Today in Sliced, the 3D Printing Industry news digest, a 3D inkjet printer for electronics; the latest hardware and software releases at Formnext 2018; 3D printing helps improve cancer treatment and more.

Formnext 2018 previews

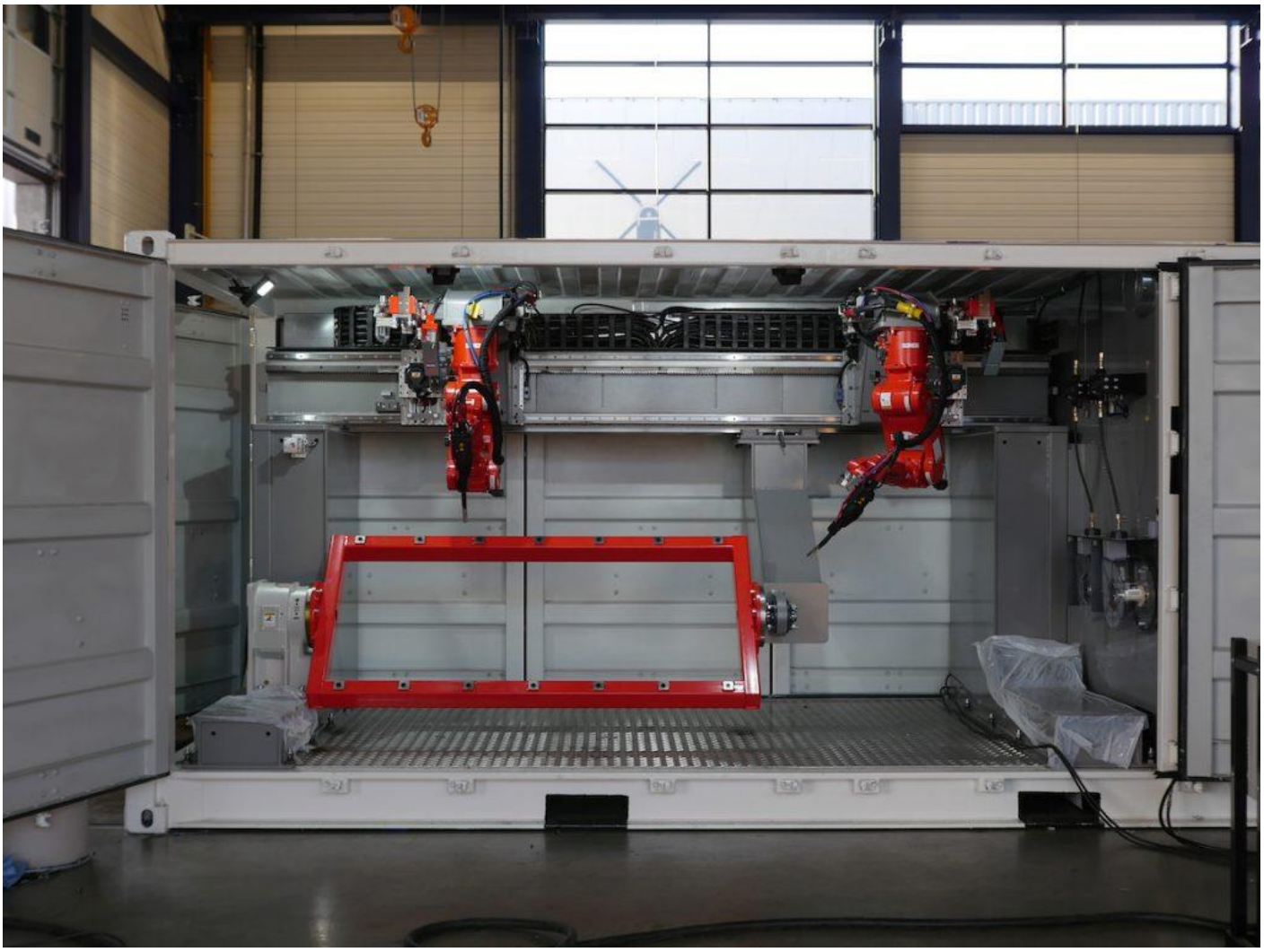
Linde Gases, a division of the Linde Group, a German engineering company, will present its ADDvance powder cabinet for metal materials used in additive manufacturing (AM) at Formnext in Frankfurt next week.

Techniplas, a Wisconsin-based injection molding company with additive manufacturing center headed up by Avi Reichental, will showcase its first concept vehicle created using new additive and generative technologies from Nexa3D, NXT Factory, and ParaMatters at Formnext 2018.

The concept vehicle created using additive manufacturing technologies. Photo via Techniplas.

Authentise, a provider of 3D printing technologies and services, is collaborating with award winning software company Autodesk to release an to create a seamless, integrated additive workflow for the Netfabb software. This integration will also be demonstrated at Formnext.

Furthermore, Autodesk has created an additive manufacturing “toolbox” for the construction industry, which consists of two Panasonic TS-950 robots from the Valk Welding group which use directed energy deposition (DED) additive manufacturing to produce large, strong and usable metal components. The toolbox comes in a portable shipping container.

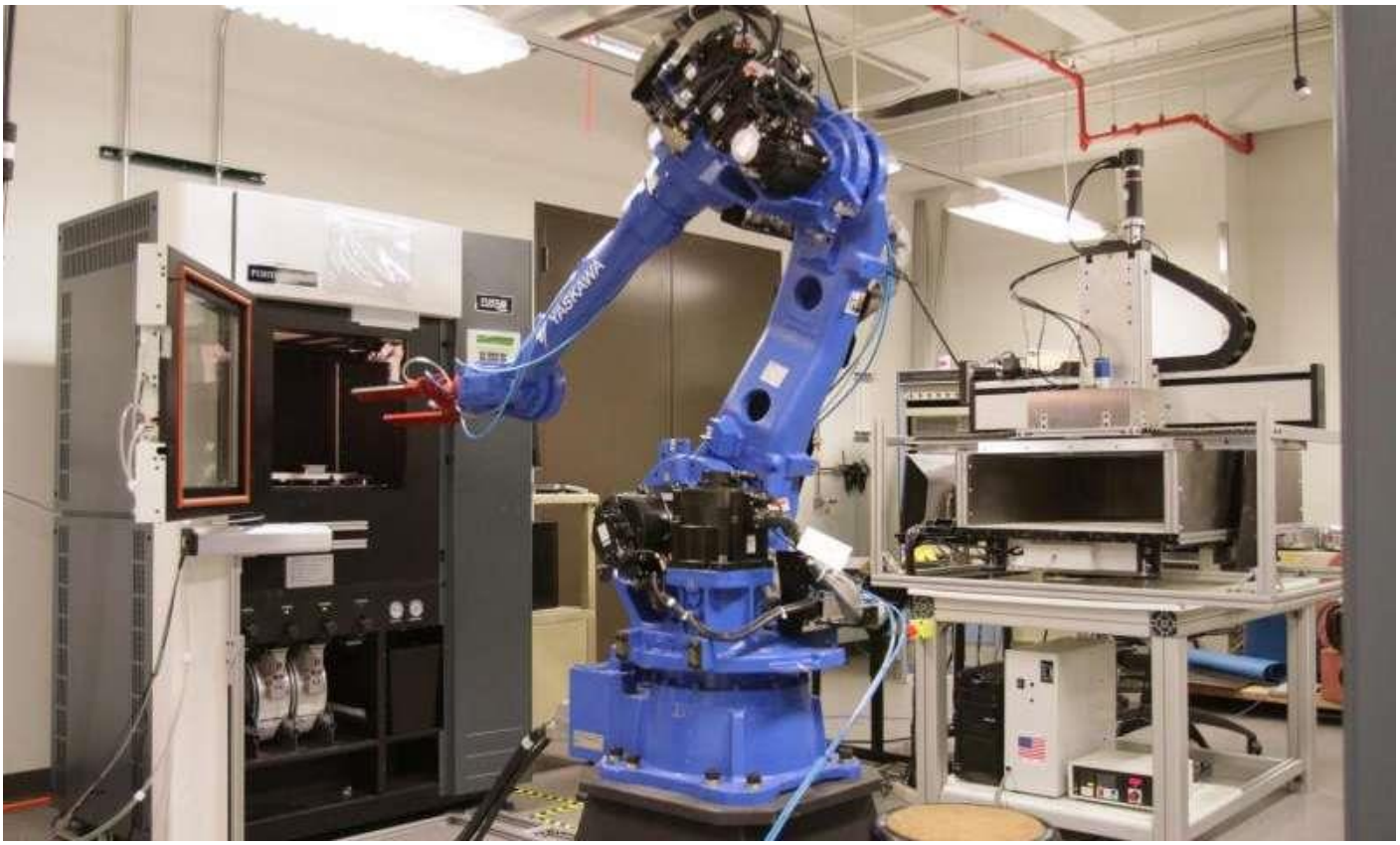

The Autodesk Toolbox.Photo via Autodesk.

3D printing and business

Northrop Grumman Corporation, an American global aerospace and defense technology company, will release its certified Selective Laser Sintering (SLS) additive manufactured Nylon 12 Database to America Makes to further the material's commercialization. Eric Barnes, Fellow, Northrop Grumman said:

> "OUR DECISION TO RELEASE THE NYLON 12 DATABASE WAS BASED ON WANTING TO ENHANCE AM SUPPLY CHAIN CAPABILITIES. WE FIRMLY BELIEVE THAT AMERICA MAKES HAS FACILITATED MORE COLLABORATION THROUGHOUT THE AM INDUSTRY AND MOREOVER, HAS ENABLED A BROADER USE OF AM WITHIN THE AEROSPACE SECTOR."

In addition, the University of Texas at El Paso (UTEP) has expanded its agreement with America Makes and will lead in the collection of critical performance data for the 3D printing industry while offering immense benefits to students. This agreement was originally signed in April 2015, making UTEP the first America Makes Satellite Center.



The University of Texas at El Paso (UTEP) W.M. Keck Center, one of America Makes' 3D printing satellite center. Image courtesy of JR Hernandez/UTEP

Based in New York, PostProcess Technologies and Rösler Oberflächentechnik, specialists of global finishing systems for traditional manufacturing, have partnered to develop automated post-print solutions to Europe. "The additive space is rapidly growing, especially in Europe, and as such, the demand for an automated post-printing solution is accelerating," said Bruno Bourguet, Managing Director, PostProcess Technologies International.

PV Nano Cell, a producer of conductive Sicrys digital inks and dispersions for 3D inkjet printing, will be present its first generation Printed Electronics dedicated printer JetPE I at the IDTechEx Show in Santa Clara, California next week.

3D Printed Lithophanes

Thomas Brook of Lithophane Maker, has created a free generation tool which can automatically attribute features such as frames and holes, to 3D printable lithophane models. Lithophanes are etched or molded pieces of artwork on transparent sheets of material, which display images when backlit with a light source.

According to Brook, this generation tool "will save you from having to make a lithophane, design or modify an

existing adapter, and combine the two in Meshmixer."

A CAD of a 3D printed lithophane using Brook's design tool. Image via Lithophane Maker.

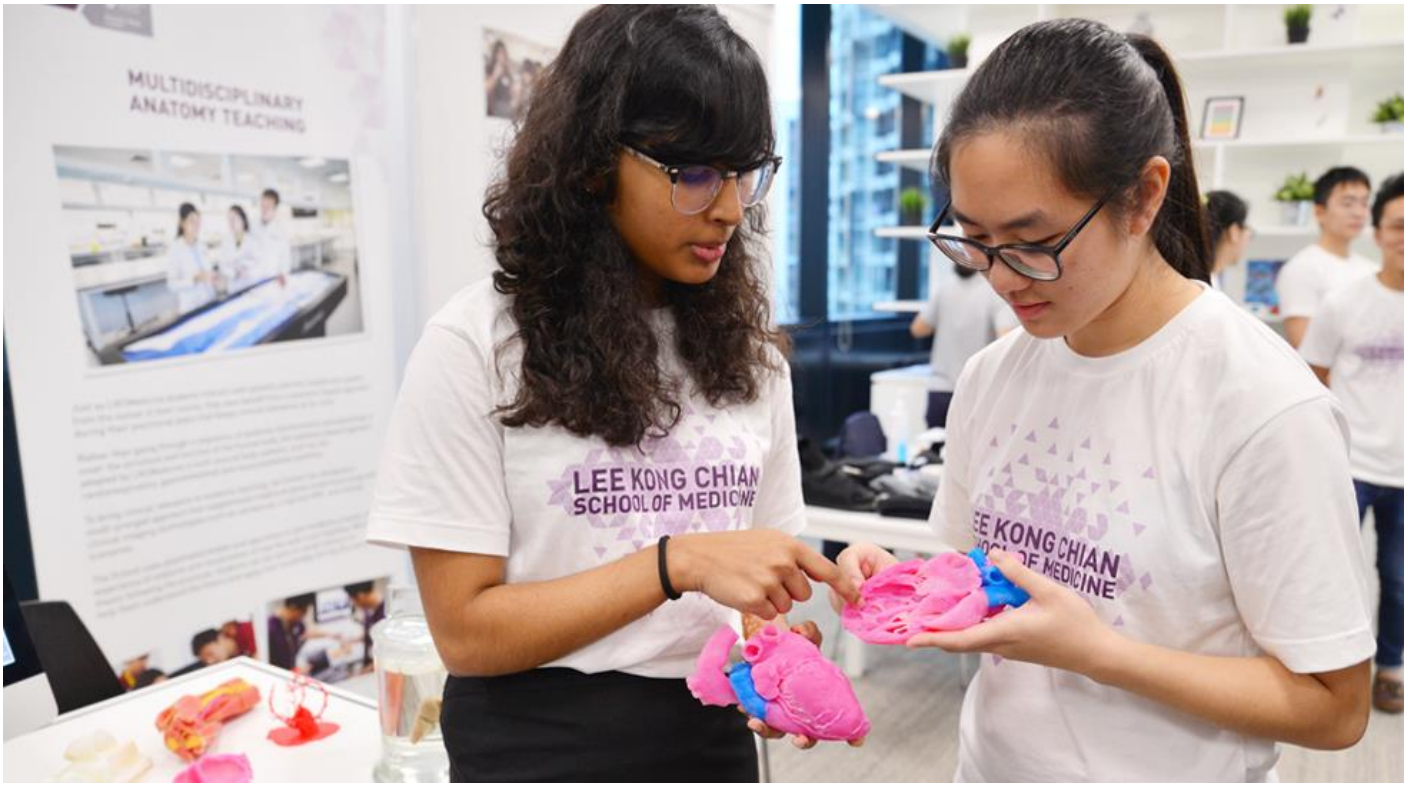
Hack3D at the CSAW games

New York University Tandon School of Engineering's annual CSAW games, the largest student-run cybersecurity event in the world, has expanded its events roster with a new contest called Hack3D which "explores vulnerabilities in 3D printing." In particular, the contest seeks to raise awareness of the need for anti-counterfeiting methods in additive manufacturing.

Competitors in the qualifying round were tested in reverse engineering a 3D CAD model. The Hack3D finalists as well as an elite corps of high school, college, and graduate students in other preliminary rounds now advance to the finals of the CSAW games.

Students at the Lee Kong Chian School of Medicine (LKCMedicine) a part of Nanyang Technological University, Singapore (NTU Singapore) and Imperial College London, are using 3D printed anatomical models as teaching tools for medical education.

This collaboration is part of the Transform Medical Education (Transform MedEd), two-day conference, which explores new pedagogical approaches with new technologies to shape "the future of medical education and healthcare practice."



Students at the Transform Medical Education (Transform MedEd) conference using 3D printed anatomical models. Photo via NTU Singapore.

A team from Louisiana State University (LSU) have developed 3D printed phantom models from CT scans for improved cancer treatment.

“If you have a store-bought phantom, it’s going to look like the average person, and it may not be at all relevant to [certain patients],” said Wayne Newhause, LSU’s Director of the Medical Physics Program. “You need to have a phantom that mimics those same anatomic characteristics [of the patient].”

“Our goal is to print a whole body, a 3D personalized phantom that mimics the properties of an actual patient.”


A 3D printed phantom model. Photo via LSU/Meagan Moore.

In other news, the 3D Pioneers Challenge (3DPC) is now accepting applicants for 2019. The platform encourages innovators in additive manufacturing, “who are breaking new ground in the field of 3D printing.”

3D printing and materials

SKILCRAFT, the trade name of the U.S. National Industries for the Blind (NIB), who recently unveiled the SKILCRAFT 3D business model now supplies its 3D printing filaments to North Central Sight Services (NCSS).

Finally, in a paper entitled "Preparation and Characterization of Poly(butylene succinate)/Polylactide Blends for Fused Deposition Modeling 3D Printing," a group of researchers from Tsinghua University demonstrate a new type of biodegradable material with high strength and toughness for FDM 3D printing.

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Featured image shows the sliced logo over a concept vehicle created using additive manufacturing technologies. Photo via Techniplas.