sinto 3DCERAM

3dceram.com

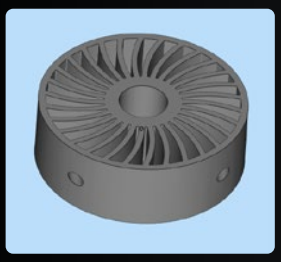
AM Process Provider for technical ceramics

Additive Manufacturing of ceramics

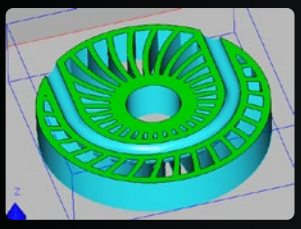
3DCeram introduces CERIA, an Artificial Intelligence system, making ceramic 3D Printing easier for manufacturers.

3DCeram is taking a significant step forward in the additive manufacturing industry by integrating CERIA, an **Artificial Intelligence** system, into its ceramic 3D printers.

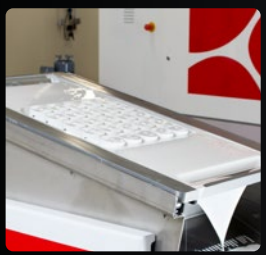
This development will bring advanced ceramic AM capabilities within reach of industrial users, addressing the complex demands of production-scale manufacturing (learn more p.10).



Creation by CAD



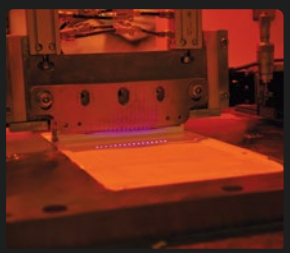
Slicing of the parts before printing



Recycling

Functional part

CAD file check and generation of tailored parameters CERIA®



3D printing

Debinding and sintering

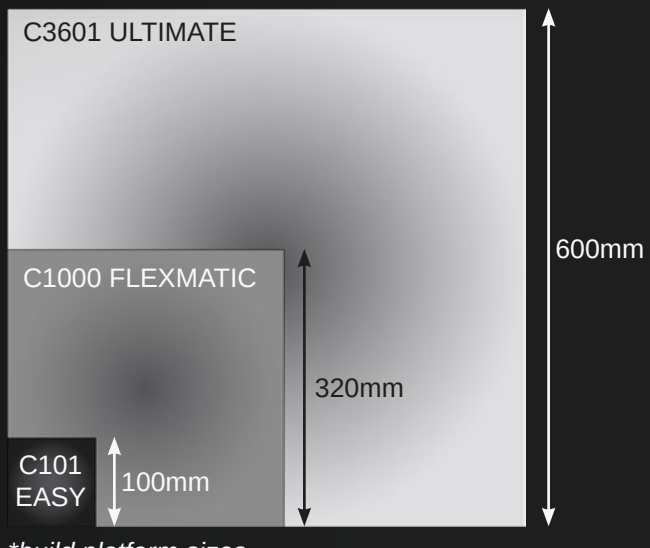
C101 EASY FAB

To develop, produce, and scale up to mass customization.

- Develop your parts on a C101 EASY FAB to scale up onto a C1000 FLEXMATIC or a C3601 ULTIMATE
- One-piece granite structure combining mechanical and optical elements for long-term stability
- Accurate slurry flow rate controlled via a peristaltic pump
- A pressurized tank feeding the optimal quantity of material required for the printing run (similar feeding process to the C3601 ULTIMATE and C1000 FLEXMATIC)
- Equipped for monitoring a production in real time
- Build platform: 100 x 100 x 150 mm
- CERIA, the AI by 3DCeram is available on the machine

SCALE UP ON TO THE C1000 FLEXMATIC OR THE C3601 ULTIMATE TO REACH

MASS CUSTOMIZATION



**build platform sizes*

C1000 FLEXMATIC

An authentic industrial ceramic 3D printing machine.

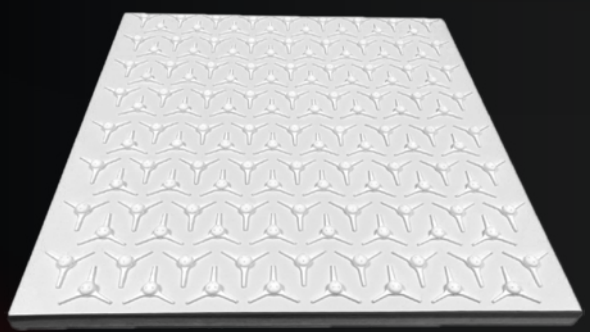
- 1 or 2 lasers to reach the adapted productivity level
- A build platform that meets the needs for versatility: large parts and series of parts - 320 x 320 x 200 mm
- A removable tank that allows the processing of printed parts in a semi-automated line
- User-friendly, no engineering skills required to start a printing run
- Automation of the recycling process to recover uncured material and a semi-automated cleaning step
- Easy and fast post-processing: no need for lengthy post-processing tasks thanks to the Top-down SLA technology requiring few or no supports
- CERIA Live embedded, which drives the machine and allows for local slurry deposits whilst 3D printing

Designed for production, as a semi-automated line.

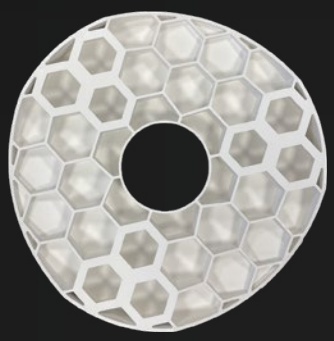
C3601 ULTIMATE

For mass production or big parts.
Scale up from the C101 EASY FAB.

- 4 lasers
- Build platform of 600 x 600 x 300 mm adapted to print large parts as **a singular piece** and to perform serial printing
- The largest printing platform on the AM technical ceramic market
- Stereolithography process
- Reduced unit price per part
- Optimized recycling time
- CERIA Live embedded, which drives the machine and allows for local slurry deposits whilst 3D printing



Serial printing



Printed as singular piece Ø 500 mm

Machines

C101 EASY LAB

The freedom to develop your own process.

Dedicated to R&D, the C101 EASY LAB opens up opportunities to:

- develop materials with a low quantity of slurry
- qualify designs
- print showcase parts
- build platform: 100 x 100 x 150 mm
- Lab mode for your developments
- 15 mL of ceramic slurry to start a printing run with the SAM option
- option: smaller build platform measuring 60 x 60 x 60 mm

Internal view

SAM option (Small Amount of Material)

C101 HYBRID

Print 2 materials simultaneously on the same layer.

The second material could be a ceramic, a metal or a polymer.

Advantages of this hybrid system are multiple:

- The deposition of the second material can be adjusted according to your needs and specifications.
- Hybrid functions are integrated into the CPS 2.0 software (one software to control the printer and the hybrid system).
- A multi-technology machine for your project developments.

3DMIX

We offer a wide range of oxide and non-oxide formulations that meet the high-performance properties required by demanding applications.

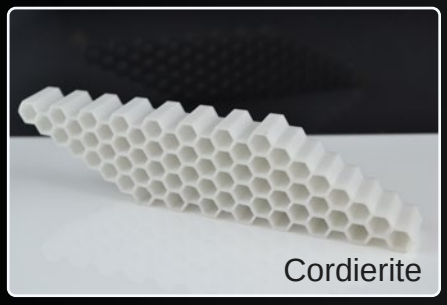
OXIDE

- Zirconia 3Y: excellent mechanical properties and chemical inertness
- Zirconia 8Y: an ionic conductor used for fuel cell
- Alumina Toughened Zirconia: resistance to wear, thermal shock, and is biocompatible
- Silica: for investment casting use and optical applications
- Alumina: good mechanical behaviour and thermal conductivity
- Hydroxyapatite: chemical composition close to bone for a good osseointegration in biomedical applications
- Tricalcium phosphate: chemical composition close to bone and resorbable, for biomedical applications
- Cordierite: low CTE and thermal conductivity, wear resistant, good for optical parts for aerospace applications
- Silicore DS/SX (silica-based ceramic): high mechanical resistance, porous ceramic, easily dissolvable for investment casting use

NON-OXIDE

- Silicon nitride: very resistant, low density, excellent resistance to thermal shocks, wear and corrosion resistance as well as good electrical insulation
- Aluminium Nitride: thermal conductor, chemically resistant, and a good electrical insulator

Industrial quality 3D printing ceramic materials for 3DCeram's printers.


Cordierite

Silicore

Tricalcium Phosphate

Zirconia 8Y

Aluminium Nitride

Services

CERIA® | **Transferring technology with artificial intelligence for 3D printing success.**

The groundbreaking AI Solution

Developed specifically to meet industrial needs, CERIA aims to accelerate the adoption of 3D ceramic printing across industries.

Why choose CERIA ?

- Streamlined printing preparation: simplify your workflow
- Empowered design rules: optimize your parts
- Custom-made recommendations: tailored to industrial requirements
- Maximized productivity: increase your manufacturing capacity
- Decreased production costs: enhance your ROI

Simplify, Create, Perform

CPS 2.0

The CPS 2.0 software developed in alignment with the requirements of 3D printing and the goals of development and production, adhering to 3DCeram's ‘‘From Lab to Fab’’ philosophy.

A simple and user-friendly interface, to optimize the process from designing to printing, CPS 2.0 provides two levels of usage:

- C-PRINT
- C-PERFORM

A versatile software to prepare your files for 3D printing on Ceramaker printers. It is an integrated plug-in, developed by 3DCeram, to edit your STL file and make the CAD file preparation much easier.

BUILD-IT

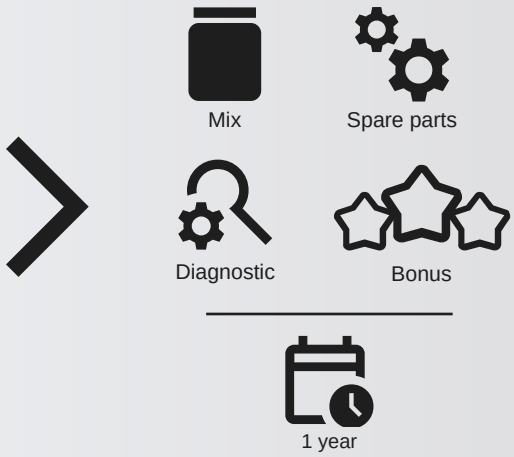
We do more than provide 3D printers; we deliver a true expertise-sharing experience built on 20 years of know-how.

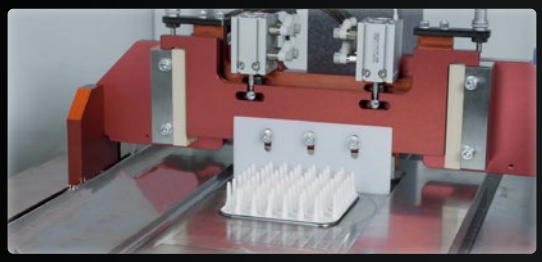
C-SMILE

C-Smile is 3DCeram's new loyalty and support program designed to adapt to each customer's real-world activity. With every renewal, you earn C-Smile points that can be used the way you choose.

Your benefits:

- 100% ROI: every point is usable — no waste.
- Full flexibility: choose what fits your needs.
- Bonus points for yearly renewal, rewarding loyalty.
- Simplified process: quick requests by email, no heavy admin.

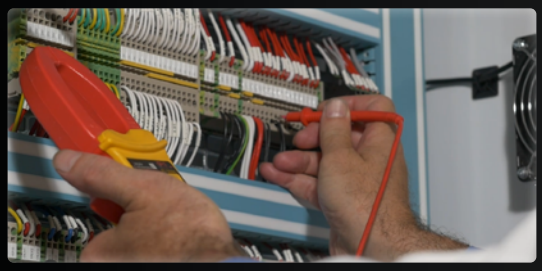




TRAINING

A training combines theory and practical sessions:

- 3D ceramic pre-processing
- Ceramaker operation & maintenance (technical training)
- Commissioning & on-site training



INSTALLATION & MAINTENANCE

We provide tailored maintenance services for each Ceramaker printer to ensure reliability.
The printers' installation is done by our technical team on site or by one of our DSQ - Distributor Service Qualified - trained and experienced to start up the machines.

DISTRIBUTOR SERVICE QUALIFIED

Through our network of DSQ - Distributor Service Qualified - all over the world, we manage installation and support services:

- for industrials who need to think in mass customization terms
- for manufacturers who are looking to produce in short series
- for universities and the need to develop and scale-up

"Regular maintenance is crucial for optimal performance of your Ceramaker printers."

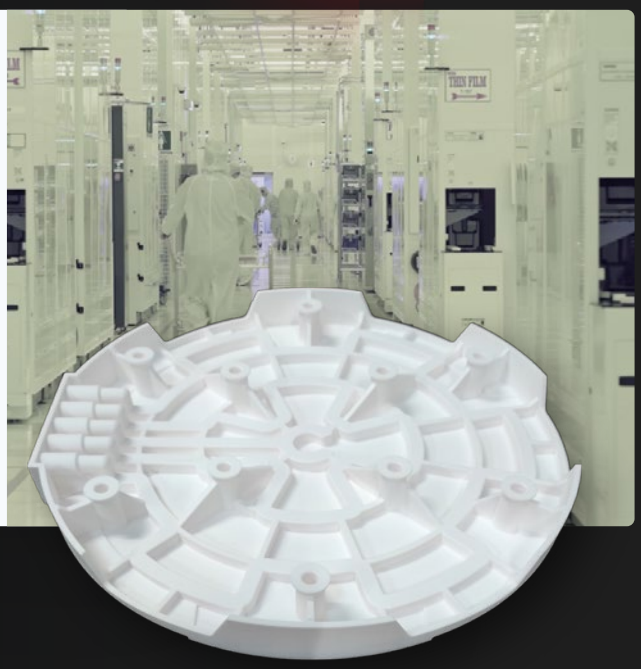
Applications

3DCeram has developed and extended their expertise to serve demanding applications such as:

Semiconductors

In the semiconductor industry, 3D printed ceramic components are increasingly utilized due to their exceptional thermal, chemical, and electrical properties.

Their durability and resistance to extreme environments make them ideal for applications in semiconductor manufacturing, enhancing performance and reliability in processes like etching, deposition, and wafer handling.



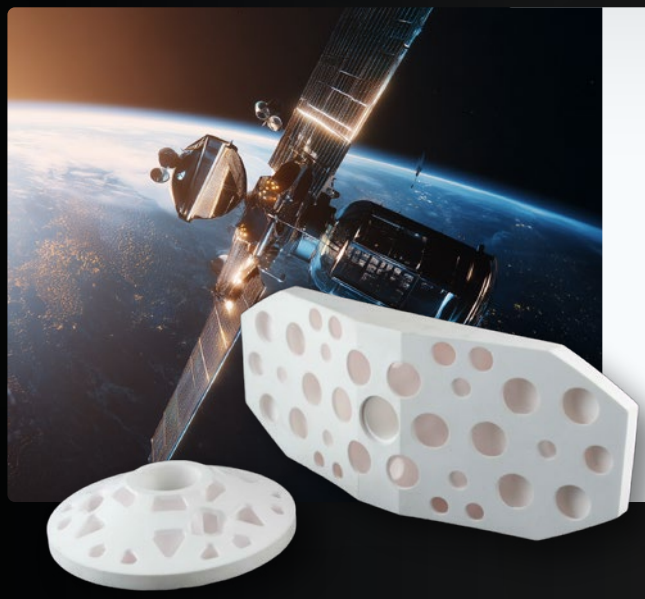
Green hydrogen

Green hydrogen is a key initiative for achieving the reduction of CO_2 emissions in the world.
The corrugated structure increases the surface area for better exchange, enhancing the overall efficiency of the hydrogen production process, especially under high-pressure conditions.

This corrugated design significantly improves the mechanical strength of the cells by withstanding two types of pressure both at the inlet and the outlet.

Biomedical

For 20 years, 3DCeram has been at the forefront, developing advanced printers and materials like HAP and TCP. 3D printed implants enhance osseointegration making it ideal for applications in dental, orthopedic, and reconstructive surgery.



Aerospace / New space

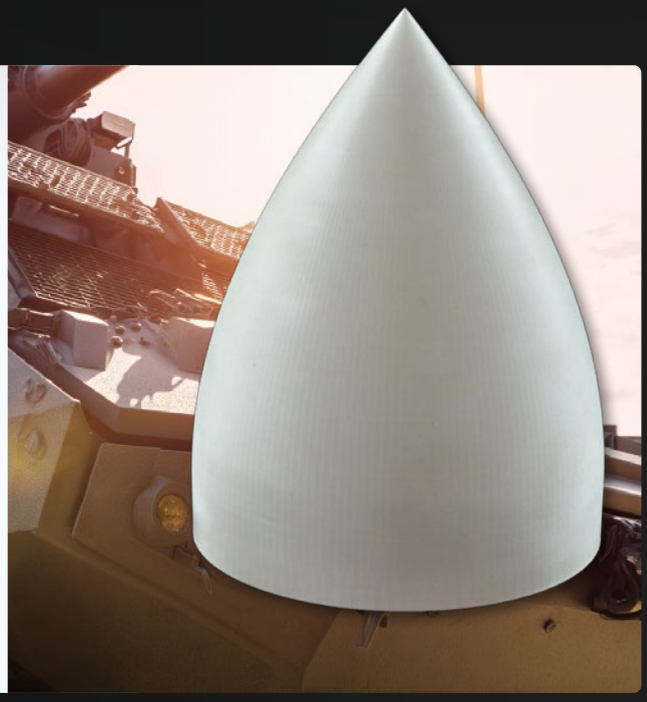
Additive manufacturing has also been embraced by early adopters, particularly in the aerospace industry. For:

- scientific instruments
- ceramic antennas and supports
- optical instruments
- thrusters...

Defence

In the defence sector, ceramic 3D printing addresses the most demanding requirements in terms of strength, reliability, and resilience.
Components such as radomes, thermal protection systems, and structural supports benefit from ceramics' unique combination of high mechanical strength, lightweight properties, and resistance to extreme temperatures and harsh environments.

By enabling complex, customized geometries with SLA 3D printing, 3DCeram provides innovative solutions that enhance performance and reliability in critical defense applications.



31 Partners worldwide

● Distributor Service Qualified (DSQ)

Through our network of DSQ - Distributor Service Qualified - all over the world, we manage installation and support services:

- for universities with the need to develop and scale-up
- for industrials who need to think in mass customization terms
- for manufacturers who are looking to produce in short series

sinto 3DCERAM

Connect to **3dceram.com**

3DCeram

@3DCeramSINTO

3DCeram Sinto Sintokogio Group
4, rue du Parc Maison Rouge
ZA Maison Rouge
87270 Bonnac-La-Côte
Email : info@3dceram.com
Tel. : +33 (0)5 55 04 10 90