# Veille NAE 15 mars 2018

## Additive manufacturing of Inconel 718?Copper alloy bimetallic structure using laser engineered net shaping (LENS?)

24/02/2018 - sciencedirect.com

*Abstract To understand processing ability and measure resultant interfacial and thermal properties of Inconel 718 and copper alloy GRCop-84, bimetallic structures were fabricated using laser engineering net shaping (LENS?), a commercially available*

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## A COMPONENT FOR A GAS TURBINE ENGINE AND METHOD OF MANUFACTURE

21/02/2018 - worldwide.espacenet.com

*The present invention provides a method of manufacturing an abradable section to be formed on the interior of the casing of a gas turbine engine. The abradable section is formed by an additive manufacturing process to be of a lower density than the surrounding portions of the casing, but integrally formed with those portions. The method including the step of forming a metallic body of a component by: depositing successive layers of a metal powder on a bed; progressively forming the shape of the metallic body within the layers of powder by selectively fusing particles of the metal powder after each layer has been deposited, wherein forming the shape of the metallic body includes creating an enclosed pocket of unfused particles within the successive layers, the pocket being defined by walls of fused particles so that the metallic body has a first density outside of the pocket and a second density which is lower than the first density within the pocket. The abradable section thus formed can result in reduced blade fin tip wear, and may also have an improved performance. It may also have lower manufacturing costs. Formation of cooling passages in the abradable section is also easier and a wider range of designs of cooling passages can be provided. A gas turbine engine included such a casing is also provided.*

Lire la suite

## Manufacture of complex thin-walled metallic objects using weld-deposition based additive manufacturing

01/02/2018 - researchgate.net

*Abstract: Gas Metal Arc Welding (GMAW) based weld-deposition process is one of the deposition-based Additive Manufacturing (AM) processes with the ability to produce fully dense complex functional ...*

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## SYSTEM AND METHOD TO PRODUCE A STRUCTURE FOR A WELD JOINT USING ADDITIVE MANUFACTURING

25/01/2018 - worldwide.espacenet.com

*A method and system for forming a weld joint using additive manufacturing is disclosed. The method and system involve providing a non-additive manufactured metal structure that includes a first end portion, a second end portion opposite the first end portion, and a middle portion between the first end portion and the second end portion. The method and system further involve increasing an effective sectional area of the first end portion by additive manufacturing a metallic geometric structure substantially permanently on the first end portion of the non-additive manufactured metal structure, without creating any fatigue-sensitive notches. One or more free edges of the additive manufactured metallic geometric structure form a weld interface at which to form the weld joint to fix the non-additive manufactured metal structure to another metal or metallic structure.*

Lire la suite

## Computational Analysis of Thermo-Fluid Dynamics with Metallic Powder in SLM

13/01/2018 - link.springer.com

*? MMMS). Abstract. Selective Laser Melting (SLM) is a powder bed additive manufacturing(AM) process. The ? PDF. Introduction. Additive manufacturing(AM) is a process in which parts are built in a layer by layer fashion. Selective ?*

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