



Proud Partner within the



THE UNIVERSITY OF TEXAS AT EL PASO

Additive Manufacturing Expert Solution Provider Services

Located at the University of Texas at El Paso, the W.M. Keck Center for 3D Innovation is a unique multidisciplinary research facility focused on the use and development of additive manufacturing technologies. State-of-the-art equipment and more than 18 years of experience in AM allow us to provide fabrication and testing services as well expert-developed solutions to national and international clientele.

STANDARD 3D PRINTING/ADDITIVE MANUFACTURING SERVICES

Material Extrusion

- Systems:
 - Stratasys industry-grade FDM machines
 - Cincinnati BAAM system
 - an assortment of desktop systems
- Materials:
 - Thermoplastics
 - Thermoplastic composites

Vat Photopolymerization

- Systems:
 - 3D Systems industry-grade SLA machines
- Materials:
 - Translucent and high temperature resins
 - Hydrogels

Powder Bed Fusion (PBF)

- Systems:
 - Arcam (a GE Additive company) electron beam powder bed fusion machines
 - Aconity3D open architecture laser powder bed fusion system
 - SLM Solutions laser powder bed fusion system
 - EOS laser powder bed fusion system
- Materials:
 - Metals
 - Metal alloys

Binder Jetting

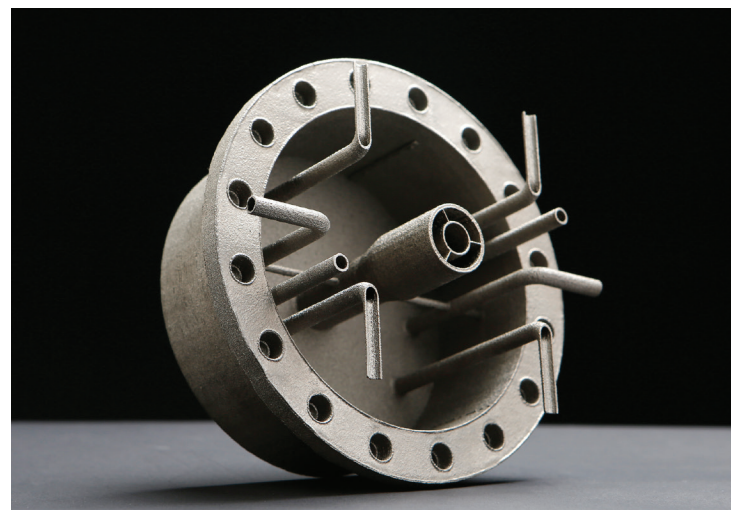
- Systems:
 - ExOne machines
 - 3D systems full color printer
- Materials:
 - Metals
 - Ceramics
 - Multi-colored materials

NON-STANDARD AND UNIQUE 3D PRINTING/ ADDITIVE MANUFACTURING SERVICES

Unique service offerings using any of the seven AM process categories including directed energy deposition, material jetting, and sheet lamination

Hybrid Manufacturing

- Systems:
 - Foundry Multi^{3D} System with material extrusion, machining, wire embedding, direct write, and robotic component placement
 - All-In-One Multi^{3D} System with material extrusion, machining, wire embedding, foil embedding, and robotic component placement
 - Compact Multi Tool Fabricator with material extrusion, machining, and wire embedding capabilities
 - Multi-functional BAAM System, a large area AM machine with multi-purpose wire embedding
- Materials:
 - Thermoplastics
 - Metal wires/foils
 - Conductive inks
 - Custom thermoplastics



LOW VOLUME PRODUCTION

- CNC machining
- Injection molding

MECHANICAL TESTING

- Tensile
- Compression
- Flexural
- Torsional
- Fatigue
- Dynamic mechanical analysis
- Thermomechanical analysis
- Digital image correlation (DIC)

CHARACTERIZATION

- Optical microscopy
- Metrology
- Metallography
- Differential scanning calorimetry
- Thermogravimetric analysis
- Particle size and shape analysis
- Oxygen, nitrogen, hydrogen (ONH) content analysis
- Rheometry

DESIGN & REVERSE ENGINEERING

- Modeling
- Design optimization
- Laser 3D scanning

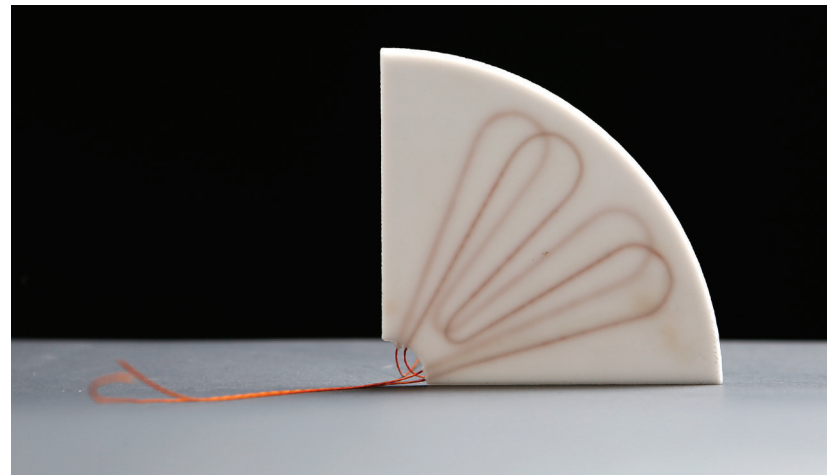
POST-PROCESSING

- Machining
- Painting
- Sealing

EXPERT SOLUTIONS

The Keck Center's team of experts has developed expert solutions to combat some common additive manufacturing issues:

- Powder removal services for powder bed fusion-fabricated parts with complex geometries or internal cavities
- Process parameter development for research materials or materials with non-commercially available parameters
- Vat photopolymerization-printed parts without support structures; ideal for parts with complex geometries or for which smooth or glossy surfaces are required



FOR MORE INFORMATION, PLEASE CONTACT:

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