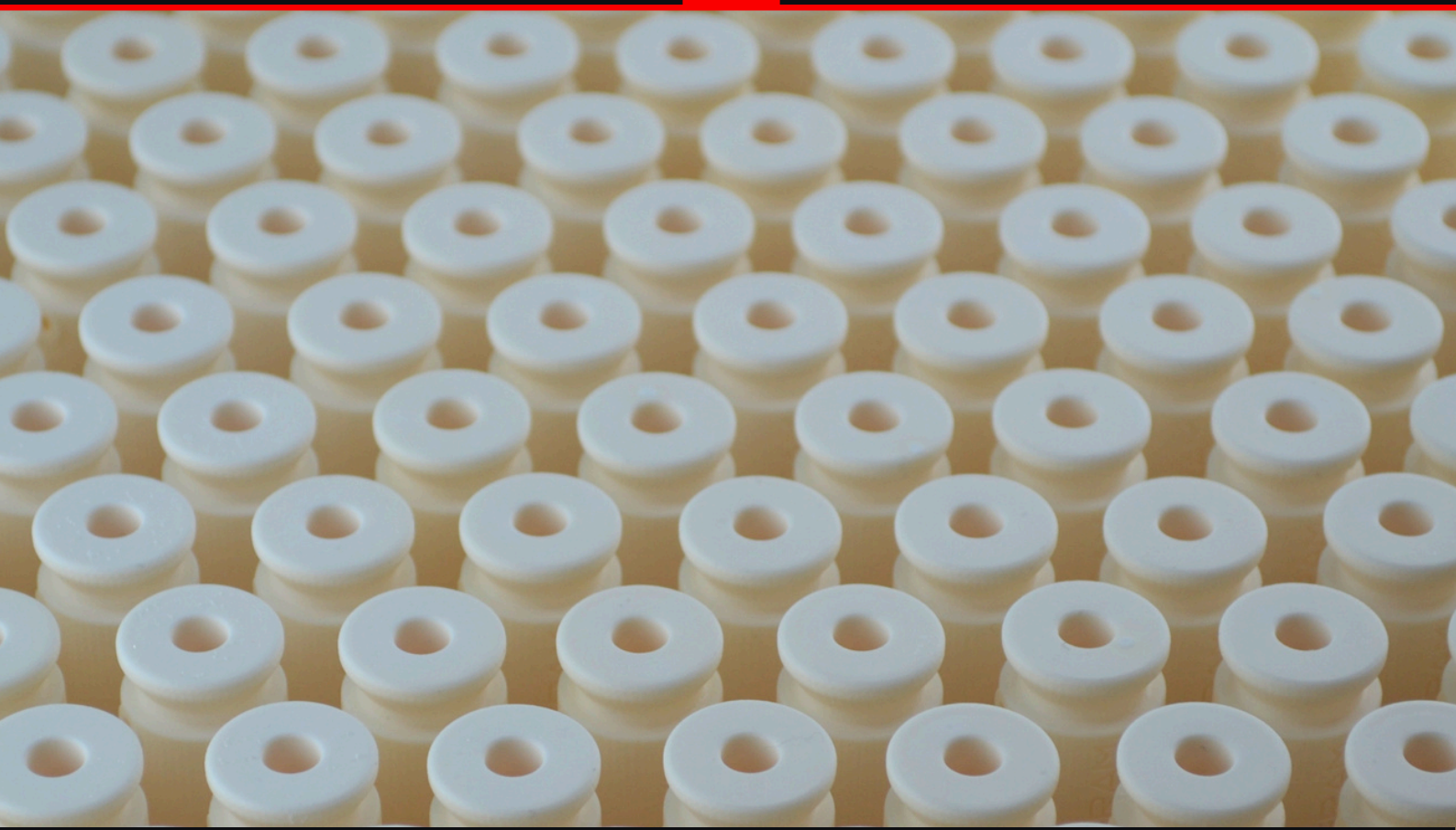
sinto 3DCERAM

CERAMIC AM FOR SPACE-GRADE SENSOR HOUSING



LET'S BUILD
THE FUTURE OF SPACE
TOGETHER

25 YEARS
OF EXPERIENCE IN
TECHNICAL CERAMIC AM

A.I.
MACHINES
POWERED BY A.I.

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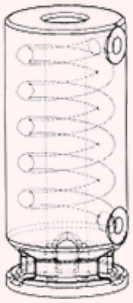
SENSING IN EXTREME ENVIRONMENTS

Space and hypersonic systems operate in extreme conditions, facing high temperatures, intense heat fluxes, and severe mass constraints. To gather critical data for flight safety and material qualification, sensors must be miniaturized and ultra-robust. Developing integrated sensors is the leading solution to survive these environments, relying on functional thin films, high-temperature micro-electro-mechanical systems (MEMS), and direct integration into thermal protections.

3DCERAM PROPOSAL : ALUMINA SENSOR HOUSING WITH INTERNAL COOLING CHANNELS



Alumina (99.8%) was chosen for these 202 aerospace parts produced on the C1000 FLEXMATIC for its superior thermal and electrical properties. By utilizing ceramic 3D printing, the design incorporates an integrated helical cooling channel to protect the sensor from heat fluxes—a complex internal geometry that would be impossible to manufacture using traditional machining.

N° of parts	202 parts
Parts dimensions	Ø 15 mm x 40 mm (h)
Printing time	12 minutes per part *40h 20min full printing platform*
Cleaning Time (With AUTO CERAKLEANER)	10 minutes

WHY SLA TOP-DOWN MAKES THE DIFFERENCE

TRADITIONAL BOTTOM-UP SLA LIMITATIONS

- Pulling forces on the parts
- Limited for large / heavy parts
- Less stable for complex internal geometries

3DCERAM SINTO TOP-DOWN ADVANTAGES

- No printing support
- No peeling forces - higher process stability
- Capable of producing large & dense parts
- Freedom to create complex internal geometries
- Excellent repeatability and reliability
- Homogeneous material properties after sintering

BENEFITS FOR THE APPLICATION

DESIGN CONSOLIDATION
Fewer parts, no assembly

REDUCED LEAD TIME
Faster from design to flight

COST EFFICIENCY
Lower total cost for complex parts

HIGH RELIABILITY
Robust performance in extreme conditions

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