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A Smarter Way to Use Sunlight: Array Pushes Solar Deep into Buildings

A pair of University of Cincinnati researchers want you to see the light — even if you're in an unlit, interior, windowless room. The new technology, called SmartLight, involves a narrow grid of tiny, electrofluidic cells self-powered by embedded photovoltaics and applied near the top of a window. These open-air "ducts" help sunlight to illuminate windowless work spaces deep inside office buildings. The grid can be applied to any building — big or small, old or new, residential or commercial — and the excess energy can be harnessed, stored and directed to other applications. "The SmartLight technology would be groundbreaking. It would be game-changing," said Anton Harfmann, an associate professor in UC's School of Architecture and Interior Design. "This would change the equation for energy. It would change the way buildings are designed and renovated. It would change the way we would use energy and deal with the reality of the sun. It has all sorts of benefits and implications that I don't think we've even begun to touch."

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FEATURED VIDEO

Adtech Optics - High-Power Quantum Cascade Laser

The DFB QCL 783 is a single-mode, high-power quantum cascade laser at 7.83 µm for high-sensitivity detection of critical greenhouse gases. It allows parts-per-billion-level detection of methane and nitrous oxide for applications such as pollution monitoring and emissions control, among others. AdTech Optics® (California, US) www.atoptics.com

Geodesy Applications Pursued for Atom Optics

An atom interferometer under development at NASA to measure gravitational ripples in space-time with picometer-level sensitivity could also advance geodesy, the science of measuring the Earth's size, shape and gravitational field.

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Michigan Photonics Group Now at 25 Members

Mi-Light, the state's new photonics industry group, achieved a milestone in October with the addition of its 25th member company or organization.

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Products on PhotonicsBuyersGuide.com

Large Fresnel Lens
RHK Japan
NTKJ's state-of-the-art 200-inch large Fresnel lens is made in Japan. NTKJ is capable of manufacturing Fresnel lenses up to 5000mm in diameter.
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Spectroscopy Without Compromises
Princeton Instruments
Imagine a spectrograph that sharply focuses data at every wavelength, allows the unrestricted use of large-format detectors, and directs photons to where they are supposed to go.
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Quark Thermal Camera Core
FLIR Systems
The Quark thermal camera core from FLIR represents a quantum leap in the design of compact, uncooled LWIR technology.
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UV Cold Mirrors
Newport Thin Film Laboratory
UV cold mirrors reflect UV energy while removing heat-producing visible and infrared energy. NTFL produces and stocks UV cold mirror reflectors on 0.020" aluminum sheet material.
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Multispectral Camera Detects Tumors During Surgery

A multispectral camera developed in Germany that simultaneously displays several fluorescent dyes and the reflectance image in real time could help surgeons ensure that they don't leave behind tiny pieces of malignant tumors.

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Dynasil Divests XRF Product Line

The company sold its x-ray fluorescence (XRF) lead paint detector product line to the US subsidiary of its longtime distributor Protec SA and used the proceeds to reduce its debt, part of its plan to emerge from default with creditors.

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Licensing Deal Signed on Laser Cladding Technology

South Africa's Council for Scientific and Industrial Research (CSIR) signed a licensing agreement with a US-based partner on a laser cladding technology developed at CSIR.

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On this edition of the industry's only weekly newscast: an array pushes solar deep into buildings, a special camera detects tumors, and a fiber optic switch is controlled by a single atom. Hosted by Photonics Media's Laura Marshall and Melinda Rose.

Microwaves Wirelessly Converted to Direct Current

A new device designed at Duke University using manmade, inexpensive materials operates as a power harvester with efficiency similar to solar panels but can wirelessly convert microwave signals into direct current voltage capable of recharging a cell phone battery or other small electronic device.

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Imaging Startup Closes Seed Funding Round

Quantitative imaging startup Phi Optics Inc. closed its seed funding round with $250,000 from venture capital groups.

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Rebellion Photonics Named 'WSJ Startup of the Year'

Hyperspectral imaging camera maker Rebellion Photonics won the Wall Street Journal's "Startup of the Year" inaugural competition. Rebellion was one of 24 startups chosen by WSJ editors from more than 500 applications to participate in the competition, which was the focus of a five-month documentary that premiered in June.

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Power Technology's iMAT® DPSS Laser Platform Ideal for Raman Spectroscopy

Power Technology, Inc.

Power Technology's iMAT® series of DPSS lasers are inherently beneficial to the Raman Spectroscopy industry because of its patented technology which inherently produces actively stabilized single frequency wavelengths at 532 nm and 1064 nm. This revolutionary technology earned international recognition by winning the Frost & Sullivan European Diode-Pumped Solid State Laser Technology Innovation of the Year award in 2009.

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Industry Events

EPIC Workshop on Biophotonics - November 27 - 28, 2013 · Maastricht University Medical Center, The Netherlands

EPIC, the industry association promoting the sustainable development of organizations working in photonics in Europe, will hold the workshop "Unmet Healthcare Needs as Opportunities for Technologies" Nov. 27 and 28 in Maastricht, Netherlands. The conference is divided into four sessions. Session 1, "Setting the Scene - Introductory Presentations," will include discussions on the technology and business landscape, developing new ways to fund biophotonics devices, and the regulatory environment for medical devices. Session 2 covers "Electronics & Optics for Point-of-Care Devices for Chronic and Infectious Diseases," while Session 3 encompasses "Photonics Components for Medical Imaging & Microscopy" and Session 4 pertains to "Unmet Health Care Needs as opportunities for Photonics Technologies."
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