industry expert offers a primer on the advantages of charge-transfer-device imagers. In imaging devices, radiation normally affects certain key parameters - gate threshold voltage, field/channel stop threshold voltage, charge transfer efficiency, dark current and noise - but a charge-injection-device (CID) imager can overcome these radiation effects.

[FULL ARTICLE >>](#)

Surveillance System Enables 24-Hour Target Acquisition

A new multidetector system uses multiple-wavelength sensors and lasers for rangefinding, target spotting and target illumination. Multisensor detectors can be of great use to surveillance systems, whether they use intensified CCD, CMOS, InGaAs/short-wave infrared or long-wave infrared. These may be stand-alone systems or may incorporate a laser rangefinder, laser designator or laser illuminator.

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