Powder bed additive manufacturing method of fabricating a porous matrix

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OTHER INFORMATION

CATEGORIZED AS

» **Materials & Chemicals**
» Ceramics
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BRIEF DESCRIPTION

An addictive manufacturing method used to create lightweight materials with tunable physical properties.

FULL DESCRIPTION

Creating lighter yet structurally robust materials could pave the road for new device components or consumer goods of the future. Currently, such materials are created by processes that are slow and cumbersome often requiring a substantial amount of material prost processing. There is a need of a rapid and cost effective manner to produce light-weight robust materials.

Researchers at the University of California, Irvine, have developed a method of additive manufacturing to reduce the overall weight of material components. This is accomplished by patterning hollowed structures into the component through additive manufacturing techniques. By producing such hollowed structures in the components, less material are ultimately used in fabrication while the structural integrity of the component or part is maintained. In addition, this method provides a novel means of tailoring the electrical conductivity and thermal properties of the component manufactured.

SUGGESTED USES

- Additive manufacturing processes: Producing lighter porous structures that maintain structural stability
- Manipulating the density, heat conduction, electrical conduction of materials

ADVANTAGES

- Rapid method of altering material structure
- Scalable process for large scale productions
- Ease of integration into current day additive manufacturing processes

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Published Application	20190061258	02/28/2019	2017-209

STATE OF DEVELOPMENT

Conceptualized in the record of invention.

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