Fabrication Additive

Bulletin de Veille - 16 janvier 2020

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A LA UNE

L'école supérieure des ingénieurs ESILV lance un nouveau cours dédié à la fabrication additive

19/12/2019 - www.primante3d.com

Pôle Léonard de Vinci – Fablab © Let It Be L'accélération de la fabrication additive dans l'industrie implique un besoin soutenu en nouvelles compétences et en formation. Selon une étude menée par la plateforme Joblift, le nombre d'offres d'emploi liées à l'impression 3D avait plus que doublé en 2017. À eux seul les ingénieurs et techniciens en génie mécanique représentaient 45 % des offres.

Le marché mondial de l'impression 3D passe la barre symbolique des 10 milliards $ en 2019

10/01/2020 - www.primante3d.com

Quels que soient les enquêtes, les données publiées année après année par les cabinets d'études sur le marché de la fabrication additive vont toutes dans le même sens : sa croissance rapide n'est pas prête de s'essouffler. Des machines aux logiciels, toute la chaîne en amont de la production augmente ses parts de marché. Avec + de 80 % d'équipements vendus entre 2016 et 2017, le segment métal tient une part de plus en plus importante dans cette dynamique. Sa croissance est telle que le marché des matériaux métalliques pour la fabrication additive pourrait même dépasser celui des plastiques dès 2020.

Metamorphic Manufacturing: The "Third Wave" of Digital Manufacturing?

02/01/2020 - www.engineering.com

Recent discourse surrounding the future of advanced manufacturing has been dominated by two methodologies. Computer numerical controlled (or CNC) machining remains the most widely used method of industrial production today. Additive manufacturing (AM), though pioneered in the 1980s, has only lately advanced far enough as a technology to figure significantly in the production processes of manufacturers. While both CNC machining and AM have distinct advantages that make them indispensable to modern manufacturers, neither is without drawbacks.

GÉNÉRALITÉS - FABRICATION ADDITIVE

Quelles sont les tendances qui ont marqué la fabrication additive en 2019 ?

31/12/2019 - www.3dnatives.com

Ca y est, l'année 2019 touche à sa fin ! Quoi de mieux pour revenir sur les principales tendances de la fabrication additive ? Qu'est-ce qui a façonné le marché cette année, quelles ont été les innovations à retenir, à quoi faut-il s'attendre pour 2020 ? Nous vous avons préparé 5 tendances, identifiées comme ayant eu un impact significatif sur le marché de l'impression 3D cette année.

2020 Predictions: 3D Printing

07/01/2020 - www.engineering.com

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It's difficult to predict the future of just about anything, especially if you lack a magic ball or access to the Stargate Project. But if anyone knows what the future of the additive manufacturing industry (AM) will look like in the next year, it might just be those companies at the cutting edge of 3D printing technology. We reached out to a number of businesses at the forefront of AM to learn what they thought 3D printing will look like in 2020.

AÉROSPATIAL - FABRICATION ADDITIVE

Launcher annonce le premier test à grande échelle de son moteur-fusée imprimé en 3D

15/12/2019 - www.primante3d.com

Launcher est une start-up qui illustre bien le niveau de maturité actuel de la fabrication additive. Implantée à New-York, cette société aérospatiale s'est fait de la fabrication des composants de fusée par impression 3D une spécialité. Son dernier fait d'armes, une chambre de combustion en alliage de cuivre de 86 cm de hauteur imprimée pour son moteur fusée E-2. Produite par AMCM, une société du groupe EOS qui fabrique des machines de fabrication additive personnalisées, elle serait la plus grande jamais imprimée en une seule pièce pour une fusée à ergols liquides.

Solving the challenges of long duration space flight with 3-D printing

17/12/2019 - phys.org

The International Space Station has continuously been home to astronauts for more than nineteen years. Astronauts conduct scientific research using dozens of special facilities aboard the space station, which also provides them with a place to eat, sleep, relax and exercise. To make all of this possible requires sending more than 7,000 pounds of spare parts to the station annually. Another 29,000 pounds of spaceflight hardware spares are stored aboard the station and another 39,000 on the ground, ready to fly if needed. This logistics support system works well for a spacecraft that is orbiting 250 miles above Earth and readily accessible to cargo resupply missions.

3D Bioprinting Solutions print bone tissue on board the ISS

17/12/2019 - 3dprintingindustry.com

3D Bioprinting Solutions, a Russian bio-technical research laboratory, has 3D bioprinted bone tissue in zero gravity on the International Space Station (ISS). Executed on the lab's magnetic 3D bioprinter Organ.Aut, this experimentation is working to enable the creation of bone implants for astronaut transplantation during long-term interplanetary expeditions. The magnetic 3D bioprinter known as Organ.Aut. Photo via 3D Bioprinting Solutions. Zero gravity 3D bioprintingAs a subsidiary of Invitro, a private medical company in Russia, the Moscow-based 3D Bioprinting Solutions created the Organ.Aut to study how living organisms are affected by long flights in outer space.

CONCEPTION - FABRICATION ADDITIVE

Open Mind Technologies introduces AM capability for its hyperMILL CAM software

17/12/2019 - www.metal-am.com

Additive Manufacturing on an aerospace nozzle, aided by Open Mind's hyperMILL AM solution Open Mind Technologies AG, headquartered in Wessling, Germany, a developer of CAD/CAM software solutions worldwide, has introduced an Additive Manufacturing capability into its hyperMILL® CAM software. The introduction of AM capability into hyperMILL is said to enable efficient hybrid processing, with simultaneous additive and subtractive manufacturing on one machine.For highly complex 5-axis simultaneous processing, hyperMILL Additive Manufacturing reportedly enables an array of flexible options for Directed Energy Deposition (DED) and Wire Arc Additive Manufacturing (WAAM) processes.

TECHNOLOGIES - FABRICATION ADDITIVE

VoxelJet dévoile un procédé pour créer plusieurs propriétés de matériaux dans une

même pièce

16/12/2019 - www.primante3d.com

VoxelJet est un fabricant allemand connu pour ses imprimantes 3D très grand format spécialisées dans la fabrication de moules et des noyaux en sable. Sa technologie à jet d'encre Phenolic Direct Binding permet d'obtenir des pièces de fonderie aux formes très complexes alliant les avantages de la fonderie et de l'impression 3D. Pour les pièces thermoplastiques, l'entreprise a développé un processus de frittage à haute vitesse (HSS), qui permet d'imprimer des pièces aux propriétés et qualités similaires au frittage laser sélectif, Multi Jet Fusion ou au moulage par injection.

L'université d'Exeter s'équipe de l'EOS P 810 afin d'optimiser les matériaux PAEK de Victrex

15/01/2020 - www.3dnatives.com

En 2018, le fabricant allemand EOS nous présentait une nouvelle machine de frittage de poudre dédiée au matériau HT-23, un polymère composite intégrant à la fois du PEKK et de la fibre de carbone pour répondre aux exigences de l'aérospatial, l'électronique et les transports. Aujourd'hui, c'est le centre CALM de l'Université d'Exeter en Angleterre qui teste pour la première fois cette solution industrielle, en collaboration avec le fabricant Victrex.

AddUp and ORNL enter $2.7 million agreement to advance laser powder bed fusion technology

08/01/2020 - 3dprintingindustry.com

French industrial 3D printer provider AddUp has entered into a $2.7 million cooperative research and development agreement (CRADA) with the Oak Ridge National Laboratory (ORNL), to develop metal additive manufacturing materials processes for tooling.The partners will focus on advancing laser powder bed fusion (LPBF) technology for novel metal molds used in tooling. Members of the Oak Ridge National Laboratories and AddUp team collaborate to target the advancement of materials processes for metal additive manufacturing tooling applications.

Pourquoi combiner l'intelligence artificielle et l'impression 3D ?

06/01/2020 - www.3dnatives.com

De nos jours, nous rencontrons de plus en plus de mots et concepts à la mode tels que « Intelligence artificielle » (IA), « Blockchain » ou « Industrie 4.0 ». En elles-mêmes, ces technologies ont un impact énorme sur l'économie actuelle et les systèmes de production existants. Mais qu'en est-il du fait que ces nouvelles technologies – souvent décrites comme perturbatrices – peuvent être combinées ? Y a-t-il alors des possibilités complètement nouvelles, auparavant inimaginables ?

New RMIT research points to stronger 3D printed alloys via sound waves

09/01/2020 - 3dprintingindustry.com

Researchers from Australia's Royal Melbourne Institute of Technology (RMIT) University School of Engineering have used ultrasonic sound waves to strengthen the properties of 3D printed alloys.A study published today in Nature Communicationshas demonstrated how high-frequency sound waves can have a significant impact on the inner microstructure of 3D printed alloys. They can cause the alloy grains to maintain a tighter formation during the 3D printing process, consequently making them stronger than alloys 3D printed through conventional means.

MATÉRIAUX - FABRICATION ADDITIVE

Elementum 3D receives investment from Sumitomo for proprietary metal powder

14/01/2020 - 3dprintingindustry.com

Colorado-headquartered additive manufacturing material developer Elementum 3D has received an investment from Sumitomo Corporation of Americas (SCOA), the U.S. branch of global trading firm Sumitomo Corporation.Using the investment, Elementum will work towards expanding the marketing and sales of its proprietary metal powder, which incorporates ceramics to enable improved additive manufacturing performance. Further details regarding the deal were not disclosed.“We are excited to have Sumitomo Corporation of Americas come on board as an investor.

How Digital Foam Enables Product Lifecycle Innovations

15/01/2020 - www.engineering.com

3D printed lattice structures can be made to have foam-like characteristics. These structures are branded “Digital Foam” by EOS. They represent a new opportunity to engineer better, safer, more customized and higher-performance products in a variety of industries. However, designing 3D printed foams is challenging. There are myriad variables controlling the performance and function of a 3D printed lattice structure, including the size, shape and direction of the struts, the geometry of voids, the material, and more. This means that engineering a digital foam can be very expensive and time consuming.

Researchers Achieve 3D Printed Glass with Complex Geometry

03/01/2020 - www.photonics.com

Researchers from ETH Zürich have developed a technique to produce complex glass objects with 3D printing. The method is based on stereolithography, one of the first 3D-printing techniques developed during the 1980s. The researchers developed a special resin containing a plastic and organic molecules to which glass precursors are bonded. The resin can be processed using commercially available digital light processing technology, which irradiates the resin with UV light patterns. Wherever the light strikes the resin, it hardens because the light-sensitive components of the polymer resin cross-link at the exposed points.

QuesTek Innovations and DLR to develop high-temperature aluminum alloy for 3D printing

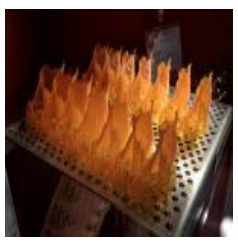
16/12/2019 - 3dprintingindustry.com

High performance materials manufacturer QuesTek Innovations LLC has announced that it will be developing a new 3D printer feedstock in collaboration with the German Aerospace Center (DLR).An aluminum alloy, the new material from the two companies will exhibit high strength at elevated temperatures between 200 and 300°C. At this level of performance, the material will be able to replace titanium in some applications, making components and equipment lighter than before. Heinz Voggenreiter, Director of the Institute of Materials Research for the DLR, has deemed the material a type of “extraordinary printable alloy.”

MARKET / BUSINESS - FABRICATION ADDITIVE

Prodways announces sales to BASF and DSM

09/01/2020 - 3dprintingindustry.com



Prodways Group, a French 3D printer producer and service provider, has announced a series of 3D printer sales to major chemical companies for R&D and manufacturing applications. The company has sold a selection of its selective laser sintering machines to DSM, BASF and an unnamed French chemical company, including its ProMaker P1000 and ProMaker P2000 ST 3D printers. The chemical companies have acquired 3D printers from Prodways for the purpose of research and development, parts production and material testing.

80 additive manufacturing experts predict the 3D printing trends to watch in 2020

13/01/2020 - 3dprintingindustry.com

Predicting the future is impossible. But that doesn’t stop us at 3D Printing Industry from inviting CEOs, CTOs and other AM experts to give us 3D printing predictions for 2020.If you want to stay up to date with the latest 3D printing news, subscribe to our free 3D Printing Industry newsletter. You’ll be among the first to hear about the 2020 3D Printing Industry Awards and get updates about new jobs and career moves in the AM industry.Marie Langer, CEO, EOS GmbHhe years, additive manufacturing has transitioned from a system and materials to a complete end-to-end solution business.

EVÈNEMENTS / ÉTUDES - FABRICATION ADDITIVE

Ahead of Davos meeting World Economic Forum publishes 3D printing white paper for leaders, gives update on digital file tax

08/01/2020 - 3dprintingindustry.com

3D printing is on the agenda for Davos 2020, cementing the technology as crucial for the new decade.The World Economic Forum has published two new items that invite discussion. The first, “Would a digital border tax slow down adoption of 3D printing?”, is a continuation of the conversation around how to treat digital goods. The second item is a new white paper, “3D Printing: A Guide for Decision Makers”. Members of the World Trade Organization (WTO) agreed to maintain the current practice of not imposing customs duties on electronic transmissions in which such digital files and related services fall under. This is effective until the 12th Ministerial Conference (MC12) in Nur-Sultan, Kazakhstan, commencing this June.

3D printing at CES 2020: Formlabs, XYZprinting, Snapmaker

08/01/2020 - 3dprintingindustry.com

The Consumer Electronics Show (CES) has returned to the Las Vegas Convention Center for its 2020 edition, running from 7 to 10 Jan. As well as a host of novel technologies, strange gadgets and pointless announcements, CES has also provided a platform for the 3D printing industry to provide updates regarding new technologies and releases over the years. In 2017, Markforged announced its Metal X 3D printer, and in 2019 Nexa3D presented the NXE400 system for the first time.However, following the trend set from last year, there have been few significant announcements relating to 3D printing from CES 2020.

RÉGLEMENTATION / BREVETS - FABRICATION ADDITIVE

Keppel O&M receives approval from Lloyd’s Register to 3D print offshore grade steel components

15/01/2020 - 3dprintingindustry.com

Keppel Offshore & Marine (Keppel O&M), the maritime division of Singaporean conglomerate Keppel Corporation, has been certified by global independent assessment business Lloyd’s Register (LR) to produce offshore grade steel using Laser Aided Additive Manufacturing (LAAM) technology. Partnering with Nanyang Technological University (NTU) in Singapore, and the Singapore Institute of Manufacturing Technology (SIMTech), Keppel O&M will now 3D print high-value steel components for the marine industry.