

Fabrication Additive

Bulletin de Veille - 31 janvier 2020

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SOMMAIRE

A LA UNE

- Le Boeing 777X effectue son premier vol avec plus de 300 pièces imprimées en 3D

GÉNÉRALITÉS - FABRICATION ADDITIVE

- Lawrence Livermore to officially open \$10 million Advanced Manufacturing Laboratory
- 100 3D printing experts predict the future of 3D printing in 2030

AÉROSPATIAL - FABRICATION ADDITIVE

- 3D Printing and Space Exploration: How NASA Will Use Additive Manufacturing
- Developing 3D Printing Capability for the Defence and Aerospace Sector
- El Paso scientists to deliver 3D bioprinted miniature hearts to the ISS
- BAE Systems et Renishaw s'associent pour développer des solutions de fabrication additive pour l'aérospatiale et la défense

CONCEPTION - FABRICATION ADDITIVE

- New ABB Robotics software enables 3D printing without manual programming

TECHNOLOGIES - FABRICATION ADDITIVE

- L'impression 3D composite : on vous explique tout !
- GE, ORNL, PARC receive \$1.3 million to accelerate energy products with additive manufacturing
- 9T Labs closes \$4.3 million funding round to develop carbon fiber 3D printing technology
- Norimat adapte le frittage flash à la production de pièces complexes
- Wire and Powder Additive Manufacturing Combined in One Machine
- Des ultrasons pour augmenter la résistance des pièces métalliques imprimées en 3D

MATÉRIAUX - FABRICATION ADDITIVE

- Ricoh's new resin-coated powders aim to expand range of metals for

A LA UNE

Le Boeing 777X effectue son premier vol avec plus de 300 pièces imprimées en 3D

27/01/2020 - www.3dnatives.com



Le Boeing 777X a effectué son premier vol long courrier samedi dernier avec succès, le plaçant dans les plus grands bimoteurs du marché aéronautique. Ce qui est particulièrement intéressant avec ce nouvel avion du géant américain est que ses deux moteurs GE9X intègrent plus de 300 pièces imprimées en 3D, réalisées par GE chez Avio Aero à Cameri en Italie, et le centre de technologie additive de GE à West Chester, en Ohio. Plusieurs tailles de composants auraient été conçues, que ce soit des capteurs de température, des mélangeurs de carburant ou encore des échangeurs de chaleur.

GÉNÉRALITÉS - FABRICATION ADDITIVE

Lawrence Livermore to officially open \$10 million Advanced Manufacturing Laboratory

21/01/2020 - 3dprintingindustry.com



California-based research facility Lawrence Livermore National Laboratory (LLNL) will be hosting a dedication ceremony and media tour of its Advanced Manufacturing Laboratory (AML), a state-of-the-art collaborative facility situated in the Livermore Valley Open Campus (LVOC). The facility, costing \$10 million and sized at 14,000 square feet, features advanced 3D printing equipment and is designed to address manufacturing challenges through the merger of LLNL's science and engineering expertise with academia and industry, leading to the creation of public-private partnerships.

100 3D printing experts predict the future of 3D printing in 2030

23/01/2020 - 3dprintingindustry.com



3D Printing Industry asked 100 additive manufacturing leaders to identify how 3D printing will develop during the next ten years. In our article last week, we took a look at the near term trends in 3D printing to watch for 2020. This new article draws on insights from additive manufacturing experts across the globe to understand where our industry is heading. Will AM herald the disruption of manufacturing as we know it? While major change is likely to be slow. With this longer time horizon, it may be useful to consider the role of governments in supporting new industries.

AÉROSPATIAL - FABRICATION ADDITIVE

3D Printing and Space Exploration: How NASA Will Use Additive Manufacturing

17/01/2020 - www.techbriefs.com

When planning a mission to the International Space Station, NASA's

Binder Jetting

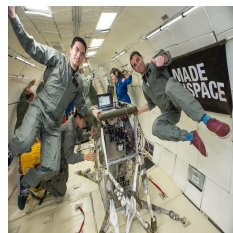
- Développer un filament d'impression 3D standardisé à partir de plastiques recyclés
- StoneFlower3D launches new Printhead 3.0 for ceramic 3D printing
- Equispheres granted \$8 million from SDTC for sustainable additive manufacturing powders

MARKET / BUSINESS - FABRICATION ADDITIVE

- Researchers Use Stabilized Gold Nanoparticles to Print 3D Image
- HP and NTU Singapore opens HP-NTU Digital Manufacturing Corporate Lab
- PostProcess Technologies partners with K.K. Irisu to reach the Asian market
- Additive manufacturing at scale with the largest U.S. 3D printing facilities

EVÈNEMENTS / ÉTUDES - FABRICATION ADDITIVE

- Polymer 3D Printing Sector Shows Continuing Growth
- Additive Manufacturing for Aerospace and Space Conference set to take place next month
- The 2nd TÜV SÜD Additive Manufacturing Conference aims to explore industrial readiness
- Discover the future for sinter-based Ti parts in PIM International's PMTi2019 review



traditional approach has been similar to how one might prepare for a long camping trip: bring everything, 'cause we're not going home. To support spaceflight missions, in fact, NASA sends up about 7,000 pounds of spare parts to the ISS every year, says Tracie Prater, a materials engineer at Marshall Space Flight Center. "There are 29,000 pounds of hardware spares/replacement units on ISS and another 39,000 pounds on the ground ready to fly when needed," Prater told Tech Briefs.

Developing 3D Printing Capability for the Defence and Aerospace Sector

20/01/2020 - www.azom.com

BAE Systems and Renishaw have signed an agreement to work together on the development of additive manufacturing capability for the defence and aerospace sector, designed to help improve performance, reduce costs and speed up manufacturing processes on combat aircraft of the future. Renishaw and BAE Systems teams at Samlesbury The Memorandum of Understanding (MoU) lays the framework for the two companies to bring together world-leading expertise in additive manufacturing (AM also known as 3D printing) to maximise the application of this novel emerging manufacturing technique.

El Paso scientists to deliver 3D bioprinted miniature hearts to the ISS

27/01/2020 - 3dprintingindustry.com



Biomedical researchers from Texas Tech University Health Sciences Center El Paso (TTUHSC El Paso) and The University of Texas at El Paso (UTEP) are collaborating to develop artificial mini-hearts using 3D bioprinting technology for space. These heart-tissue structures will be sent to the International Space Station (ISS) to gain insight into how microgravity affects the function of the human heart, particularly in regards to the health condition known as cardiac atrophy. The 'artificial mini-heart,' otherwise known as a cardiac organoid, will be produced using a combination of human stem cells and 3D bioprinting.

BAE Systems et Renishaw s'associent pour développer des solutions de fabrication additive pour l'aérospatiale et la défense

20/01/2020 - www.primante3d.com



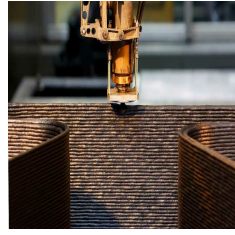
BAE Systems, une société britannique spécialisée dans la défense, la sécurité et de l'aérospatiale, refait parler d'elle avec une nouvelle collaboration en lien avec la fabrication additive. Principal fournisseur de la défense britannique, celui qui en 2014 avait défrayé l'actualité pour avoir réalisé les premières pièces métalliques imprimées en 3D pour un avion de chasse, vient de signer un protocole d'accord avec son compatriote Renishaw, fabricant de systèmes d'impression 3D à fusion laser sur lit de poudre.

CONCEPTION - FABRICATION ADDITIVE

New ABB Robotics software enables 3D printing without manual programming

16/01/2020 - 3dprintingindustry.com

ABB Robotics, the robotics division of Swiss-Swedish multinational electrical equipment firm ABB, has introduced 3D printing software to its robotics simulation program. With this new feature, the company states that users will be able to program ABB robots to begin additive manufacturing production in 30 minutes. Available as an add-on in its RobotStudio software, ABB aims to eliminate manual programming for its customers with the new 3D printing software, in order to enable faster prototype production. "With our new 3D Printing software, we are offering customers a faster and more streamlined 3D printing process," states Steven Wyatt, Head of Portfolio and Digital at ABB Robotics and Discrete Automation.

L'impression 3D composite : on vous explique tout !28/01/2020 - www.3dnatives.com

Sur le marché de la fabrication additive, davantage d'entreprises utilisent des composites pour concevoir des pièces plus ou moins complexes. Même si ce terme est de plus en plus utilisé, il n'est pas évident de savoir ce qu'est exactement un matériau composite et pourquoi il est employé sur le marché de l'impression 3D. Et pourtant, à en croire la récente étude publiée par IDTechEx, l'impression 3D composite devrait atteindre 1,73 milliards de dollars d'ici 2030 ! Quand on parle de composite, même le béton pourrait rentrer dans cette catégorie de matériaux car il est composé de plusieurs matières différentes.

GE, ORNL, PARC receive \$1.3 million to accelerate energy products with additive manufacturing23/01/2020 - 3dprintingindustry.com

GE, Oak Ridge National Laboratory (ORNL), Tennessee, and the Palo Alto Research Center (PARC), a Xerox company, have been awarded an estimated \$1.3 million to accelerate the development of 3D printed turbomachinery parts. "Totally Impactful" The funds were granted by the U.S. Advanced Research Projects Agency-Energy (ARPA-E) Design Intelligence Fostering Formidable Energy Reduction and Enabling Novel Totally Impactful Advanced Technology Enhancements (DIFFERENTIATE) program. Within the DIFFERENTIATE program, the partners aim to reduce the timeline for designing and validating 3D printed components by as much as 65%.

9T Labs closes \$4.3 million funding round to develop carbon fiber 3D printing technology29/01/2020 - 3dprintingindustry.com

Swiss carbon fiber 3D printing specialist 9T Labs has announced the closure of a \$4.3 million seed financing round. Using the funding, the company will focus on further developing its carbon fiber 3D printing technology, as well as scaling its mass manufacturing use cases. The seed round included contributions from existing investors Wingman Ventures, as well as new additions from Investiere and the Technology Fund. Furthermore, 9T Labs is supported by the ESA Business Incubation Centre (ESA BIC) Switzerland program, a program offering support for entrepreneurs to help develop their businesses, with a particular focus on space.

Norimat adapte le frittage flash à la production de pièces complexes29/01/2020 - www.industrie-techno.com

Après plusieurs années de R&D et de maturation, la startup toulousaine Norimat vient d'investir dans un nouvel outil de production pour mettre en oeuvre sa technologie de frittage flash. A la clé, des pièces de formes complexes et de haute performance produites en un temps record et avec très peu de perte de matière. Le frittage flash, ou technologie SPS (Spark Plasma Sintering), permet de passer de la poudre au solide en des temps record.

Wire and Powder Additive Manufacturing Combined in One Machine23/01/2020 - www.engineering.com

Sicnova3D has sponsored this post. As adoption of additive manufacturing accelerates in 2020, users continue to seek out the best machines, vendors and technologies to meet specific needs and to best fit specific applications. For example, companies in the dental alignment and custom eyewear industries have identified polyamide SLS technology as a

good fit, thanks to the relatively high accuracy possible in that process as well as the capability to nest a run of parts in three dimensions in the build chamber. But those parts are small, and in many industries larger, metal parts are the ultimate goal.

Des ultrasons pour augmenter la résistance des pièces métalliques imprimées en 3D

22/01/2020 - www.primante3d.com



Une récente étude publiée par le RMIT (Royal Melbourne Institute of Technology), une université mondiale de technologie, a révélé comment les ondes sonores à haute fréquence pouvaient avoir un impact significatif sur la microstructure intérieure des alliages imprimés en 3D. Dans la revue Nature Communication, ses auteurs expliquent comment la technologie des ultrasons pourrait être utilisée pour créer des pièces métalliques plus solides et plus denses en modifiant l'organisation des particules de poudre dans une formation plus serrée pendant le processus d'impression.

MATÉRIAUX - FABRICATION ADDITIVE

Ricoh's new resin-coated powders aim to expand range of metals for Binder Jetting

17/01/2020 - www.metal-am.com

The Additive Manufacturing Business Group of Ricoh, based in Kanagawa, Japan, has developed a new resin-coated metal powder and cross-linking 'ink' for use in the Binder Jetting process. Said to increase the diversity of metals available for Binder Jetting and improve the quality of components, the new range is aimed at those adopting Binder Jetting as a manufacturing process. The metal powders are coated with a uniform layer of binder resin around 100 nm in thickness, in a process developed from coating technology acquired through electrophotography.

Développer un filament d'impression 3D standardisé à partir de plastiques recyclés

21/01/2020 - www.3dnatives.com



Au Danemark, un professeur de l'université d'Aarhus, Mogens Hinge, mène un projet de recherche qui vise à recycler les déchets plastiques en un filament d'impression 3D standardisé pour tout le marché. Baptisé "Development of filament for 3D printing based on recycled plastics", le projet a déjà obtenu 84 000€ de financement par le Fonds d'innovation du Danemark et est dirigé par l'entreprise de recyclage de plastique danoise, Aage Vestergaard Larsen A/S. Le professeur espère ainsi offrir à tous les utilisateurs une qualité de filament constante, sans variation d'une bobine à l'autre.

StoneFlower3D launches new Printhead 3.0 for ceramic 3D printing

24/01/2020 - 3dprintingindustry.com



German ceramic 3D printing startup StoneFlower3D has presented a print head for processing clay, concrete and pastes in 3D printing. A durable and corrosion-resistant extruder, the print head is intended for the 3D printing of clay and pastes in academic research, material science, and professional environments. Named Printhead 3.0, the new device has been CNC-milled from stainless steel 1.4301 304/V2A and AL6061-T6 alloy to ensure its durability. Additionally, it features an optimized design intended to maintain uniform flow of the material, helping to prevent leaks and jamming.

Equispheres granted \$8 million from SDTC for sustainable additive manufacturing powders

27/01/2020 - 3dprintingindustry.com



Equispheres, a metal additive manufacturing powder manufacturer, has received \$8 million from Sustainable Development Technology Canada (SDTC) to scale its material production capacity over the next two years. With this investment, the SDTC is funding competitive clean technology solutions for the automotive and aerospace industries. Kevin Nicholds, CEO of Equispheres, stated, "This support from SDTC speaks to the importance of our powder technology as a key to achieving significant emissions reductions in the automotive sector."

MARKET / BUSINESS - FABRICATION ADDITIVE

Researchers Use Stabilized Gold Nanoparticles to Print 3D Image

21/01/2020 - www.azom.com



For the first time, a research team from the University of Seville, in association with the University of Nottingham, has successfully produced the first image of stabilized gold nanoparticles with biocompatible and biodegradable systems achieved with 3D-printing methods. The logo of the University of Seville was the image selected for this test. This achievement will have applications in the pharmaceutical industry, such as in the preparation of biocompatible biosensors based in gold, which have already been shown to be effective in the detection of carcinogenic cells and tumor biomarkers.

HP and NTU Singapore opens HP-NTU Digital Manufacturing Corporate Lab

24/01/2020 - 3dprintingindustry.com



HP, the Nanyang Technological University (NTU Singapore), and the National Research Foundation Singapore (NRF), have officially opened the HP-NTU Digital Manufacturing Corporate Lab with 3D printing technologies. Inaugurated at NTU Singapore earlier this week, this lab offers skills development programs aimed at training others in additive manufacturing and digital design. Furthermore, new design software tools are being developed by the lab for material optimization. Mike Regan, Director, HP-NTU Digital Manufacturing Corporate Lab spoke with 3D Printing Industry about the type of technologies being developed at the newly established facility.

PostProcess Technologies partners with K.K. Irisu to reach the Asian market

15/01/2020 - www.metal-am.com

PostProcess Technologies Inc., Buffalo, New York, USA, a provider of automated post-production solutions for industrial Additive Manufacturing, has reported that it is expanding into the Asian market with its first distribution partner, K.K. Irisu (C. Illies & Co., Ltd.), located in Tokyo, Japan. K.K. Irisu was founded in 1859 as the first German trading house operating in Japan. The company offers comprehensive products and services portfolio for Additive Manufacturing, including scanners, parts prototyping and production technologies.

Additive manufacturing at scale with the largest U.S. 3D printing facilities

23/01/2020 - 3dprintingindustry.com



What is the largest 3D printing facility in North America? It seems like a straightforward question, but depending on if you are speaking to the marketing or engineering department – the answer can differ. 3D Printing Industry takes a look behind heading grabbing phrases such as the world's largest 3D printing factory and spoke to experts to get the facts. The largest number of additive manufacturing systems installed? As industrial additive manufacturing progresses, manufacturers, service bureaus and engineering firms have invested in facilities housing various

EVÈNEMENTS / ÉTUDES - FABRICATION ADDITIVE

Polymer 3D Printing Sector Shows Continuing Growth

21/01/2020 - www.engineering.com

A recent report revealed growth in the demand for industrial polymer 3D printers for the third quarter of 2019. According to the figures, shipment numbers saw a steady 12 percent growth rate over the 12-month period. However, a sudden 8 percent spike occurred in the third quarter, particularly for industrial polymer 3D printers. The industrial polymer 3D printer sector accounted for over 70 percent of 3D printer revenue over the past year, with the average price tag of these units coming in at \$100,000. The companies that experienced the most global growth during the third quarter included HP and the Chinese company UnionTech.

Additive Manufacturing for Aerospace and Space Conference set to take place next month

16/01/2020 - www.metal-am.com

The Additive Manufacturing for Aerospace and Space Conference, organised by IQPC Ltd in partnership with Defence IQ, is set to take place at the Vox Conference Centre, Birmingham, UK, from February 25–27, 2020. The conference will feature presentations by nineteen keynote speakers.

The 2nd TÜV SÜD Additive Manufacturing Conference aims to explore industrial readiness

15/01/2020 - 3dprintingindustry.com

Leading technical service corporation, TÜV SÜD, is addressing the implementation of industrial 3D printing with standards and digital solutions at the 2nd TÜV SÜD Additive Manufacturing Conference. Set to take place in Munich from February 6-7th, TÜV SÜD aims to explore and discuss industrial readiness. Up for discussion at the event are topics including how to implement AM in a predictable manner, for example via small series production or working with high-end components. The 2nd TÜV SÜD Additive Manufacturing Conference Prior to the Additive Manufacturing Conference, TÜV SÜD is hosting three days of training.

Discover the future for sinter-based Ti parts in PIM International's PMTi2019 review

28/01/2020 - www.metal-am.com

The PM Titanium conference series, previously held in Brisbane, Australia (2011), Hamilton, New Zealand (2013), Lüneburg, Germany (2015) and Xi'an, China (2017), is a key international event for those involved in the powder metallurgical processing of titanium and its alloys. In September 2019 the event reached its fourth continent, North America, with PMTi2019 being held at the University of Utah, Salt Lake City, USA. In the latest issue of PIM International (Vol. 13 No. 4), Dr Thomas Ebel reviewed a selection of conference papers from PMTi2019 that suggest that progress on the sinter-based processing of titanium and titanium alloys continues to mature, with cost reduction a major focus of research.

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