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 Multi3D System with material extrusion, machining, wire
    embedding, direct write, and robotic component placement
  - All-In-One Multi3D 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

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