

3D PRINTING: FASTER TO MARKET FOR CERAMICS

With the global pace of innovation in industries rapidly escalating, being late to market can cost hundreds of thousands if not millions of dollars. However, the cost and time frame for innovation is high. How does a company balance this equation? The answer will likely be 3D Printing. 3D Printing accelerates the speed of innovation and produces a marked reduction in time and costs in bringing new products to market.

Technology Assessment and Transfer 3D Printing

Technology Assessment and Transfer's (TA&T) 3D Printing Group specializes in the development of a variety of 3D printed ceramic materials for a broad spectrum of applications. The 3D printed developmental, prototype and commercial efforts in alumina, zirconia and silica materials are based on UV curable photo-polymerization resins using digital light projection (DLP) technology. The implementation of DLP machines speeds up functional testing of prototypes and new product introduction for a broad range of industries including medical, aerospace, energy and defense. TA&T's DLP 3D Printing can aid in ceramic part development in many ways.

- Eliminate tooling time and costs
- Net shape part production
- High resolution for small features
- Shorten development cycles
- Low volume production
- Geometric design freedom
- Rapid/Parallel design iterations

With ceramic 3D Printing, multiple prototype parts can be made simultaneously. This results in a reduced cost per design iteration by spreading costs across dozens of individual pieces. **The Result: A reduced time to market at a lower cost than conventional ceramic processing.**



Low Volume Production

DLP ceramic 3D Printing is ideal if you are ramping production or have a niche product with a few thousand units per year. This inherent Just-In-Time process eliminates the time and cost of manufacturing a tool and enables early assessment of market acceptance. For low volume ceramic production, DLP 3D Printing ultimately saves money and satisfies market demands. DLP is also ideal for manufacturing replacement parts for legacy or obsolete components, whose drawings have been lost and/or tooling destroyed.

TA&T Ceramic Technologies and Services

Our Alumina, Zirconia and Silica resin formulations have been optimized for DLP 3D Printing and specific applications. The materials have been successfully used to produce alumina and zirconia medical and dental devices and silica ceramic cores used for casting single crystal turbine blades among a host of other applications. TA&T offers research & development, prototyping and low-rate production of 3D printed ceramics. Our ceramic resins are available for purchase. [Inquires about licensing of 3D Printed Ceramic Casting Cores for Turbine Blades, Zirconia for Dental Restorations and numerous Alumina applications are welcomed.](#)

For More Information

For more detailed information and requests for services or products, please visit our website at www.techassess.com or contact:

Jeff Kutsch, Director, Optical Ceramics & 3D Printing at 410.987.1656, jkutsch@techassess.com

Dr. Larry Fehrenbacher, TA&T President at 410.224.3710, larry@techassess.com

