

# Printing Ceramic Parts on Your Own

The company 3DCeram is an unrivalled pool of expertise in the field of materials and 3D printing processes for ceramic parts with complex architectures. Leveraging its unique know-how, 3DCeram is sharing its know-how and offers its customers CERAMAKER, a ceramic 3D printing unit. The company also designed a dedicated assistance and support service so that its clients can acquire the necessary know-how to produce parts independently.



Fig. 1  
Ceramic 3D printing unit CERAMAKER

## Introduction

For more than 10 years now, 3DCeram has been using 3D printing technology to manufacture ceramic parts and it has been proposing a comprehensive offer to assist and support its customers: help in choosing the type of ceramic, support during the preparation of specifications, development of the CAD file for the creation of a part etc.

## Keywords

additive manufacturing,  
laser-stereolithography

The unique 3D printing process developed by 3DCeram allows ceramic parts to be developed with the same properties as those produced by machining, injection moulding or pressing. To get the best of it, 3DCeram offers a range of ceramic formulations enabling parts to be produced for applications such as luxury goods, biomedical applications, electronics, aeronautics, etc. The quality of ceramic materials formulated by 3DCeram, ceramic pastes dedicated to 3D printing, are revolutionising 3D printing to

enable functional parts to be produced very quickly.

## CERAMAKER 3D printing unit

3DCeram developed and produced the CERAMAKER printer using its knowledge of ceramics: since 2011, the company has been using this printer for the production of prototypes, one-off parts and small runs. Whatever their final application is (luxury goods industry, biomedical or industrial applications), these parts are characterised by high precision production and design that only 3D printing makes it possible to produce. Production doesn't require tooling and lead times are short.

The CERAMAKER 3D printer uses laser stereolithography. Using laser makes it possible to provide a steady and constant output for perfect polymerisation, guaranteeing the most homogeneous raw material possible. Thus it ensures a higher density of the fired material, a better resistance of the finished part and a more precise control of dimensional changes of the part during firing.

In order to help customer get the best of ceramic 3D printing 3DCeram created a scalable offer that is suited to customer experience: in addition to the printer itself, it includes a software suite (design, CAM, etc.), equipment (cleaning hood, kiln, etc.) and a full service package to learn to use the printer.

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**3DMIX: benefit from ceramic pastes that are best suited to your project**

The formulation of the ceramic paste required for printing is the key. In choosing CERAMAKER technology, customer gain access to 3DCeram's know-how. The R&D team of the company determined formulations and ceramic processes that are tailored to customer's needs, according to the characteristics to be obtained. Alumina, zirconia, hydroxyapatite/TCP, aluminium nitride, mullite and cordierite are already formulated to fit with CERAMAKER printer. The rheology, particle size, or even reactivity, of each formula is adapted to the printer, guaranteeing the user the best results.

**Expert incubator: assistance and support services to accelerate user's independence**

3DCeram is aware that, like any new technology, ceramic 3D printing may seem complicated. Therefore, the company offers a full range of services to support its customers throughout the development of your first projects, at their own pace and according to their needs.

**Create on Your Own** service will help the design office to think 3D printing at the earliest stages of the development of parts, providing guidelines for creation, offering a training on how to use the software suite required for the various stages of printing and a training on CAD dedicated to 3D printing, including the design of part supports.

**Get Started** service includes training on the 3D printing process and how to use the printing unit.

With CERAMAKER 3D printer and its dedicated support, customers become independent and keep control of their project by monitoring the entire production chain. Producing 3D printed parts on their own, they can have their first parts (prototype) in a very short space of time and approve the design, they can verify the feasibility of their project (testing a functional prototype) and test out a new market without having to take the risk of investing in expensive tools. Let's think ceramic 3D printing!

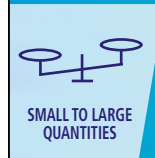
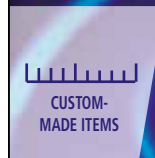
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