

## 3D Device with Interlayer Conductors

### SUMMARY

The University of Texas at El Paso seeks a partner for licensing a 3D device with inter-layer conductors and components. This technology utilizes filaments such as wires and meshes, rather than conductive traces or antenna wire. Therefore, the interlayer has higher current, conductivity, and durability capabilities than existing technology.



### TECHNOLOGY

This technology embeds filaments such as wires or meshes into 3D printed thermoplastic devices. Then an energy source is applied, generating heat, allowing the formation of 3D structural components, devices, or systems. The filaments can also be connected to other filaments and components.

### ADVANTAGES

- Conductivity & durability comparable to PCBs
- Passive Thermal Management
- Improved Mechanical Strength
- High current capability
- Reliable



### APPLICATION

- Small satellite systems
- Compact military hardware
- Bio-implantable devices
- Marine sensors
- Unmanned aerial vehicles (UAVs)
- Replacement components for electronic systems
- Disposable floating depth-specific sensor systems
- Metamaterial structures

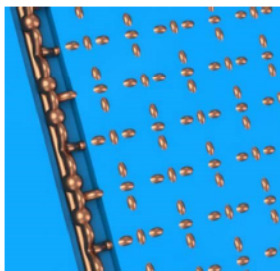
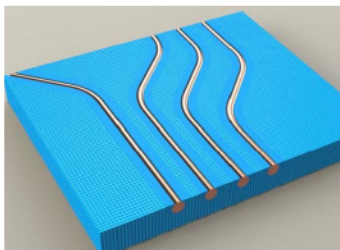





Figure: (left) a cross section of filaments embedded within a substrate; (right) a mesh embedded within a substrate wherein a portion of the mesh is disposed within a cavity.

### INVENTORS

- UTEP's W.M. Keck Center for 3D Innovation 
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  - Ryan Wicker 
  - Danny Muse
  - David Espalin
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### PATENT STATUS

- Patent allowed: U.S. 2014/0268604 
- Patent pending: U.S. 2014/0268607 
- Patent pending in Europe, Japan, China, and South Korea

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