Wednesday, December 18, 2019

euro PHOTONICS

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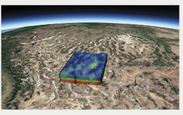
Newspace Launches Hyperspectral Imaging into Orbit



Half a century ago, the first Space Age was in full swing, funded by large government budgets and fueled by economic-political pressure to dominate space exploration. Today this movement has evolved into NewSpace — a revolution in the space industry in which private and nongovernment-backed entities worldwide are helping to develop faster, better, cheaper commercial space initiatives. In the last five to 10 years, thousands of NewSpace companies have poured billions of dollars into building new launchpads and launching hundreds of smaller, lighter satellites and space-based observation platforms into orbit, enabled by the miniaturization of inexpensive computers and optoelectronics.

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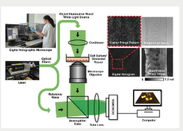
Digital Holographic Microscopy Enhances Cytometry and Histology



In recent years, quantitative phase imaging (QPI) has been continuously improved for purposes of high-resolution, label-free quantitative microscopy. Label-free imaging has received increased attention in the last decade as a minimally invasive way to observe proteins and cells, and to study the behavior and properties of biological specimens with minimized modification and sample preparation. Using noninvasive techniques means samples under investigation are not influenced by fluorophores or dyes, which can change the physiological processes or behavior of samples by causing cellular motility or migration. Moreover, because QPI requires only low light intensities for object illumination, the potential harm light could cause to a sample is minimized. Low light is a precondition for the long-term monitoring of living cells because high doses of light radiation can cause cell death or photo damage.

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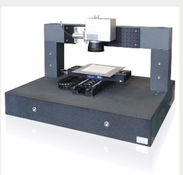
Laser Processing Brings Manufacturing to Next Level



One challenge for automation machine builders who want to introduce laser processing into their applications is how to strike a balance between precision, quality, and high throughput. Meeting this challenge requires motion systems capable of achieving exceptional levels of laser control by using fast, reliable automation networks, resulting in the merging of traditional programmable logic controller-based automation systems with high-performance motion controllers. The latest generation of these systems offers more flexibility, including simultaneous control of servo-based stages and galvanometer scanners, without the user needing to be a laser or automation expert.

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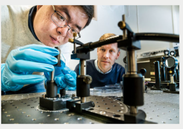
More News From Europe

Nanoantennas Made from Conductive Polymer for Tunable Nano-Optics



Optical nanoantennas, made from a conducting polymer instead of a traditional metal and developed by scientists at Linköping University, could enable a new type of controllable nano-optical component for use in various applications, such as smart windows and reflective displays. The nontraditional, organic material that was used can support localized surface plasmon resonances in the near-infrared and can function as a dynamic nano-optical antenna, with resonance behavior that is tunable by chemical redox.

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Graphene Composite Improves Photocatalytic Activity Used to Degrade Pollutants

Graphene Flagship partners developed a graphene-titania composite via a one-step procedure to widen and improve the applicability of "smog-eating" cement. The prepared composite showed enhanced photocatalytic activity, degrading up to 40% more pollutants than pristine titania in the model study, and up to 70% more pollutants in the case of nitrogen oxides (NOx). Organic pollutants, such as (NOx) and volatile compounds, are emitted mostly by vehicle exhausts and industry and are the primary cause of air pollution, the researchers said.

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Schneider Group Appoints Stuart Singer CEO of Schneider Optics

Jos. Schneider Optische Werke GmbH appointed Stuart Singer CEO of its subsidiary Schneider Optics Inc. (SOI), effective December 16, 2019. Singer will be based in Hauppauge, N.Y. In his new role, Singer will identify and develop new business opportunities for SOI, ensure sustainable growth, and maintain close coordination and cooperation with the group leadership in Germany and the board of directors.

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