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| Bioabsorbable breast implants and robotic post-processing: Winners of the Formnext Start-up Challenge | Vineeta ManglaniPhone +49 (0) 711 61946297Vineeta.manglani@mesago.com[formnext.com](https://www.mesago.de/en/formnext/home.htm) |

**For the eighth time, the international Formnext Start-up Challenge has recognized young companies from the world of additive manufacturing for their innovative business ideas and technical developments. From the on-demand production of AM powders through degradable implants and efficient robotic post-processing: The award-winning innovations are shining examples of the high innovative power of 3D printing and the AM market. The international winners, who will all present themselves to the AM world at Formnext 2022, are Photosynthetic (Netherlands), Lattice Medical (France), Rivelin Robotics (UK), SphereCube (Italy) and Alpha Powders (Poland). The AM Ventures Impact Award also went to Lattice Medical.**

The innovations of these start-ups were selected both for the high level of creativity demonstrated in product development as well as the viability of the business models. The start-ups were able to provide proof of existing patents or patents pending and also demonstrated extremely promising applications.

Warsaw-based start-up Alpha Powders has developed and patented a technology for the on-demand modification of polymer powders. Similarly working with minute dimensions is Dutch start-up Photosynthetic, which specializes in fast and cost-effective micro 3D printing. British start-up Rivelin Robotics, on the other hand, has its sights set on improving efficiency in the additive process chain. Its NetShape robots offer the potential of reducing operating costs and errors in post-processing by a factor of 10. For Italian start-up SphereCube, greater stability is the focus. The company has developed 3D printing technology that is able to process continuous fiber composites, thus enabling the automated manufacture of products from high-performance composites in any desired shape. Biomedical start-upLattice Medical has developed a disruptive, bioabsorbable, and personalized implant for breast reconstruction and breast augmentation using patented 3D technology, which encourages the natural regeneration of adipose tissue without the introduction of foreign bodies.

With its submission, Lattice Medical was also able to secure the AM Ventures Impact Award, which honors particularly sustainable approaches. In addition to the innovative design and production method, AM Ventures was particularly impressed by the minimization of risks that can occur with traditional implants, the technical expertise of the team, and the sound research results that support the application.

Sascha F. Wenzler, Vice President of Formnext at organizer Mesago Messe Frankfurt GmbH: “Every year, the start-ups in the AM industry take technology and application innovations to the next level and continue to impress with the rising quality of their developments and business planning. Once again, these companies have showcased the great potential of this industry, highlighting the fact that the sector produces significant developments that, in the future, will influence our industry, medicine, and other areas of life.”

The Formnext Start-up Challenge 2022 recognizes inventive, viable business ideas from companies founded within the last five years. The distinguished judging panel consists of prominent representatives from the realms of industry, science, media, and investment. The winners will each have a dedicated exhibition booth and will also present themselves at the Formnext Pitchnext event on Tuesday 15 November 2022.

**THE WINNERS OF THE FORMNEXT START-UP CHALLENGE**

**On-demand SLS powder modification**
Warsaw-based start-up Alpha Powders (booth 12.0-B81G) has developed and patented a technology for the pulverization, spheroidization and on-demand modification of polymer powders. The company’s current focus is the development of a compact device specifically for R&D laboratories working on new SLS powders. The prototype has been tested with a variety of materials, including polyamides, TPU, or polyolefin powders, and has been proven to reliably produce spherical SLS powders by dry process. The company continues to develop this technology and aims to offer pilot and production scale solutions in the coming years.

**3D-printed bioabsorbable implants to improve healing**

Lattice Medical (booth 12.0-B81B) is a biomedical start-up that was founded in October 2017. The French company has developed a patented 3D technology in cooperation with CHU Lille-France that enables the natural regeneration of adipose tissue, bringing enormous improvements in breast implant procedures, for example. The Mat(t)isse bioprosthesis is made of 3D-printed biomaterials, is fully bioabsorbable, and is adapted to the individual morphology of the patient. Breasts are thus entirely reconstructed from the patient’s own tissue, and no foreign bodies are introduced.

**Fast micro 3D printing**

Photosynthetic (booth 12.0-B81H) specializes in fast and cost-effective micro 3D printing. 3D microstructures are generally fabricated using conventional methods such as two-photon lithography (TPL), stereolithography (SLA), and optical grayscale lithography (OGL). The Dutch start-up’s patented technology, on the other hand, uses an optical hardware system, resins based on single-photon polymerization, and computer algorithms to control the printing process. Photosynthetic’s new micro 3D printer enables fast microfabrication (50 mm3/hour) in high-resolution mode (<1 micron).

**Significant cost savings in post-processing**

With its NetShape robots, British start-up Rivelin Robotics(booth12.0-B41) has developed a solution for the rapid post-processing of additively manufactured metal parts and components. In many metal AM applications, post-processing contributes upwards of 30% of unit cost per part. For support removal and targeted finishing, Rivelin has developed NetShape Robots, driven by the powerful NetShape control software which uses both machine learning and traditional deterministic control theory. The result is an automated support removal solution that reduces defects by 90%, results in a 10-fold reduction in operational costs, and eliminates human risk and variability.

**Improved AM composite bonding**

Italian start-up SphereCube (booth 12.0-B81A) has developed 3D printing technology that is able to process polymer-based composite materials or a thermosetting matrix with continuous fiber reinforcement, thus enabling the automated manufacture of products from high-performance composites in any desired shape. According to the company, its technology differs from the processes currently available by curing the plastic under heat, which improves wetting and bonding of the fiber reinforcements, matrix, and the 3D-printed layers.

Further information is available at [www.formnext.com](http://www.formnext.com).

**Background information on Formnext**

Formnext is the leading trade fair for Additive Manufacturing and the next generation of intelligent manufacturing solutions. It focuses on the efficient realization of parts and products, from their design to serial production. Formnext shows the future of innovative manufacturing. Formnext is organized by Mesago Messe Frankfurt GmbH. ([formnext.com](https://www.mesago.de/en/formnext/home.htm?ovs_tnid=0))

**About Mesago Messe Frankfurt**

Mesago, founded in 1982 and located in Stuttgart, specializes in exhibitions and conferences on various topics of technology. The company belongs to the Messe Frankfurt Group. Mesago operates internationally and is not tied to a specific venue. With around 150 members of staff Mesago organizes events for the benefit of more than 3,300 exhibitors and over 110,000 trade visitors, conference delegates and speakers from all over the world. Numerous trade associations, publishing houses, scientific institutes and universities work with Mesago closely as advisers, co-organizers and partners. ([mesago.com](https://www.mesago.de/en/Mesago/home.htm))

**Background information on Messe Frankfurt**

The Messe Frankfurt Group is one of the world’s leading trade fair, congress and event organisers with their own exhibition grounds. With a workforce of 2,200 people at its headquarters in Frankfurt am Main and in 28 subsidiaries, it organises events around the world. As in the previous year, annual sales for 2021 were significantly lower owing to the COVID-19 pandemic: approximately €154 million compared with Group sales as high as €736 million in pre-pandemic 2019. We serve our customers’ business interests efficiently within the framework of our Fairs & Events, Locations and Services business fields. Sustainable business practices are a central pillar in our corporate strategy and strike a healthy balance between ecological and economic interests, social responsibility and diversity. Another of Messe Frankfurt’s strengths is its powerful and closely knit global sales network, which covers around 180 countries in all regions of the world. Our comprehensive range of services – both onsite and online – ensures that customers worldwide enjoy consistently high quality and flexibility when planning, organising and running their events. We are using our digital expertise to develop new business models. The wide range of services includes renting exhibition grounds, trade fair construction and marketing, personnel and food services.

With its headquarters in Frankfurt am Main, the company is owned by the City of Frankfurt (60 percent) and the State of Hesse (40 percent).

For more information, please visit our website at: [www.messefrankfurt.com](http://www.messefrankfurt.com)

**Background information on TCT (Content Partner)**

Established in 1992, TCT Group’s mission is to accelerate design-to-manufacturing innovation. Through global trade shows, conferences, magazines, websites and digital products TCT delivers business-critical insights on the technologies that help manufacturers make better products, more quickly and cost-effectively. Through the TCT Awards TCT celebrates the most innovative products and applications across the design-to-manufacturing process chain. The TCT Group is owned by Rapid News Publications Ltd, part of Rapid News Group. ([thetctgroup.com](https://www.thetctgroup.com/))

**Background information on the Working Group Additive Manufacturing (Honorary Sponsor)**

Within the Working Group Additive Manufacturing, about 170 companies and research institutes collaborate under the direction of the German industry federation VDMA. Here, plant engineers; component and material suppliers; industrial companies that work with metals and plastics; service providers in software, manufacturing, and processing; and numerous researchers all work toward the same goal: the industrialization of additive manufacturing techniques. ([am.vdma.org](https://am.vdma.org/startseite))