

Revue de presse du



Janvier-Mars 2016

Réalisée par Claire EA, chargée de veille, le 5 avril 2016

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Découpe / Usinage

Direct diode vs. other laser systems used in laser cutting

Source(s) : Industrial Laser Solutions

"Recent interest in using direct-diode lasers rather than fiber or CO2 lasers is largely enabled by improvements in performance that now allow high-speed diode laser cutting of all relevant industrial metals. The combination of higher wall plug efficiency, together with improved reliability and ease of servicing, have long made direct-diode lasers the holy grail of laser materials processing companies, attracted also by the lower cost of manufacturing. This article shows the benefits over alternative lasers, with direct-diode lasers outperforming fiber lasers in cutting speed in many thin materials, particularly aluminum, and now meeting the cutting quality in thicker materials—the last realm of CO2 metal cutting systems."

Lien(s) : <http://www.industrial-lasers.com/articles/print/volume-31/issue-2/features/direct-diode-vs-other-laser-systems-used-in-laser-cutting.html>

Date de publication : 16/03/2016

Laser systems have use in large-diameter tube and pipe cutting

Source(s) : Industrial Laser Solutions

"Laser cutting small- (< 6in.) and medium-diameter tubes (< 12in.) is now a universally accepted industrial process. However, is laser tube cutting—specifically, when using a fiber laser—useful when it comes to large-diameter tubes? To find out the answer to this question, let us go to the Venetian hills in Italy, in the Prosecco wine region, to a company called Tubilaser (www.tubilaser.com). For more than 15 years, the company has been a supplier of structural steel tubing and laser-cut tubular components."

Lien(s) : <http://www.industrial-lasers.com/articles/print/volume-31/issue-2/features/laser-systems-have-use-in-large-diameter-tube-and-pipe-cutting.html>

Date de publication : 16/03/2016

Fiber laser allows processing of highly reflective materials

Source(s) : Industrial Laser Solutions

"Laser processing of highly reflective materials is important in current manufacturing environments. However, many types of laser technology suffer from inherent sensitivity to back-reflected light, which can cause an unstable process, disruptive automatic shutdowns, or even catastrophic failure of the laser. A new generation of fiber lasers addresses these limitations with high-performance components and a novel architecture that enables uninterrupted processing of highly reflective materials."

Lien(s) : <http://www.industrial-lasers.com/articles/print/volume-31/issue-2/features/fiber-laser-allows-processing-of-highly-reflective-materials.html>

Date de publication : 16/03/2016

Honda: Laser cutting saves time, money

Source(s) : Autonews

"Honda Motor Co. is rolling out a new laser cutting method for body panel parts that is more flexible than traditional stamping, enabling the Japanese carmaker to make small-batch, niche vehicles more profitably."

Lien(s) : <http://www.autonews.com/article/20160314/OEM01/303149975/honda-laser-cutting-saves-time-money>

Date de publication : 14/03/2016

Industrial lasers process fiber reinforced plastics

Source(s) : Photonics

"Laser-based technologies that overcome the challenges of processing composite materials — which offer high strength and light weight — hold promise for the automotive and aviation sectors, as well as new applications. Composite materials such as CFRP and GFRP (carbon- and glass-fiber-reinforced polymer, respectively) are becoming staples of industrial series production, but the materials are difficult to work with. Now the Fraunhofer Institute for Laser Technology (ILT) has developed a range of laser-based technologies for processing composite materials, enabling short cycle times and consistent quality."

Lien(s) : <http://www.photonics.com/Article.aspx?AID=58440>

Date de publication : 11/03/2016

Lectra launches breakthrough laser airbag cutting technology

Source(s) : Industrial Laser Solutions

"Integrated technology solutions provider Lectra (Paris, France) has unveiled a breakthrough airbag laser cutting technology dubbed FocusQuantum. With an aim to deliver the best-quality airbags to car manufacturers at the right price and time, the cutting-driven process makes zero-defect production possible."

Lien(s) : <http://www.industrial-lasers.com/articles/2016/01/lectra-launches-breakthrough-laser-airbag-cutting-technology.html>

Date de publication : 19/01/2016

Fiber laser cutting reduces job time from four days to six hours

Source(s) : Industrial Laser Solutions

"Wheeler Fabrications (Witton, West Midlands, England), established 35 years ago as a factory maintenance firm, gradually moved into sheet metal work. A 2013 move into its present premises increased the floor area available for production and provided additional space for installation of a 3kW Bystronic BySprint Fiber 3015 cutting machine that has taken over from an older CO2 laser. This change dramatically raises productivity and product consistency, and allows the company to reduce both lead times and costs to customers."

Lien(s) : <http://www.industrial-lasers.com/articles/2016/01/fiber-laser-cutting-reduces-job-time-from-four-days-to-six-hours.html>

Date de publication : 07/01/2016

Fabrication additive / Fusion Laser

Selective Laser Melting (SLM) process works with difficult materials

Source(s) : Novus Light; Industrial Laser Solutions

"A special processing technique now allows Selective Laser Melting (SLM) to be used with more difficult materials such as magnesium alloys, copper alloys, and other crack-prone, difficult-to-weld metals. The use of these materials makes it possible to employ the SLM process in new application areas."

Lien(s) : http://www.novuslight.com/selective-laser-melting-slm-process-works-with-difficult-materials_N5358.html

<http://www.industrial-lasers.com/articles/2016/03/selective-laser-melting-method-works-with-magnesium-alloys.html>

Date de publication : 01/03/2016

Modified laser cutter prints 3-D objects from powder

Source(s) : ECN Mag

"Rice University bioengineering researchers have modified a commercial-grade CO2 laser cutter to create OpenSLS, an open-source, selective laser sintering platform that can print intricate 3-D objects from powdered plastics and biomaterials. The system costs at least 40 times less than its commercial counterparts and allows researchers to work with their own specialized powdered materials."

Lien(s) : <http://www.ecnmag.com/news/2016/02/modified-laser-cutter-prints-3-d-objects-powder>

Date de publication : 22/02/2016

Researchers outline physics of metal 3-D printing

Source(s) : Phys.org

"The powder bed fusion process, also known as selective laser melting (SLM), requires thin layers of a metal powder to be spread across a build area, where they are fused by a laser or electron beam based on a 3D computer-aided design (CAD) model. The process is repeated until a part is produced, layer-by-layer from the bottom up. Even though the method has quickly progressed into a production technology, 3D printing of metal parts (also known as metal additive manufacturing) for industries such as aerospace and health care is hampered, according to LLNL's Wayne King, by a lack of confidence in the finished parts. This hurdle, he said, can be overcome by a combination of physics-based modeling and high-performance computing to determine the optimal parameters for building each part."

Lien(s) : <http://phys.org/news/2016-01-outline-physics-metal-d.html>

Date de publication : 15/01/2016

Impression 3D : Sculpteo dévoile le matériau le plus souple au monde

Source(s) : Industrie & Technologies

"Sculpteo, le spécialiste de l'impression 3D en ligne, a profité du CES 2016 pour dévoiler un plastique souple qu'il a fait développer spécifiquement pour l'impression 3D par frittage laser. Ce polyuréthane permet de réaliser des objets fonctionnels avec une dureté Shore A de 65. Avec ces caractéristiques, ce plastique souple est capable de reproduire par exemple la rigidité et la souplesse des organes humains, les performances des pneumatiques automobiles ou la finesse d'un textile."

Lien(s) : <http://www.industrie-techno.com/impression-3d-sculpteo-devoile-le-materiau-le-plus-souple-au-monde.41925>

Date de publication : 12/01/2016

Marquage

Picosecond lasers enable novel marking techniques

Source(s) : Industrial Laser Solutions

"The availability of industrialized ultrafast (picosecond and femtosecond) lasers is impacting many fields, including marking. The athermal processing properties of their short pulses often deliver superior results."

Lien(s) : <http://www.industrial-lasers.com/articles/print/volume-31/issue-2/departments/update/picosecond-lasers-enable-novel-marking-techniques.html>

Date de publication : 16/03/2016

How to make a low-cost yet high-precision glass nanoengraving

Source(s) : nanowerk

"In a joint study, scientists from the MIPT (Moscow Institute of Physics and Technology), ICP (Institute of Chemical Physics) named after Semenov, MSU (Moscow State University) and IPCP (Institute of Problems of Chemical Physics) have developed a mechanism of laser deposition of patterns on glass with a resolution of 1000 times lower than the width of a human hair. Focusing the laser was conducted with the help of small glass spheres, playing the role of the lens. This mechanism allows inexpensively and relatively easy to apply complex patterns to a glass surface, whereby obtaining a spatial resolution of less than 100 nanometers."

Lien(s) : <http://www.nanowerk.com/nanotechnology-news/newsid=42347.php>

Date de publication : 15/01/2016

Mesure / métrologie

Laser confocal microscopy: Challenging the limits of measuring surface roughness

Source(s) : Photonics

"3D imaging and ultra-high resolution are ideal for the inspection of materials with defined surface finishes and textures."

Lien(s) : <http://www.photonics.com/Article.aspx?AID=58301>

Date de publication : 11/02/2016

Source laser

Laser beams with a 'twist'

Source(s) : Phys.org

"Nature Photonics today published research by a team from South Africa and Italy demonstrating a new type of laser that is able to produce laser beams 'with a twist' as its output. The outputs and superpositions of the new type of laser form a set of beams, called vector vortex beams. Using geometric phase inside lasers for the first time, the work opens the way to novel lasers for optical communication, laser machining and medicine."

Lien(s) : <http://phys.org/news/2016-03-laser.html>

Date de publication : 15/03/2016

Solar cell materials adapted into nanowire lasers

Source(s) : Photonics

"Next-generation solar cell material have been adapted into 200-nm nanowire lasers that produce bright, stable laser light, which could enable optoelectronic devices."

Lien(s) : <http://www.photonics.com/Article.aspx?AID=58396>

Date de publication : 02/03/2016

New laser achieves wavelength long sought by laser developers

Source(s) : Phys.org

"Researchers at the University of Bath, United Kingdom have created a new kind of laser capable of pulsed and continuous mid-infrared (IR) emission between 3.1 and 3.2 microns, a spectral range that has long presented a major challenge for laser developers. The achievement could aid in the development of new uses for mid-IR lasers, which are currently used in applications such as spectroscopy, environmental sensing and detecting explosives."

Lien(s) : <http://phys.org/news/2016-02-laser-wavelength-sought.html>

Date de publication : 24/02/2016

Growing nanowire lasers right on a silicon chip

Source(s) : Nanowerk News

"Physicists at the Technical University of Munich (TUM) have developed a nanolaser, a thousand times thinner than a human hair. Thanks to an ingenious process, the nanowire lasers grow right on a silicon chip, making it possible to produce high-performance photonic components cost-effectively. This will pave the way for fast and efficient data processing with light in the future."

Lien(s) : <http://www.nanowerk.com/nanotechnology-news/newsid=42600.php>

Date de publication : 11/02/2016

Industrial fiber beam delivery enhances ultrafast laser machining

Source(s) : Industrial Laser Solutions

"Fiber-optic beam delivery has been the key enabler for wide industrial application of high-power solid-state continuous-wave (CW) lasers. Until recently, fiber-optic beam delivery could not be used with ultrafast lasers. Now, microstructured hollow-core fibers make it possible to confine the laser light inside a small hollow core, and transmit pico- and femtosecond pulses of high energy with excellent beam quality. Packaged into a rugged laser-light cable, this is likely the start of a new era in laser beam delivery."

Lien(s) : <http://www.industrial-lasers.com/articles/print/volume-31/issue-1/features/industrial-fiber-beam-delivery-enhances-ultrafast-laser-machining.html>

Date de publication : 03/02/2016

Traitement de surface

Engineers adapt laser method to create micro energy units

Source(s) : Science Daily

"As the demand for thinner microelectronic devices increases, manufacturers often are limited by how oddly shaped the energy sources must become to make them conform to the smaller space. Now, researchers have developed a method of transferring an energy source to virtually any shape. Using direct laser-writing techniques, scientists can help smartphone manufacturers fabricate energy storage units such as micro fuel cells that are environmentally friendly, highly designable and thin."

Lien(s) : <https://www.sciencedaily.com/releases/2016/03/160321123819.htm>

Date de publication : 21/03/2016

Nanolithography: Laser bubble-pen lithography patterns colloidal nanoparticles

Source(s) : Laser Focus World

"A unique method developed by researchers at the University of Texas at Austin uses a much-lower-power laser to create a microbubble at the interface between a plasmonic substrate and the liquid solution containing colloidal nanoparticles. This "bubble pen" uses convection, surface tension, and gas pressure to draw particles towards the bubble. Arbitrary patterns with different resolutions and architectures can be optically written on the substrate through this bubble-pen lithography (BPL) technique."

Lien(s) : <http://www.laserfocusworld.com/articles/print/volume-52/issue-02/world-news/nanolithography-laser-bubble-pen-lithography-patterns-colloidal-nanoparticles.html>

Date de publication : 16/02/2016

Laser cladding strengthens industrial components

Source(s) : Novus Light

"Virtually every manufacturing sector, from heavy equipment to microelectronics, is pursuing the same overarching goal of reducing production costs while simultaneously improving yield and final product quality. Lasers are powering this trend in many industries because of their ability to perform highly precise, non-contact processing. Cladding, in particular, is a process that achieves these ends; this article explores how one Austrian company has implemented a Coherent laser system for cladding of industrial metal parts."

Lien(s) : http://www.novuslight.com/laser-cladding-strengthens-industrial-components_N5274.html

Date de publication : 16/02/2016

Market Insights: Rear-side passivation layers provide laser suppliers with first real opportunity in solar industry

Source(s) : Laser Focus World

"This article reviews the [solar industry landscape](#) at the start of 2016, identifies the key factors driving PV manufacturing technology, and considers the different issues impacting the near-term technology roadmap. The role of laser-based processes and tool suppliers is discussed in relation to these themes, including an explanation of why laser-based equipment has yet to truly impact solar cell manufacturing."

Lien(s) : <http://www.laserfocusworld.com/articles/print/volume-52/issue-01/columns/market-insights/rear-side-passivation-layers-provide-laser-suppliers-with-first-real-opportunity-in-solar-industry.html>

Date de publication : 01/02/2016

Divers

Business Forum: Industrial laser markets in China - changing and still growing

Source(s) : Laser Focus World

"I attended the 2016 Lasers & Photonics Marketplace Seminar in San Francisco and found it very informative. Here, I will summarize what I have learned from Dr. Bo Gu in his informative speech titled "The Changing Laser Market in China," to which I have added my own commentary, with his review."

Lien(s) : <http://www.laserfocusworld.com/articles/print/volume-52/issue-03/columns/business-forum/industrial-laser-markets-in-china-changing-and-still-growing.html>

Date de publication : 18/03/2016

Germany and Israel collaborate on laser of unrivalled precision

Source(s) : Eureka

"In an extraordinary example of long-distance collaboration, SMEs from Berlin and Kibbutz Einat have joined forces to develop new laser technology that will be used in the precision manufacture of next-generation electronic components including processors, screens and solar panels."

Lien(s) : <http://www.eurekanetwork.org/content/germany-and-israel-collaborate-laser-unrivalled-precision>

Date de publication : 11/03/2016

The future for industrial laser materials processing

Source(s) : Industrial Laser Solutions

"New laser technologies and emerging markets should support high single-digit growth rates in the long term."

Lien(s) : <http://www.industrial-lasers.com/articles/print/volume-31/issue-1/features/the-future-for-industrial-laser-materials-processing.html>

Date de publication : 22/02/2016

How laser technology enables car efficiency

Source(s) : Industrial Laser Solutions

"Laser technology is an important key to reducing CO2 emissions in passenger cars. A multitude of laser-based innovations for automobile production contribute to achieving this goal, and this article provides an overview of them."

Lien(s) : <http://www.industrial-lasers.com/articles/print/volume-31/issue-1/features/how-laser-technology-enables-car-efficiency.html>

Date de publication : 02/02/2016

Scientists create laser-activated superconductor

Source(s) : Science Daily

"Shining lasers at superconductors can make them work at higher temperatures, suggests new findings from an international team of scientists including the University of Bath."

Lien(s) : <http://www.sciencedaily.com/releases/2016/02/160208134442.htm>

Date de publication : 09/02/2016

Laser Apollon : record mondial de puissance attendu en 2016

Source(s) : Enerzine

"Apollon est un laser conçu pour atteindre la puissance encore inégalée de 10 pétawatts (PW). Fin 2016, il sera déjà le laser le plus puissant au monde. En 2018, l'installation complète ouvrira à la communauté internationale, pour des recherches sur la physique à très haute intensité : générer des sources de protons ou d'électrons accélérés à des vitesses proches de celle de la lumière, étudier l'interaction rayonnement-matière à des intensités extrêmes ou reproduire en laboratoire des mécanismes astrophysiques violents (comme les supernovae, les pulsars ou les sursauts gamma), sonder la matière avec une résolution temporelle ultime, ou encore explorer les propriétés physiques du vide. Avec, à la clé de ces recherches, des applications sociétales potentielles en médecine (imagerie, traitement des cancers) ou dans le traitement des déchets nucléaires."

Lien(s) : <http://www.enerzine.com/14/19044+laser-apollo---record-mondial-de-puissance-attendu-en-2016+.html>

Date de publication : 02/02/2016

Markets in flux, lasers steady

Source(s) : Laser Focus World

"Global financial markets have continued their tumultuous ways, so it's reassuring that photonics in general, and especially lasers, have followed steadier paths for growth and integration into a multitude of products and applications. As our annual Laser Market Review & Forecast reports in this issue, total global laser sales should increase by 4.2% in 2016, reaching \$10.5 billion. Each segment of the laser market faces its own dynamics, of course, with lasers for materials processing and lithography the largest, followed by communications and optical storage and R&D and military."

Lien(s) : <http://www.laserfocusworld.com/articles/print/volume-52/issue-01/columns/editor-s-desk/markets-in-flux-lasers-steady.html>

Date de publication : 01/02/2016

Ultrafast-laser startup Novae gets 1 million Euros in financing

Source(s) : Laser Focus World

"[Novae](#) (Saint Martin le Vieux, France), a startup company that develops and manufactures ultrafast pulsed lasers for scientific, industrial, and medical applications, has closed a financing round for 1 million Euros through investment Funds including IRDInov (Toulouse), DYNALIM (Limoges), and Finance Utile (a crowdfunding platform). This financing round has also been subscribed by historical Novae's shareholders and Limousin Business Angels (Limoges)."

Lien(s) : <http://www.laserfocusworld.com/articles/2016/01/ultrafast-laser-startup-novae-gets-1-million-euros-in-financing.html>

Date de publication : 18/01/2016

Edition 2016 - Annuaire des adhérents du CLP

Source(s) : Club Laser et Procédés

"Comme chaque année, un nouvel annuaire des membres du Club Laser et Procédés (CLP) est publié.

Pour le télécharger : [annuaire CLP édition 2016](#)."

Lien(s) : <http://procedes-laser.over-blog.com/2016/01/edition-2016-annuaire-des-adherents-du-clp.html>

Date de publication : 11/01/2016