Veille NAE 18 mai 2018

Microstructure Development in Track-by-Track Melting of EBM-Manufactured Alloy 718

13/05/2018 - link.springer.com

il y a 4 jours - Electron beam melting (EBM) is a powder-bed fusion process within the group of additive manufacturing (AM) technology that is used to fabricate high performance metallic parts. Nickel-Iron base …

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Performance evaluation and characterisation of EIGA produced titanium alloy powder for additive manufacturing processes

12/05/2018 - researchspace.csir.co.za

il y a 3 jours - Metallic powders are widely used as the feedstock material for many additive manufacturing processes. Titanium alloys in particular are used in aerospace construction as an attractive alternative construction material due to the superior properties they exhibit …

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3D printing of multiple metallic materials via modified selective laser melting

08/05/2018 - sciencedirect.com

Abstract
Selective laser melting (SLM) is a powder bed layer-by-layer fusion technique mainly applied for additive manufacturing of 3D metallic components of complex geometry. However, the technology is currently limited to printing a single material across each layer. In many applications such as the manufacture of certain aero engine components, conformably cooled dies, medical implants and functional gradient structures, printing of multiple materials are desirable. This paper reports an inve

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In-situ acoustic signature monitoring in additive manufacturing processes

21/04/2018 - aip.scitation.org

il y a 4 jours - Additive manufacturing is a rapidly maturing process for the production of complex metallic, ceramic, polymeric, and composite components. The processes used are numerous, and with the complex geometries involved this can make quality control and …

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Influence of scanning speed on the microstructure of deposited Al-Cu-Fe coatings on a titanium alloy substrate by laser metal deposition process

19/04/2018 - ieeexplore.ieee.org

Laser Additive Manufacturing is relatively new in the manufacturing industry. This paper focuses on the influence of scanning speed on Al-Cu-Fe coating powders on a titanium alloy using laser metal deposition (LMD) process. Al-Cu-Fe as quasicrystals are a relatively new class of materials which exhibit unusual atomic structure and useful physical and chemical properties. The intermetallic section where the hybrid coating bonded into grade five titanium alloy substrate were observed. It

was found

Lire la suite

Study of the Possibility of Preparing Nickel Alloy Polymetallic Material of Different Compositions by Direct Laser Deposition

14/04/2018 - link.springer.com

Currently, direct laser deposition is a key research area since use of this technology is distinguished by cheapness and the possibility of preparing an object of almost any shape. However, numerous aspects of material manufacturing technology and structure formation remain unstudied. The process of preparing polymetallic specimens consisting of layers of alloys Inconel 625 and EP741 is considered. A polymetallic specimen microstructure is extended nickel solid solution crystals. Element distribution in a grain boundary zone shows a smooth change in composition as a result of element diffusion from Inconel 625 alloy into EP741, and conversely. Layer microhardness varies from 300 to 500 HV with transition from Inconel 625 alloy into EP741

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