

Revue de presse du



Juillet-Septembre 2016

Réalisée par Claire EA, référente Veille et Intelligence économique

Le 3 octobre 2016

DÉCOUPE / USINAGE	3
Industry working group for process control in laser material processing launches	3
Sculpteo, spécialiste de l'impression 3D, se diversifie dans la découpe laser	3
Industrial Lasers: Beam shaping enables new ultrafast laser manufacturing applications	3
Inexpensive ceramic laser has uses in cutting and engraving composite materials	4
Fiber laser cutting drives a power revolution	4
Coup de projecteur sur les usines du futur	4
FABRICATION ADDITIVE / FUSION LASER	5
GE se renforce dans la fabrication additive métallique	5
Taiwan researchers 3D print magnesium battery three times more powerful than lithium, nickel batteries	5
Femtosecond lasers combine additive and subtractive manufacturing	5
Additive manufacturing technique extends life of sensors.....	6
Advancement in practical use of laser fusion.....	6
MARQUAGE	6
How laser surfacing relates to laser marking	6
MESURE / MÉTROLOGIE.....	7
New industrial sorting systems based on laser spectroscopy (LIBS), magnetic induction, and machine vision for recycling of non-ferrous metals	7

Une machine à mesurer unique en France entre au Cetim	7
New sensor measures aircraft velocity by bouncing lasers off air molecules.....	7
Mid-infrared laser System could detect atmospheric chemicals.....	8
SOUDAGE.....	8
Sheet metal laser welding helps job shops compete globally	8
SOURCE LASER	8
Un projet financé par l'UE agite le secteur des lasers	8
Trends in Cascade Laser applications	9
LLNL researchers new metal 3D printing techniques could revolutionize laser design.....	9
TRAITEMENT DE SURFACE.....	9
Laser system strips paint from full-size aircraft.....	9
Laser-treated graphene enables paper-based electronics	10
Laser treatment helps to better bond carbon fiber to aluminum for lightweight cars.....	10
Ultrafast laser radiation can structure fiber-reinforced components and remove their coatings.....	10
DIVERS	11
Newsletter du Club Laser et Procédés	11
[Pépite à suivre] Almae Technologies industrialise des lasers high tech	11
Ophthalmic lasers market set to grow	11
Market Insights: Fifty years of the laser – A Coherent view.....	12
Inexpensively engineered longer crystals for lasers	12
Materials Processing: When laser measurements absolutely must be made.....	12
Ultra-long lasers challenge conventional knowledge about laser technology	13

Découpe / Usinage

Industry working group for process control in laser material processing launches

Source : Industrial Laser Solutions

"At the International Laser Technology Congress (AKL'16), held May 2016 in Aachen, Germany, interest in the topic of process control was greater than expected. Appropriately, the event was also used to launch the Industry Working Group for Process Control in Laser Material Processing. The group provides a forum for representatives from industry and research to initiate pre-competitive projects and discuss issues such as standards, potential cost savings, and feasibility."

Lien : <http://www.industrial-lasers.com/articles/2016/09/industry-working-group-for-process-control-in-laser-material-processing-launches.html>

Date de publication : 26/09/2016

Sculpteo, spécialiste de l'impression 3D, se diversifie dans la découpe laser

Source : L'Usine Nouvelle

"Sculpteo, la start-up de Villejuif (Val-de-Marne) spécialisée dans l'impression 3D en ligne, complète son offre avec la découpe laser."

Lien : <http://www.usinenouvelle.com/article/sculpteo-specialiste-de-l-impression-3d-se-diversifie-dans-la-decoupe-laser.N434107>

Date de publication : 08/09/2016

Industrial Lasers: Beam shaping enables new ultrafast laser manufacturing applications

Source : Laser Focus World

"The beam intensity profile can be adjusted in x-, y-, and z-directions, benefiting applications such as hot-dipped galvanized materials processing and separating synthetic sapphire and glass."

Lien : <http://www.laserfocusworld.com/articles/print/volume-52/issue-08/features/industrial-lasers-beam-shaping-enables-new-ultrafast-laser-manufacturing-applications.html>

Date de publication : 11/08/2016

Inexpensive ceramic laser has uses in cutting and engraving composite materials

Source : Industrial Laser Solutions

"A team of researchers at the Moscow Institute of Physics and Technology (MIPT; Moscow, Russia) and collaborators has developed a compact, powerful ceramic-based laser that will have utility in cutting and engraving composite materials, among other uses."

Lien : <http://www.industrial-lasers.com/articles/2016/07/inexpensive-ceramic-laser-has-uses-in-cutting-and-engraving-composite-materials.html>

Date de publication : 29/07/2016

Fiber laser cutting drives a power revolution

Source : Industrial Laser Solutions

"For over 30 years, carbon-dioxide (CO₂) lasers have reached what seems like a threshold of power and capability, with the majority of CO₂ laser machines being purchased in the 4–5kW range (with occasional 6kW versions purchased). It took approximately 15 years before 3kW CO₂ laser sales became common, and another five years or so before 4kW became the main power choice of end users. Higher-power CO₂ lasers (6kW and higher) have been available for many years, going back into the 1990s. And while sales of high-power CO₂ lasers increased slightly in the 2000s, they never approached the volume of sales in the 4–5kW range. There are good reasons for that—and when one looks at benefit vs. cost, it becomes a little clearer as to why."

Lien : <http://www.industrial-lasers.com/articles/print/volume-31/issue-4/features/fiber-laser-cutting-drives-a-power-revolution.html>

Date de publication : 15/07/2016

Coup de projecteur sur les usines du futur

Source : Cordis

"[...] il n'y pas de modèle universel de laser, chaque procédé et matériau requiert un laser spécifique. Pour que l'industrie européenne soit compétitive au plan international, elle a besoin d'une génération d'outils laser plus adaptable. Le projet HALO s'est fixé comme objectif de réussir cette avancée."

Lien : http://cordis.europa.eu/news/rcn/125780_fr.html

Date de publication : 13/07/2016

Fabrication additive / Fusion Laser

GE se renforce dans la fabrication additive métallique

Source : Industrie & Technologies

"Le groupe industriel américain GE va déboursier 1,4 milliard de dollars pour acquérir deux entreprises spécialisées dans la fabrication additive en métal, la suédoise Arcam AB et l'allemande SLM Solutions AG. Une façon d'accélérer la diffusion des technologies d'impression 3D dans le groupe."

Lien : <http://www.industrie-techno.com/ge-se-renforce-dans-la-fabrication-additive-metallique.45264>

Date de publication : 06/09/2016

Taiwan researchers 3D print magnesium battery three times more powerful than lithium, nickel batteries

Source : 3ders

"Just what can't be 3D printed? Back in February, a team of Irish researchers revealed that even batteries are on the menu, when they were awarded an ERC grant to develop [3D printed nanobatteries](#). But a team of researchers from the National Cheng Kung University in Taiwan are already one step further, as they have just 3D printed a magnesium battery. Smaller than conventional batteries, it is up to three times more efficient than lithium or nickel alternatives thanks to the ability to store more power and charge very rapidly. What's more, it is produced in a matter of minutes, rather than hours."

Lien : <http://www.3ders.org/articles/20160901-taiwan-researchers-3d-print-magnesium-battery-three-times-more-powerful-than-lithium-nickel-batteries.html>

Date de publication : 01/09/2016

Femtosecond lasers combine additive and subtractive manufacturing

Source : Laser Focus World

"Most 3D printing or laser additive manufacturing (AM) systems use continuous-wave (CW) lasers. However, researchers at PolarOnyx (San Jose, CA) are pioneering AM instruments that use femtosecond pulsed lasers to create 3D objects from high-temperature materials. Furthermore, the well-known athermal ablation properties of ultrafast lasers can simultaneously accomplish subtractive manufacturing in one computer-controlled scanning process for combined additive/subtractive manufacturing that doubles the system's capability and increases productivity without adding cost."

Lien : <http://www.laserfocusworld.com/articles/print/volume-52/issue-08/newsbreaks/femtosecond-lasers-combine-additive-and-subtractive-manufacturing.html>

Date de publication : 29/08/2016

Additive manufacturing technique extends life of sensors

Source : Novus Light

"An additive manufacturing technique called DMD (Direct Metal Deposition) developed by [O.R. Lasertechnologie](#) in Dieburg, Germany enables reliable protection of sensor elements by means of a hard alloy. It makes it possible to significantly extend their lifetimes, for example in pipelines of the oil and gas industry."

Lien : http://www.novuslight.com/additive-manufacturing-technique-extends-life-of-sensors_N5897.html

Date de publication : 05/08/2016

Advancement in practical use of laser fusion

Source : Novus Light

"The Graduate School for the Creation of New Photonics Industries, Toyota Motor Corporation and [Hamamatsu Photonics K.K.](#) have announced the discovery of a new efficient heating mechanism for fusion fuel by irradiating opposed two beams in three steps (total: six beams) with lasers installed opposite each other with fusion fuel between them. This achievement shows that a compact device has a potential to make fusion fuel compressed, heated and ignited with less number of lasers than large scale laser fusion fuel facilities, which advances the practical use of laser fusion."

Lien : http://www.novuslight.com/advancement-in-practical-use-of-laser-fusion_N5871.html

Date de publication : 28/07/2016

Marquage

How laser surfacing relates to laser marking

Source : Industrial Laser Solutions

"Aluminum, copper, and their alloys are widely used across almost every industry and can be laser-marked, but obtaining a low-heat, dark mark with high contrast visible to the unaided human eye on these metals can sometimes be challenging. A technique has been demonstrated showing that highly transmissive materials can also be marked and textured with minimal damage in a pulse-duration regime not normally associated with this unexpected nonlinear behavior."

Lien : <http://www.industrial-lasers.com/articles/print/volume-31/issue-4/features/how-laser-surfacing-relates-to-laser-marking.html>

Date de publication : 21/07/2016

Mesure / métrologie

New industrial sorting systems based on laser spectroscopy (LIBS), magnetic induction, and machine vision for recycling of non-ferrous metals

Source : Cordis

"SMEs and research organisations in the EU-funded SHREDDERSORT project have developed and demonstrated a new industrial sorting system to separate non-ferrous shredder scrap into cast aluminium (Al), wrought Al, and non-Al categories. Compared to the unsorted material, the sorted categories are better suited for recycling into secondary metals, have a higher market value, and will reduce the use of raw materials."

Lien : http://cordis.europa.eu/news/rcn/134556_en.html

Date de publication : 25/07/2016

Une machine à mesurer unique en France entre au Cetim

Source : Cetim

"En alliant très haute précision et technologie multicapteurs, la machine à mesurer qui vient d'être installée à Senlis peut combiner divers types de capteurs pour alimenter un modèle unique. A la clé, des débouchés nombreux, notamment dans l'aéronautique et le médical."

Lien : <http://www.cetim.fr/fr/Actualites/En-France/A-la-une/Une-machine-a-mesurer-unique-en-France-entre-au-Cetim>

Date de publication : 19/07/2016

New sensor measures aircraft velocity by bouncing lasers off air molecules

Source : Gizmag

"British defense and aerospace company BAE Systems has come up with some interesting technology over the years, including armored vehicles that used Formula 1 suspension tech, and army helmets that use bone conduction for comms. Now, it's looking to improve how we measure airspeed, replacing conventional, air-pressure-based systems with tech that bounces around ultraviolet lasers to get the job done."

Lien : <http://www.gizmag.com/bae-uv-laser-air-speed-sensor/44352/>

Date de publication : 15/07/2016

Mid-infrared laser System could detect atmospheric chemicals

Source : Novus Light

"Researchers at the [Massachusetts Institute of Technology](#) (MIT) in collaboration with researchers in Binghamton, New York (US) and Hamburg, Germany, have developed a new system that uses mid-infrared, ultra-fast pulsed lasers to turn regions of molecules in the open air into glowing filaments of electrically charged gas, or plasma. The new method could enable remote environmental monitoring to detect a wide range of chemicals with high sensitivity."

Lien : http://www.novuslight.com/mid-infrared-laser-system-could-detect-atmospheric-chemicals_N5794.html

Soudage

Sheet metal laser welding helps job shops compete globally

Source : Industrial Laser Solutions

"When joining sheet metal, job shops have yet to fully embrace more of the benefits laser technology affords. For example, most sheet metal parts are still joined by conventional arc welding processes, such as metal inert gas (MIG), metal active gas (MAG), or tungsten inert gas (TIG) welding, and these processes have seen few changes over the last few decades. The majority of conventionally welded parts still require a refinishing step—such as grinding—to achieve perfect quality, yet this additional step could easily be overcome with laser welding. This innovative approach not only opens up completely new markets for job shops, it also makes them more competitive in the global marketplace."

Lien : <http://www.industrial-lasers.com/articles/print/volume-31/issue-4/features/sheet-metal-laser-welding-helps-job-shops-compete-globally.html>

Date de publication : 15/07/2016

Source laser

Un projet financé par l'UE agite le secteur des lasers

Source : Cordis

"Le projet GOSFEL (Graphene on Silicon Free Electron Laser) a exploité des qualités spéciales du graphène, récemment découvertes. Comme le souligne le professeur Geoffrey Nash, coordinateur du projet, la création d'une version compacte de ce laser, relativement économique et à l'état solide, est depuis longtemps un objectif des physiciens et des ingénieurs."

Lien : http://cordis.europa.eu/news/rcn/125821_fr.html

Date de publication : 16/07/2016

Trends in Cascade Laser applications

Source : Novus Light

"Cascade Lasers (CL) have been around for twenty years, but today advances in CL are shaking mid-IR spectroscopy with the emergence of two alternative sources: Interband Cascade Lasers (ICL) and Quantum Cascade Lasers (QCL)."

Lien : http://www.novuslight.com/cascade-laser-applications-trends-and-challenges_N5781.html

Date de publication : 04/07/2016

LLNL researchers new metal 3D printing techniques could revolutionize laser design

Source : 3ders

"Researchers at Lawrence Livermore National Laboratory are using metal 3D printing to create strong and lightweight structures for advanced laser systems, potentially altering the future of laser design. The research will involve trialling a new "feed-forward" approach to testing and certification."

Lien : <http://www.3ders.org/articles/20160720-llnl-researchers-new-metal-3d-printing-techniques-could-revolutionize-laser-design.html>

Date de publication : 20/07/2016

Traitement de surface

Laser system strips paint from full-size aircraft

Source : Industrial Laser Solutions

"Laser paint stripping is finally emerging as a credible solution to replace the hazardous, environmentally unfriendly, chemical, and mechanical paint stripping methods that dominate aircraft depainting today. And, surprisingly, the boldest new initiative in laser paint stripping is being spearheaded by private industry."

Lien : <http://www.industrial-lasers.com/articles/print/volume-31/issue-5/features/laser-system-strips-paint-from-full-size-aircraft.html>

Date de publication : 21/09/2016

Laser-treated graphene enables paper-based electronics

Source : Laser Focus World

"Recent projects that used inkjet printers to print multilayer graphene circuits and electrodes had the engineers thinking about using it for flexible, wearable and low-cost electronics. But there are problems with the existing technology. Once printed, the graphene has to be treated to improve electrical conductivity and device performance, usually with high temperatures or chemicals that degrade flexible or disposable printing surfaces such as plastic films or even paper. Suprem Das, an Iowa State postdoctoral research associate in mechanical engineering and an associate of the U.S. Department of Energy's Ames Laboratory, and Claussen came up with the idea of using lasers to treat the graphene. [...] They found treating inkjet-printed, multilayer graphene electric circuits and electrodes with a pulsed-laser process improves electrical conductivity without damaging paper, polymers or other sensitive materials."

Lien : <http://www.laserfocusworld.com/articles/2016/09/laser-treated-graphene-enables-paper-based-electronics.html>

Date de publication : 11/09/2016

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

Source : Industrial Laser Solutions

"A laser surface-treatment process developed at Oak Ridge National Laboratory (ORNL; Oak Ridge, TN) for joining carbon fiber composites and aluminum (FIGURE) 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 : <http://www.industrial-lasers.com/articles/print/volume-31/issue-4/departments/update/laser-treatment-helps-to-better-bond-carbon-fiber-to-aluminum-for-lightweight-cars.html>

Date de publication : 14/07/2016

Ultrafast laser radiation can structure fiber-reinforced components and remove their coatings

Source : Industrial Laser Solutions

"Having been prevalent in the aerospace industry for many years, fiber-reinforced materials are now being used in numerous other sectors, such as automotive construction, medical engineering, and building construction. As a result, the demand for materials and processing methods is also growing fast."

Lien : <http://www.industrial-lasers.com/articles/2016/07/ultrafast-laser-radiation-can-structure-fiber-reinforced-components-and-remove-their-coatings.html>

Date de publication : 18/07/2016

Divers

Newsletter du Club Laser et Procédés

Source : Club Laser et Procédés

Le Club Laser et Procédés vient de publier sa 48^e newsletter dédiée aux applications industrielles du laser.

Lien : <http://procedes-laser.over-blog.com/2016/09/newslaser-48-septembre-2016.html>
http://data.over-blog-kiwi.com/1/53/02/19/20160926/ob_504792_newslaser-48-septembre-2016.pdf

Date de publication : 26/09/2016

[Pépité à suivre] Almae Technologies industrialise des lasers high tech

Source : Industrie & Technologies

"Almae Technologies n'a pas encore soufflé sa première bougie, mais ne manque pas d'ambition. Basée en région parisienne, cette jeune pousse est issue de recherches menées au sein du III-V Lab, un groupement d'intérêt économique rassemblant Nokia Bell Labs, Thales et le CEA. Sa spécialité ? Les lasers télécoms. Pourquoi elle ? Car Almae Technologies assure pouvoir proposer, à court terme, un laser modulateur intégré offrant un débit de 100 Gbit/s."

Lien : <http://www.industrie-techno.com/pepите-a-suivre-almae-technologies-industrialise-des-lasers-high-tech.45540>

Date de publication : 20/09/2016

Ophthalmic lasers market set to grow

Source : Photonics

"The global excimer and femtosecond ophthalmic lasers market is expected to increase at a rate of nearly 4 percent in 2016, reaching \$666 million in revenue, according to Future Market Insights Global & Consulting PVT Ltd."

Lien : <http://www.photonics.com/Article.aspx?AID=61107>

Date de publication : 13/09/2016

Market Insights: Fifty years of the laser – A Coherent view

Source : Laser Focus World

"In 2015, Laser Focus World contributing editor Jeff Hecht commemorated the magazine's 50th anniversary with a [series of articles chronicling major technology milestones](#). Among the trends, it's interesting to note that some laser technologies, such as [ruby, nitrogen, and helium cadmium \(HeCd\)](#), may have generated initial excitement, but at best penetrated only a few niche markets. [...] This year is [Coherent's](#) 50th anniversary and, in many ways, the company's history and success mirror such trends in the laser industry. While we continue to offer a broad spectrum of laser technologies that service markets ranging from a few units to tens of thousands of units, long-term success has been driven by a few important applications. This article examines some of the larger commercial market successes for lasers during the past 50 years, viewed through the prism of Coherent's involvement."

Lien : <http://www.laserfocusworld.com/articles/print/volume-52/issue-08/columns/market-insights/fifty-years-of-the-laser-a-coherent-view.html>

Date de publication : 30/08/2016

Inexpensively engineered longer crystals for lasers

Source : Novus Light

"Laser applications may benefit from crystal research by scientists at the National Institute of Standards and Technology (NIST) in Colorado (US) and China's Shandong University. They have discovered a potential way to sidestep longstanding difficulties with making the crystals that are a crucial part of laser technology. But the science behind their discovery has experts scratching their heads."

Lien : http://www.novuslight.com/inexpensively-engineered-longer-crystals-for-lasers_N5969.html

Date de publication : 29/08/2016

Materials Processing: When laser measurements absolutely must be made

Source : Novus Light Today

"Measurements of laser performance can be taken as often as the user likes, and the frequency of those measurements is often defined by a number of issues. But what frequency is sufficient? What measurements should be tracked? When this data is collected, what should be done with it? As lasers are being developed, laser manufacturers take measurements to understand how changes in the design affect performance. This data is (or should be) also referred to several times over the life of the laser."

Lien : http://www.novuslight.com/materials-processing-when-laser-measurements-absolutely-must-be-made_N5881.html

Date de publication : 29/08/2016

Ultra-long lasers challenge conventional knowledge about laser technology

Source : Phys.org

"The EU ULTRALASER project is proving that lasers can be more than just sources of coherent light. With the right configuration, they can also serve as a transmission medium – a development that opens the door to an array of new uses."

Lien : <http://phys.org/news/2016-07-ultra-long-lasers-conventional-knowledge-laser.html>

Date de publication : 28/07/2016