

## A 3D Printed Nickel-Based Superalloy Resistant to Cracking



### **Challenge**

Additive Manufacturing involves 3D printing of parts or components using a gradual additional of materials in a layer-by-layer method. Currently, alloys are produced by additive manufacturing, and traditional methods that are prone to crack formation. Crack formation is especially problematic in manufacturing nickel-based alloys.

### **Solution**

This invention provides a technology based solution that overcomes existing state of the art approaches by using Nickel-based superalloys. This superalloy is capable of withstanding high temperatures, high stresses, and high oxidizing conditions.

### **Benefits and Features**

- Superalloy composition has increased crack resistance.
- Uses a manufacturing methods that forms a low-carbon or no-carbon superalloy.
- Allows alloys to be 3D printed with Ni-based superalloys and withstand temperatures up to 1100 degrees Celsius without crack formation.

### **Market Potential / Applications**

This invention has applications in aerospace, additive manufacturing, and industrial settings.

### **Developments and Licensing Status**

*Status:* Available

*Commercial sponsor sought?* Yes

### **Patent Status**

US Patent Pending

### **Inventors**

Bhaskar Majumdar; Kevin Garber; Mohammad Chowdhury; John O'Connell; Nathaniel Badgett

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*To inquire about this technology call (575) 835-5390 or email us at [OIC@nmt.edu](mailto:OIC@nmt.edu)*

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