

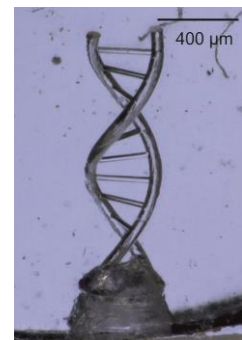
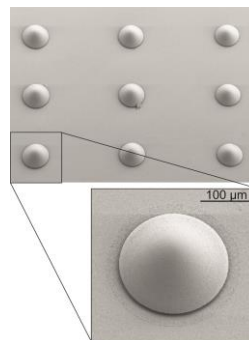
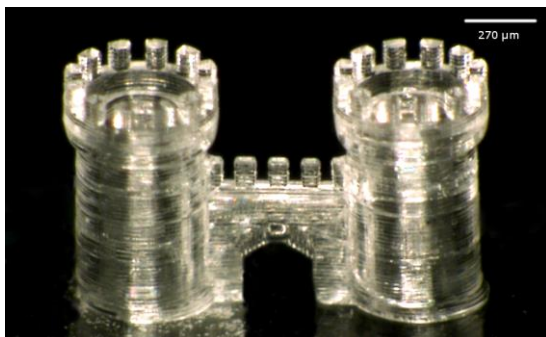
3D printing of Glass at Rapid.Tech + FabCon 3.D

The Start-up Glassomer presents high-resolution 3D printed glass parts at Rapid.Tech + FabCon 3.D

3D printing is becoming increasingly important for industrial fabrication and is an integral part of modern manufacturing strategies, commonly known as Industry 4.0. While 3D printing often meets the requirements regarding size and resolution, the range of materials available remains limited and is often the restricting factor for industrial use of the technology. Today, primarily polymers and metals are used for 3D printing. Glass is a very important material that plays a major role for modern society and research. Architecture, flasks and containers, medical components, compact optics for smartphones and tablets, eyeglasses and numerous other applications would be unthinkable without glass. Digitalization as well as the visions of future generations of photonic components for supercomputers relies on data transfer technology based on modern glass fibres.

Glassomer GmbH is a pioneer in the field of additive manufacturing of glass and has introduced the Glassomer Process, a fundamentally new technology for generating microstructured glass components. This technology allows for the world's first high-resolution 3D printing of glass. The Glassomer Technology is based on new materials, termed Glassomers, which are composed of glass particles in a liquid that can be hardened by light or heat. Glassomers can be processed and shaped in commercially available 3D printers. The resulting parts are processed in an oven, resulting in full-density transparent glass parts. Shaping of Glassomers is thus analogous to classical shaping of polymeric materials, but the resulting product is real glass. With the Glassomer process glasses can now be structured and shaped just like polymers. Besides 3D printing, Glassomers may also be structured by other classical polymer process technologies – the technology enables structuring of glasses by hot embossing or roll-to-roll replication. In the future, high-definition 3D printing and structuring of glasses will enable the generation of high-resolution structures like three dimensional photonic crystals, metamaterials, microstructured optical couplers and complex microlenses.

With the microfabrication of glass components by 3D printing the Glassomer GmbH is a finalist of both Start-up competitions of the Rapid.Tech + FabCon 3.D Hub, the „3D Pioneers Challenge“ and the „Rapid Tec Start-up Award“.



Glassomer GmbH: Micro-structuring of glass by 3D printing

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