

Veille NAE 13 avril 2018

A Dual Band Additively Manufactured 3D Antenna on Package with Near-Isotropic Radiation Pattern

07/04/2018 - ieeexplore.ieee.org

Internet of things (IoT) applications need wireless connectivity on devices with very small footprints, and in RF obscure environments. The antenna for such applications must work on multiple GSM bands (preferred choice for network connectivity), provide near isotropic radiation pattern to maintain orientation insensitive communication, be small in size so that it can be integrated with futuristic miniaturized IoT devices, and be low in cost to be implemented on billions of devices. This paper presents

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SURFACE TREATMENT METHOD FOR METALLIC SOLID STRUCTURES

05/04/2018 - worldwide.espacenet.com

The purpose of the invention is to provide a surface treatment method to remove surface defects on a metallic solid structure manufactured by additive manufacturing. The present invention provides a surface treatment method to remove surface defects in a metallic solid structure W that is manufactured by additive manufacturing, wherein the surface treatment method comprises a step of preparing a solid structure and a step of spraying a first spray material toward the surface of the solid structure and causing the first spray material to impact with the surface, and removes differences in layers in the solid structure surface by corner portions of particles that are the first spray material.

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Salt-metal feedstocks for the creation of stochastic cellular structures with controlled relative density by powder bed fabrication

04/04/2018 - sciencedirect.com

il y a 5 jours - A novel type of metallic feedstock material for powder-bed additive manufacturing (AM) processes is proposed that enables the manufacture of cellular structures ...

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Fatigue crack growth anisotropy, texture and residual stress in austenitic steel made by wire and arc additive manufacturing

31/03/2018 - sciencedirect.com

il y a 3 jours - Abstract Wire based additive manufacturing of metals is a novel and cost-effective method for the production of large-scale metallic parts in a wide range of engineering applications. While these methods display excellent tensile properties ...

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3D Printing of Functional Metallic Microstructures and its Implementation in Electrothermal Actuators

24/03/2018 - sciencedirect.com

il y a 4 jours - Abstract Laser-induced forward transfer (LIFT), a 3D additive manufacturing technique is implemented to fabricate a fully metallic functional micro device. Digital deposition of

both structural and sacrificial metal constituents in the same setup ...

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Scanning optical microscopy for porosity quantification of additively manufactured components

24/03/2018 - sciencedirect.com

il y a 4 jours - Abstract Electron beam melting (EBM) is a representative powder-bed fusion additive manufacturing technology, which is suitable for producing near-net-shape metallic components with complex geometries and near-full densities. However, various types of ...

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Simulation of Solidification Parameters during Zr Based Bulk Metallic Glass Matrix Composite's (BMGMCs) Additive Manufacturing

20/03/2018 - scirp.org

After a silence of three decades, bulk metallic glasses and their composites have re-emerged as a competent engineering material owing to their excellent mechanical properties not observed in any other engineering material known till date. However, they exhibit poor ductility and little or no toughness which make them brittle and they fail catastrophically under tensile loading. Exact explanation of this behaviour is difficult, and a lot of expensive experimentation is needed before conclusive results could be drawn. In present study, a theoretical approach has been presented aimed at solving this problem. A detailed mathematical model has been developed to describe solidification phenomena in zirconium based bulk metallic glass matrix composites during additive manufacturing. It precisely models and predicts solidification parameters related to microscale solute diffusion (mass transfer) and capillary action in these rapidly solidifying sluggish slurries. Programming and simulation of model is performed in MATLAB®. Results show that the use of temperature dependent thermophysical properties yields a synergic effect for multitude improvement and refinement simulation results. Simulated values proved out to be in good agreement with prior simulated and experimental results.

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