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Découpe / Usinage

Lasers in solar cell manufacturing

Source(s) : Novus Light

"Laser processing established itself as a mainstream technology in the manufacturing of industrial standard solar cells. Various process steps are suitable for laser processing and have been commonly used in the past, such as via drilling, laser edge isolation, and the laser doped selective emitter process."

Lien(s) : http://www.novuslight.com/latest-processes-in-solar-cell-manufacturing_N5315.html

Date de publication : 18/04/2016

Fabrication additive / Fusion Laser

Fives-Michelin veut prendre 20% du marché mondial de l'impression 3D métallique

Source(s) : L'Usine Nouvelle

"La société commune de Fives et Michelin a dévoilé ses ambitions au salon Advanced Manufacturing Meetings de Clermont-Ferrand du 30 mai au 2 juin. Le nouveau spécialiste de l'impression 3D métallique, dont les premières machines seront livrées fin 2016, compte sur 20% de part de marché d'ici à 10 ans."

Lien(s) : http://www.usinenouvelle.com/editorial/fives-michelin-veut-prendre-20-du-marche-mondial-de-l-impression-3d-metallique.N394647

Date de publication : 02/06/2016

3D laser printing used to build micron-scale optics with superior performance

Source(s) : AZO Materials

"Researchers have proven that micron-scale optics can be 3D printed with exceptional performance and reproducibility. The method they used can be adapted to develop nearly any type of integrated optical element at the micron-scale or smaller, which could assist in the miniaturization of instruments and gadgets used in sensing to telecommunications applications."

Lien(s) : http://www.azom.com/news.aspx?newsID=45497

Date de publication : 21/04/2016

Researchers develop 3D laser writing technique for high quality micro-optics

Source(s) : 3ders

"A team of researchers based at the University of Stuttgart in Germany have recently published a study that demonstrates their capability to 3D print micron-scale optics with more precision and reproducibility than ever before. The recent breakthrough could have a big impact on the manufacturing of micro-scale integrated optical elements, and could contribute to further miniaturizing devices necessary for sensing or telecommunication applications."

Lien(s) : http://www.3ders.org/articles/20160420-researchers-develop-3d-laser-writing-technique-for-high-quality-micro-optics.html

Date de publication : 20/04/2016

Growth of 3D printing industry opens doors for superior material development, says Frost & Sullivan

Source(s) : 3ders

"As the 3D printing industry grows and the technology is gradually used in more and more types of production, the quest for developing new and innovative 3D printing materials becomes increasingly important. In following with this, American growth partnership company Frost & Sullivan has found that companies that supply materials must continue to move from a product-based approach to an end-industry based approach. In other words, rather than adopt a “one-material-fits all” strategy, 3D printing material suppliers should begin to focus on developing application-based material products."

Lien(s) : http://www.3ders.org/articles/20160331-growth-of-3d-printing-industry-opens-doors-for-superior-material-development-says-frost-sullivan.html

Date de publication : 01/04/2016

Marquage

Laser allows single-step marking on automotive glass

Source(s) : Industrial Laser Solutions

"Lasers have touched many segments of the auto industry, including metal cutting of chassis, welding of components, and selective removal of opaque material to reveal illumination on day/night displays. It is hard to imagine today's car without lasers playing a role in their manufacturing. One of the contributions is laser marking of glass—for example, on car windshields."

Lien(s) : http://www.industrial-lasers.com/articles/print/volume-31/issue-3/features/laser-allows-single-step-marking-on-automotive-glass.html

Date de publication : 13/05/2016

Mesure / métrologie

New laser to shine light on remote sensing

Source(s) : Science Daily

"A revolutionary new type of laser is promising major advances in remote sensing of greenhouse gases. The new work has shown that the new laser can operate over a large range within the infrared light spectrum."

Lien(s) : https://www.sciencedaily.com/releases/2016/04/160405093122.htm

Date de publication : 05/04/2016

Lasers detect bacterial growth in food quickly, accurately

Source(s) : Photonics

"A technique referred to as tunable diode laser absorption spectroscopy (TDLAS) enables fast, accurate and noninvasive measurement of bacteria levels in food, blood supplies and other products derived from living matter."

Lien(s) : http://www.photonics.com/Article.aspx?AID=59535

Date de publication : 05/04/2016

Soudage

Laser welding facilitates fusion of polymers

Source(s) : Industrial Laser Solutions

"Aside from conventional welding methods, laser fusion of plastics or polymers has established itself as a long-proven bonding method in many industries. This clean process offers numerous advantages to users, and enables fusion of sensitive assemblies. With few exceptions, laser fusion of polymers is a transmission process in which the components to be welded are overlapped."

Lien(s) : http://www.industrial-lasers.com/articles/print/volume-31/issue-3/features/laser-welding-facilitates-fusion-of-polymers.html

Date de publication : 19/05/2016

2µm lasers enable versatile processing of plastics

Source(s) : Industrial Laser Solutions

"Transparent and nontransparent plastics are weldable with high precision and efficiency."

Lien(s) : http://www.industrial-lasers.com/articles/print/volume-31/issue-3/features/2-mu-m-lasers-enable-versatile-processing-of-plastics.html

Date de publication : 13/05/2016

Source laser

Short, shorter, shortest: Diode lasers in the deep ultraviolet

Source(s) : Laser Focus World

"Numerous photonics applications in research and industry require ultraviolet (UV) laser light. Only a few types of conventional laser systems provide UV light, and those emit at fixed wavelengths. Here, we present the latest developments in diode-based laser systems that produce continuous-wave (CW) tunable UV output, in which digital control electronics allow for improved performance and user-friendliness.

Lien(s) : http://www.laserfocusworld.com/articles/print/volume-52/issue-06/features/novel-lasers-short-shorter-shortest-diode-lasers-in-the-deep-ultraviolet.html

Date de publication : 13/06/2016

Scientists use a frozen gas to boost laser light to new extremes

Source(s) : Nanowerk

"To observe something as small and fast as an electron rushing to form a chemical bond, you need a bright light with an incredibly small wavelength that comes in very fast pulses – just a few attoseconds, or billionths of a billionth of a second, long. Scientists figured out more than a decade ago how to make this specialized form of light through a process known as “high harmonic generation,” or HHG, which shifts laser light to much shorter wavelengths and shorter pulses by shining it through a cloud of gas. Now researchers at the Department of Energy’s SLAC National Accelerator Laboratory, Stanford University and Louisiana State University have achieved an even more dramatic HHG shift by shining an infrared laser through argon gas that’s been frozen into a thin, fragile solid whose atoms barely cling to each other."

Lien(s) : http://www.nanowerk.com/nanotechnology-news/newsid=43579.php

Date de publication : 07/06/2016

World's most efficient nanowire lasers

Source(s) : Nanowerk

"Known for their low cost, simple processing and high efficiency, perovskites are popular materials in solar panel research. Now, researchers demonstrated that nanowires made from lead halide perovskite are the most efficient nanowire lasers known (Nature Materials, "Lead halide perovskite nanowire lasers with low lasing thresholds and high quality factors")."

Lien(s) : http://www.nanowerk.com/nanotechnology-news/newsid=43711.php

Date de publication : 17/06/2016

Okinawa researchers fabricate simple, glass bottle-shaped microlasers

Source(s) : Laser Focus World

"Led by professor Síle Nic Chormaic, scientists from the Light-Matter Interactions Unit at the Okinawa Institute of Science and Technology Graduate University (OIST; Okinawa, Japan), have developed a new technique to fabricate glass microlasers and tune them using compressed air. Published in Scientific Reports, the new technique could pave the way for the simple serial production of glass microlasers and could be used in a wide range of applications, such as optical communications or biosensing."

Lien(s) : http://www.laserfocusworld.com/articles/2016/05/okinawa-researchers-fabricate-simple-glass-bottle-shaped-microlasers.html

Date de publication : 04/05/2016

High-energy Lasers: Extreme light in zeptoseconds

Source(s) : Laser Focus World

"Compressing petawatt and even higher-power laser pulses with tens of joules to the single-cycle level opens a floodgate of attosecond and zeptosecond applications, including giant tera-electron-volt per centimeter energy gradients, compact and efficient laser ion accelerators, and light materialization in a vacuum."

Lien(s) : http://www.laserfocusworld.com/articles/print/volume-52/issue-04/features/high-energy-lasers-extreme-light-in-zeptoseconds.html

Date de publication : 12/05/2016

Traitement de surface

Lotus leaf inspires scientists to create world's first self-cleaning metals

Source(s) : Nanowerk

"Taking their ideas from defense mechanisms found in plants such as the Lotus leaf, the 'High Throughput Laser Texturing of Self-Cleaning and Antibacterial Surfaces', or 'TresClean' project, has made a breakthrough that will enable the production of self-cleaning sheet metal on an industrial scale for the first time."

Lien(s) : http://www.nanowerk.com/nanotechnology-news/newsid=43802.php

Date de publication : 28/06/2016

Nanostructures increase the efficiency of electricity-producing photovoltaic cells

Source(s) : Nanowerk

"Sagrario Domínguez-Fernández, a Telecommunications engineer, has managed to increase light absorption in silicon by means of nanostructures etched onto photovoltaic cells. This increases the efficiency obtained in these electronic devices which are made of this element and which transform solar energy into electricity."

Lien(s) : http://www.nanowerk.com/nanotechnology-news/newsid=43605.php

Date de publication : 08/06/2016

Pulsed laser deposition system enables chip, material creation with larger patterning areas

Source(s) : Industrial Laser Solutions

"The University of Twente's MESA+ nanotechnology research institute (Enschede, The Netherlands) has purchased an advanced pulsed laser deposition (PLD) system from spinoff company Solmates, a research partner of the institute."

Lien(s) : http://www.industrial-lasers.com/articles/2016/05/pulsed-laser-deposition-system-enables-chip-material-creation-with-larger-patterning-areas.html

Date de publication : 23/05/2016

Laser treatment helps to better bond carbon fiber to aluminum for lightweight cars

Source(s) : Laser Focus World

"A laser surface-treatment process developed at Oak Ridge National Laboratory (ORNL; Oak Ridge, TN) for joining carbon fiber composites and aluminum for lightweight cars and other multimaterial high-end products can potentially replace the practice of preparing the surface of the materials by hand using abrasive pads, grit blasting, and environmentally harmful solvents. The result would be lower cost and higher robustness, because using a laser to remove layers of material from surfaces prior to bonding improves the performance of the joints and provides a path toward automation for high-volume use."

Lien(s) : http://www.laserfocusworld.com/articles/2016/05/laser-treatment-helps-to-better-bond-carbon-fiber-to-aluminum-for-lightweight-cars.html

Date de publication : 19/05/2016

Ultrafast lasers for ultra-small materials

Source(s) : Industrial Laser Solutions

"The upcoming era of nanomaterials brings new possibilities for extremely fast, efficient, and miniaturized devices. But processing these new nanomaterials, down to the single atomic layer, offers challenging technological difficulties. This article describes the application of ultrafast laser patterning to the atomic-scale, two-dimensional carbon lattice-namely graphene."

Lien(s) : http://www.industrial-lasers.com/articles/print/volume-31/issue-3/features/ultrafast-lasers-for-ultra-small-materials.html

Date de publication : 13/05/2016

From random to round with underwater laser melting

Source(s) : Nanotechweb

"Producing ultrathin, evenly deposited films is notoriously difficult. Now researchers have exploited discontinuous films with random roughness for synthesizing silver nanoparticles with a highly controlled size and shape. The approach uses pulsed laser melting, a technique that proves significantly more powerful underwater."

Lien(s) : http://nanotechweb.org/cws/article/tech/64570

Date de publication : 08/04/2016

Divers

CLEO 2016: Strong attendance, innovations

Source(s) : Novus Light

"The 2016 CLEO Conference and Exposition [Conference on Lasers and Electro-Optics] has concluded with 4600 attendees, 210 exhibitors and more than 2100 presentations from around the world."

Lien(s) : http://www.novuslight.com/cleo-2016-strong-attendance-innovations_N5731.html

Date de publication : 13/06/2016

Industrial Laser Market: Growth and challenges through 2020

Source(s) : Novus Light

"The report titled "Global Industrial Laser Market: Size, Trends & Forecasts (2016-2020)" provides an in-depth analysis of the worldwide industrial lasers market by value, market share by region as well as by players and division of market by product and by process."

Lien(s) : http://www.novuslight.com/industrial-laser-market-growth-and-challenges-through-2020_N5721.html

Date de publication : 09/06/2016

Introducing the disposable laser: Ultra-low-cost, easy to fabricate 'lasing capsules' made with inkjet printer

Source(s) : Phys.org

"Since lasers were invented more than 50 years ago, they have transformed a diverse swath of technology—from CD players to surgical instruments. Now researchers from France and Hungary have invented a way to print lasers that's so cheap, easy and efficient they believe the core of the laser could be disposed of after each use. The team reports its findings in the Journal of Applied Physics."

Lien(s) : http://phys.org/news/2016-05-disposable-laser-ultra-low-cost-easy-fabricate.html

Date de publication : 03/05/2016

Laser light exposes the properties of materials used in batteries and electronics

Source(s) : Phys.org

"Creating the batteries or electronics of the future requires understanding materials that are just a few atoms thick and that change their fundamental physical properties in fractions of a second. Cutting-edge facilities at SLAC National Accelerator Laboratory and Stanford University have allowed researchers like Aaron Lindenberg to visualize properties of these nanoscale materials at ultrafast time scales."

Lien(s) : http://phys.org/news/2016-04-laser-exposes-properties-materials-batteries.html

Date de publication : 21/04/2016

Highly accurate, laser guided industrial robot developed by Spanish researchers

Source(s) : 3ders

"A team of developers from the AITIIP research center in Zaragoza, Spain have built what is reported to be one of the world's largest robots. What is most notable about this robot, however, is its extreme accuracy of movement which, thanks to the help of a laser guided system, is within minus 0.4 mm when working on a 100 meter long part."

Lien(s) : http://www.3ders.org/articles/20160422-highly-accurate-laser-guided-industrial-robot-developed-by-spanish-researchers.html

Date de publication : 22/04/2016