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Thursday, May 1, 2014

LED System Simulates Sunlight Indoors



It is now possible to reap the benefits of sunlight without windows, or even going outside. In a project funded by the European Commission Horizon 2020 program, CoeLux Srl has developed CoeLux, a new system that simulates sunlight indoors using LEDs, an optical system and nanostructures.

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FEATURED VIDEO



Edmund Optics – TECHSPEC Cage System

Katie Walker, a Product Line Engineer at Edmund Optics, showcases Edmund Optics' Optical Cage System and how it can be used to build a digital video fluorescence microscope. The Optical Cage System is a collection of optomechanical components that can be used to easily construct complicated optical systems.

Brain Wave Control Could Improve Vision

A team of researchers has found that alpha waves, which characterize the brain's electrical activity while at rest, can influence vision.

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Perovskite-Based Solar Cells Gaining in Efficiency

Perovskites are showing promise as materials for a new generation of highly efficient, low-cost solar cells.

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Necsel Blue Laser

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The Necsel Blue Laser uses a direct emitting configuration to produce blue wavelengths at 445nm and 465nm with power ranging from 3W to 10W.

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Plasmonic Probes Help Quantify Breast Cancer Gene Segments

Hyperspectral imaging using plasmonic probes has been found to ferret out a specific genetic telltale for breast cancer within individual cells.

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Dual-Catalyst Technique Allows Better Control of Molecules

Researchers from the University of Wisconsin-Madison have discovered a way to create molecules with controlled chirality using sunlight as one of two catalysts.

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Simple Lens-Making Method Turns Phones into Dermoscopes

High-resolution silicon polymer lenses can be baked in conventional ovens and attached to smartphones to make an inexpensive microscope.

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In this edition of the industry's **premier weekly newscast**: An optogenetic switch turns neurons off, new lenses turn phones into dermoscopes, nanowires absorb and emit light, and plasmonic probes quantify breast cancer gene segments.

Microscopy Enables Detailed Insights into Mitochondria

A new microscopy technique combining confocal and two-photon excitation microscopy has given researchers insight into how the nervous system responds to disease and injury at the mitochondrial level.

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Optogenetic Switch Now Works Both Ways: On and Off

A team at Stanford University has re-engineered light-sensitive proteins to enable more efficient regulation of neuron cells' "off" switches.

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Femtosecond Lasers Control Chemical Reactions

Researchers in Vienna have succeeded in directly inducing the splitting of hydrocarbons such as into smaller fragments using pairs of femtosecond pulses.

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WHITE PAPER



Characterization to the Extremes: Terahertz materials characterization at cryogenic temperatures and high magnetic fields

Lake Shore Cryotronics, Inc.

In continuing pursuit of improved performance, higher processing speed, and more compact packaging, researchers spend considerable time identifying and characterizing novel and previously unexplored materials. Recently, the terahertz frequency range has emerged as a new frontier for materials science, helping to map out this unknown territory. This paper explores how THz energy can be used to gain insights into material properties, particularly under variable or extreme temperatures and magnetic fields.

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