

Fabrication Additive

Bulletin de Veille - 14 août 2018

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GENERALITES

[It Takes an Evolution to Drive a Revolution](#)

01/08/2018 - www.engineering.com

We're in the early days of a digital industrial revolution that will change the way the world designs and produces everything. Along with other disruptive new technologies like artificial intelligence, advanced robotics, and the Internet of Things, 3D printing technology is helping lead the transformation of the \$12 trillion global manufacturing industry.

[Researchers develop machine learning method for 3D printing process monitoring](#)

13/08/2018 - www.3ders.org



3D printing has the ability to create complex geometrical shapes with the help of 3D software. However, quality monitoring is still a big challenge in additive manufacturing, as many 3D printers do not have a designated system to track and monitor the progress of printing process.

AEROSPATIAL

[SpaceX launches 3D printed satellite, next phase of mission underway](#)

24/07/2018 - 3dprintingindustry.com

This satellite, built through a partnership between SSL, and Telesat, a Canadian satellite communications company, is the latest in a new generation of satellites for Telesat designed to deliver reliable service for bandwidth-intensive applications that power the space economy. The Telstar 19 was launched on board the SpaceX Falcon 9 launch vehicle from the Cape Canaveral Air Force Station in Florida on Sunday. Founded in 2002 by business magnate, Elon Musk, SpaceX is an aerospace manufacturer and space transportation services company headquartered in California.

[NASA awards AI spacefactory for MARSHA, a 3D-printed vertical Martian habitat](#)

26/07/2018 - www.3ders.org

New York-based architecture and technology company AI spacefactory released details of MARSHA (MARS Habitat), a 3D-printed visionary vehicle housing on Mars. AI SpaceFactory is the second-place winner of Phase 3: Level 1 of NASA's 3D-Printed Habitat Challenge and was awarded a top prize of almost \$21,000. The design team also formulates a material specifically for 3D printing on Mars: basalt fiber-reinforced polylactic acid (bf-PLA). AI SpaceFactory will now proceed with the MARSHA project for the next level of the NASA On-Site 3D Printed Habitat Competition.

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F-35 stealth fighter gets boost from 3D printing

27/07/2018 - 3dprintingindustry.com

Tech Sgt. Scott Matthews, Assistant manager of the 388th Maintenance Group's Air Force Repair and Enhancement program, also emphasizes the cost-effectiveness of additive manufacturing, "In the AFREP program, we receive parts that have been damaged and fix them so that they can be returned to the supply chain more quickly [...] It's much more cost effective for the Air Force than buying new parts.

Allevi, Made in Space team up to develop first 3D bioprinter in space

30/07/2018 - www.3ders.org

3D bioprinting company Allevi has teamed up with California-based 3D printing and space technology firm Made In Space to develop the Allevi ZeroG – the first 3D bioprinter capable of working in low-gravity conditions. Now, Made In Space and Allevi are working together to develop the Allevi ZeroG. According to Allevi, the ZeroG bio-extruder will "allow scientists on the Allevi platform to simultaneously run experiments both on the ground and in space to observe biological differences that occur with and without gravity.

NASA announces Phase 3 winners of 3D printed Habitat Challenge

01/08/2018 - 3dprintingindustry.com

3D printed buildings on Mars are a stage closer with NASA's announcement of the latest results in its 3D Printed Habitat Centennial Challenge. (Foster + Partners 2 prize-winning design for a 3D printed habitat on Mars in Phase 1 of the Centennial Challenge. A funky multi-storied 3D printed house, that looks like a set-piece from a 60s space movie, was SEArch+/Apis Cor's contribution to the project.

Stratasys Direct Manufacturing Selected By Airbus To 3D Print Polymer Serial Flying A350 XWB Parts

03/08/2018 - www.stratasysdirect.com

Stratasys Direct Manufacturing, a subsidiary of Stratasys Ltd. (Nasdaq: SSYS) and one of the world's largest 3D printing and advanced manufacturing service providers, has been chosen by Airbus to produce 3D printed polymer parts for use on A350 XWB aircraft. Stratasys Direct Inc. is an indirect subsidiary of Stratasys Ltd., the 3D printing and additive manufacturing solutions company.

Boeing mise sur une nouvelle technologie d'impression 3D métal pour ses engins spatiaux

10/08/2018 - www.primante3d.com



Il concerne une nouvelle technologie d'impression 3D métal développée par un certain Digital Alloys. Là où les systèmes classiques reposent sur l'utilisation de lasers lents et de poudres coûteuses, le procédé d'impression 3D métal développé par Digital Alloys, se distingue par l'utilisation de fils métalliques. La technologie brevetée de Digital Alloys s'inscrit dans la lignée des nouveaux procédés d'impression 3D métal à dépôt de fil que l'on connaît également via les fabricants Desktop Metal et Markforged.

Fabrisonic's 3D metal printed heat exchanger gets green-light from NASA

13/08/2018 - 3dprintingindustry.com



Fabrisonic used Ultrasonic Additive Manufacturing (UAM), an additive manufacturing and subtractive technique, to build a heat exchanger, a device designed to control and regulate the temperature of an interplanetary vehicle's electronic system. The technical details of the research were published in the paper titled Space-grade 3D Metal Printed Heat Exchangers.

CONCEPTION

University of Huddersfield proposes universal language for additive manufacturing

27/07/2018 - 3dprintingindustry.com

According to Dr Qunfen Qi, a research fellow at Huddersfield's EPSRC Future Advanced Metrology Hub, "The research can provide a smart language that enables designers, [additive manufacturing] engineers and inspectors to truly communicate with each other in an intelligent, robust and productive way. Dr. Qi's work for additive manufacturing relies on the principles of mathematical category theory. Featured image shows Progressive Mesh Restoration of a Stanford Bunny – the computer graphics 3D test model that has now also become a test for 3D printers.

MultiMechanics teams with Fortify to make 3D printing more predictable

01/08/2018 - www.3ders.org

MultiMechanics, a developer of multiscale material modeling and simulation software, and Fortify, a Boston-based additive manufacturing company specialized in composite material systems, have announced a strategic partnership to improve the predictability of composite 3D printing. As part of the partnership, Fortify will use MultiMechanics' flagship product, MultiMech, to predict the structural integrity of printed parts before printing, and to help optimize the design by controlling the fiber orientation throughout the structure.

TECHNOLOGIES

Chinese researchers taking ice lithography to nano 3D printing

27/07/2018 - www.3ders.org

This novel and simple electron beam lithography, utilizing this ice resists (ieBL or Ice EBL) technique, is expected to show potential for three-dimensional micro-nano processing. A few years ago, a Harvard research team proposed the idea of "Ice-assisted electron beam lithography" and the Qiu Wei team hoped to advance the technology in the 3D micro-nano device processing field.

A 3D printed artform: UWE researchers use six-axis robot arm to create new 3D printed textures and patterns

30/07/2018 - 3dprintingindustry.com

Researchers from the University of West England's Centre for Fine Print Research (CFPR), located in Bristol, UK, are working with a six-axis Mitsubishi Electric MELFA RV-Series articulated arm industrial robot to create a novel form of expressive 3D printing. Recognising the increased demand for high-quality 3D printing technologies, O'Dowd and colleagues from the UWE have connected an articulated arm industrial robot to a print generation system with the intentions

of establishing a new aesthetic that surpasses the rigidity of the automated workflow of 3D printing.

La NASA expérimente un nouveau procédé d'impression 3D métal par ultrasons

07/08/2018 - www.primante3d.com

La NASA expérimente régulièrement de nouvelles méthodes et développe même sa propre technologie d'impression 3D métal. La méthode d'impression 3D imaginée par Fabrisonic s'inspire en fait du soudage par ultrasons bien connu des industriels. La technologie « Ultrasonic Additive Manufacturing (UAM) » développée par Fabrisonic est un procédé d'impression 3D dit semi-conducteur.

MATERIAUX

First rare earth-free MnAlC permanent magnet filaments

24/07/2018 - www.azom.com

The research by Dr. Alberto Bollero's group at IMDEA Nanociencia (Spain) and the company Höganäs (Sweden) holds promise for its implementation in advanced 3D printing of high-performance magnets for energy, automotive and aerospace applications. With this study, in collaboration with the company Höganäs (Sweden), the group at IMDEA has reported for the first time the synthesis and fabrication of a continuous rare earth-free MnAlC permanent magnet filament with application in bonding and advanced 3D printing technologies.

Victrex to release improved PAEK for industrial 3D printing

26/07/2018 - 3dprintingindustry.com

Victrex, a UK supplier of high performance polymers is preparing to market newly developed additive manufacturing materials. One will improve recycling for unsintered powder in selective laser sintering (SLS). In fused filament fabrication (FFF), the company will also produce a filament with better Z-strength than existing Polyaryletherketone (PAEK), a leading material among high-temperature thermoplastics like relatives PEEK and PEKK.

E3D Online and Victrex develop new PAEK material for additive manufacturing

02/08/2018 - 3dprintingindustry.com

UK-based E3D Online, an award-winning 3D printing technology developer and marketplace, and Victrex, a Lancashire-based manufacturer of high-performance polymers, have successfully created a formulation of polyaryletherketone (PAEK) filament for "lightly modified consumer" desktop FFF/FDM 3D printers. PAEK-based 3D printed parts from E3D Online and Victrex. Nevertheless, with E3D Online's high-performance extrusion systems, Victrex was able to develop a material with advanced properties of a PAEK polymer, while maintaining its printability.

MARKET / BUSINESS

CONTEXT reports decline in desktop 3D printing, industry disagrees

27/07/2018 - 3dprintingindustry.com

Desktop 3D printing is in decline claims new research by London based firm CONTEXT. "Shipments of Personal/Desktop 3D printers saw their first ever year-on-year drop in Q1 2018 with 3% fewer printers shipping globally than in Q1 2017," reads the report.

Making a Business Case for Additive Manufacturing

02/08/2018 - www.engineering.com

“Traditionally, people equate a business case with the cost model of a part,” said Gregg Wilson, principal engineer on the AddWorks design consulting team at GE Additive. Making a business case for additive manufacturing can be challenging. Making a business case for implementing additive manufacturing in production goes beyond looking at discrete parts. Additive Manufacturing Use Cases One of the best examples of the benefits of additive manufacturing comes from one of the most famous parts in the aerospace industry: the additive fuel nozzle for the LEAP jet engine.

3D Systems et CF Machining réunies autour d'une nouvelle plateforme d'impression 3D industrielle pour le métal

08/08/2018 - www.primante3d.com

C'est une annonce de taille qui vient d'être officialisée. CF Machining, une division du groupe industriel international [Georg Fischer AG](http://www.georgfischer.com), et 3D Systems, l'un des leaders mondiaux en impression 3D, ont annoncé leur coopération autour d'une nouvelle solution de fabrication additive métallique. Les deux sociétés ont en effet réuni leur compétence pour le développement d'une nouvelle génération de solutions d'impression en 3D, qui associeront le savoir-faire de 3D Systems en matière de production additive de métaux, et les compétences de GF Machining Solutions dans le domaine de la production soustractive de métaux.

HP Anchors Additive Manufacturing Center in China

10/08/2018 - www.engineering.com



“Everything starts with applications – and digital manufacturing innovators are leading the transformation of the \$12 trillion manufacturing sector by producing industrial-grade parts across industries on HP Multi Jet Fusion,” said Stephen Nigro, President of 3D Printing, HP Inc. “We are thrilled that Guangdong (Dali) 3D Printing Collaborative Innovation Platform is deploying HP Multi Jet Fusion technology at factory-scale to drive its business growth and accelerate industry innovation.

Hybrid AM Supply Chains: The Future of Manufacturing?

13/08/2018 - www.engineering.com

In the UFL model, as demand increased, the fixed costs of adding more machines to a single location became exorbitantly high—in the order of billions of dollars annually. To gauge the economic efficiency of this pattern, the researchers also applied a p-median model that used an average fixed cost limit of \$40 million annually. (Both the p-median and UFL models found similar annual cost breakdowns, but with the uncapacitated system producing higher total costs.

EVENEMENTS / ETUDES

McKinsey Global Institute identifies gap in Industry 4.0 adoption

25/07/2018 - 3dprintingindustry.com

From the recently developed automated FlexiFinish post-processing system from the MTC, to digital supply chains for 3D printers developed by INTAMSYS, the digitization of manufacturing processes, also known as Industry 4.0, is a recurring trend across the 3D printing industry. , into

the context of the entire ecosystem – and make technology decisions based on what will build a long-term competitive advantage

Additive Manufacturing Conference of China taking place in Hangzhou

24/07/2018 - www.metal-am.com

The Additive Manufacturing Conference of China (AMCC) 2018 is set to run from July 26–28, 2018 at Hangzhou International Expo Center, Hangzhou, Zhejiang Province, China. Guided by China's Ministry of Industry and Information Technology and the People's Government of Zhejiang Province, AMCC is organised by Xiaoshan District People's Government of Hangzhou Municipality and the Additive Manufacturing Alliance of China, in cooperation with CCID Conference & Exhibition Co.

Two weeks left to register for MAPP's Alloys for Additive Manufacturing Symposium 2018

27/07/2018 - www.metal-am.com

This year's AAMS will be hosted by MAPP, the EPSRC Future Manufacturing Hub, from September 3-4, 2018, at Inox, the University of Sheffield, UK. Led by the University of Sheffield, MAPP brings together leading research teams from the Universities of Leeds, Manchester and Oxford, and Imperial College London, together with an initial group of seventeen industry partners and six of the UK's High Value Manufacturing Catapult (HVMC) centres.

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