Thursday, January 20, 2022

This Week in PHOTONICS

.: Top Stories

Cell-Located Device Makes Noninvasive Assessments of Electric Field

A nano-size, organic molecular device that can detect and manipulate its surrounding bioelectric field opens possibilities in biophotonics, specifically in wound healing and in the fight against diseases. The triangle-shaped device is made of two small, connected molecules that, together, are much smaller than a virus and similar in diameter to a DNA strand.

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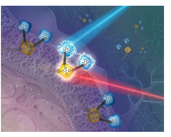

Sensor Could Make 3D Holograms a Feature in Mobile Devices

Researchers at the Korea Institute of Science and Technology (KIST) and Yonsei University are laying the groundwork for 3D digital holography on mobile devices. The group designed a photodiode that detects the polarization of light in the near-infrared region without the need for additional filters. Using this device, the researchers demonstrated miniaturized holographic image sensors for 3D digital holograms.

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Spectroscopy Method Could Raise Number of Viable Donor Kidneys

Researchers at the University of Shanghai for Science and Technology and the Changhai Hospital of Shanghai used label-free surface-enhanced Raman scattering (SERS) spectroscopy to quantitatively assess donor kidney quality, reportedly for the first time. The technique could be a valuable tool for clinicians to check donor kidney quality prior to transplantation, and to diagnose kidney problems in patients.

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.: Featured Products

Custom Thin-Film Coatings

Cascade Optical Corporation

Cascade Optical Corporation is a manufacturer of custom thin-film coatings with more than 40 years specializing in ion-assisted deposition, low-temperature, low-stress coatings. Our vast research and design experience, plus innovative techniques, will work for a wide diversification in the electro-optic communities.

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HyperFine Brillouin Spectrometer

LightMachinery Inc.

The great challenge with Brillouin spectroscopy is that the scattered signal from the un-shifted wavelength of the laser can overwhelm the small Brillouin shifted return signal. LightMachinery has combined its leading-edge HyperFine spectrometer with a very narrow band tunable filter to suppress the bright un-shifted laser frequency.

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Czochralski Crystal Growth Furnace

ECM USA Inc.

CYBERSTAR Czochralski pullers produce highly uniform, top quality crystals (research size to 100 kg with atmospheres from 0–100 bar vacuum) while being fully computerized for maximum yield & minimal supervision. Our patented automatic diameter control software assists in various crystal growth.

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871 Series Laser Wavelength Meter

Bristol Instruments Inc.

Bristol's popular 871 system measures laser wavelength at a sustained rate of 1 kHz, the fastest available. It also measures wavelength to an accuracy as high as ±0.0001 nm. By combining proven Fizeau etalon technology with automatic calibration, the most reliable accuracy is ensured for the most meaningful experimental results.

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.: Upcoming Webinars

Photon Counting for Low-Light Applications: SiPM, SPAD, SNSPD, PMT, TES, and Photon-Resolving Camera Technologies

Wed, Feb 16, 2022 1:00 PM - 2:00 PM EST

This webinar overviews six types of single-photon photodetectors for low-light conditions: photomultiplier tubes (PMTs), single-photon avalanche photodiodes (SPADs), silicon photomultipliers (SiPMs), superconducting nanowire single-photon detectors (SNSPDs), superconducting transition edge sensor (TES), and photon-resolving cameras. All of these detector technologies are becoming more popular as developers and suppliers aim toward satisfying the increasing demand for 'modern' photonic applications, including quantum computing, lidar, dark matter detection, and more. Presented by Hamamatsu Corporation.

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