



Microlight3D prints tiniest Statue of Liberty using new 3D microprinting feature

French firm commemorates Inauguration Day with replica of statue in miniature to demonstrate breakthrough in height limitations of micron-sized objects, while maintaining high-resolution

Grenoble, France, January 20, 2021 – Microlight3D, a specialty manufacturer of high-resolution micro-scale 2D & 3D printing systems for industrial and scientific applications, today announces a new 3D microprinting feature that breaks through the height limitation of micron-sized structures, while maintaining micrometric resolution.

To demonstrate its new [Long-range Z](#) feature, Microlight3D printed the world's [tiniest Statue of Liberty](#), a replica measuring 1.8mm high by 0.6mm wide, in commemoration of Inauguration Day. With Long-range Z, Microlight3D customers will be able to 3D fabricate minute structures up to 10mm high. Previously, the height of objects was limited to 0.3mm.

Breaking this height limitation means that Microlight3D has addressed the demands of researchers and industrial developers working on applications in mechanical micro-parts, meta-materials, medical devices etc. who need to make objects a few millimeters high.

“Users will also be able to make alignments on a pre-existing pattern and print exactly where they want. We had great fun positioning the replica of the statue on the word ‘Liberty’ on a United States one-cent coin.” said Philippe Paliard, co-founder of Microlight3D. “Researchers and industrial developers are looking to work on metallic or silicon wafers. Our enhanced 3Dmicroprinting system, compatible with a wide range of materials and substrates, will allow them to micro-fabricate structures they couldn’t before; they will marvel at the ability of our [μFAB3D-Advanced 3D-microprinter](#) to align the laser and print on the tip of optical fibers for micro-optics applications.”

Innovation

Microlight3D printed the statue directly onto the coin to demonstrate that its technology is compatible with very different printing substrates, notably metallic and opaque substrates.

The actual statue was made with OrmoGreen, a polymer doped with silica nanoparticles - the main component of glass. OrmoGreen, developed by Microlight3D, gives material glass-like properties such as rigidity and high chemical and thermal resistance. This polymer has shown to be ideal for making taller structures with micrometric resolution.

Application

Users can produce mechanical micro-parts and meta-materials enabling new features in terms of rigidity, elasticity, lightness and reaction to stress. They include medical devices, such as stents and micro-needles for transdermal injection, as well as micro-optics used as lenses on optical fibers, connectors and innovative micro-endoscopes, among others.

Note to editor

Microlight3D's technique is based on two-photon polymerization, consisting of a green pulsed laser (operating at 532 nanometers wavelength), which combined with ultra-precise moving stages creates 3D-objects in a photoresist with sub-micron resolution. A simple solvent bath removes the unpolymerized resin.

To demonstrate its capabilities, Microlight3D has printed miniatures of other objects to commemorate events: New Year - a pyramid of the tiniest [champagne flutes](#) and for the second season of Mandalorian – a replica of the [Millennium Falcon](#).

About Microlight3D

Microlight3D is a manufacturer of high-resolution micro-scale 2D & 3D printing systems. The company enables scientists and industrial researchers with new design needs to produce the most demanding precision micro parts in any geometric or organic shape, with a flawless finish. By combining 2D & 3D microprinting techniques, Microlight3D offers customers more flexibility in creating larger complex parts. It aims to provide faster and more complex micro-fabrication systems for tomorrow's applications. Microlight3D's equipment is designed for application in micro-optics, microfluidics, micro-robotics, meta-materials, cell biology and microelectronics. Microlight3D was founded in 2016, following 15 years' research and development of its 3D microprinting technology at Grenoble Alpes University (UGA). The company is located in Grenoble, France.

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