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BOLETÍN DE VIGILANCIA TECNOLÓGICA.
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NOTICIAS

29/10/2020

Boeing approves 'higher-fatigue' 3D printing material

3D printing specialist Stratasys says Boeing's approval of its latest thermoplastic material means the technology can be deployed to manufacture higher-fatigue structural components than previously.

https://www.flightglobal.com/aerospace/boeing-approves-higher-fatigue-3d-printing-material/140872.article

24/11/2020

Gerdau and Braskem partner with ITA and Alkimat to develop electromobility solutions with 3D printing

In Brazil, Gerdau and Braskem signed a partnership with the Technological Institute of Aeronautics (ITA) and Alkimat Tecnologia to develop innovative solutions for the electromobility segment using additive manufacturing (3D printing).

https://www.braskem.com.br/news-detail/gerdau-and-braskem-announce-partnership-with-ita-and-alkimat-to-develop-electromobility-solutions

16/12/2020

Additive Manufacturing Needs a Business Ecosystem

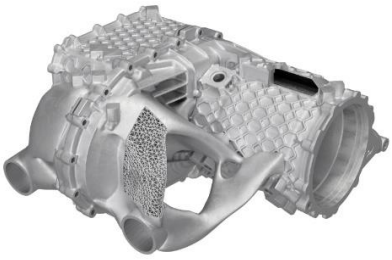
Companies may finally be able to achieve the long-awaited step change in the industry's development—if they act collectively, rather than individually.

https://www.bcg.com/publications/2020/additive-manufacturing-needs-to-adopt-a-managed-business-ecosystem?utm_medium=Email&utm_source=esp&utm_campaign=none&utm_description=ealert&utm_topic=none&utm_geo=global&utm_content=202101&utm_usertoken=cf1ce03df7f3f03f2279d10c6d6aeb0c2bbfa332

17/12/2020

Prototype for small-series production: electric drive housing from a 3D printer

Lighter, more rigid, more compact: Porsche has produced its first complete housing for an electric drive using 3D printing. The engine-gearbox unit produced using the additive laser fusion process passed all the quality and stress tests without any problems. "This proves that additive manufacturing with all its advantages is also suitable for larger and highly-stressed components in electric sports cars," says Falk Heilfort, Project Manager in the Powertrain Advance Development department at the Porsche Development Centre in Weissach.



https://presse.porsche.de/prod/presse_pag/PressResources.nsf/Content?ReadForm&languageversionid=1165564&view=1

PUBLICACIONES CIENTÍFICAS

Octubre/2020

The mechanical testing and performance analysis of polymer-fibre composites prepared through the additive manufacturing

Vigneshwaran Shanmugam, Deepak Joel Johnson Rajendran, Karthik Babu, Sundarakannan Rajendran, Arumugaprabu Veerasimman, Uthayakumar Marimuthu, Sunpreet Singh, Oisik Das, Rasoul Esmaeely Neisiany, Mikael S.Hedenqvist, Filippo Berto, Seeram Ramakrishna

The development of fibre composites in recent years has been remarkably strong, owing to their high performance and durability. Various advancements in fibre composites are emerging because of their increased use in a myriad of applications. One of the popular processing methods is additive manufacturing (AM), however, polymer-fibre composites manufactured through AM have a significantly lower strength compared to the conventional manufacturing processes, for instance, injection moulding. This article is a comprehensive review of the mechanical testing and performance analysis of polymer-fibre composites fabricated through AM, in particular fused deposition modelling (FDM). The review highlights the effect of the various processing parameters, involved in the FDM of polymer-fibre composites, on the observed mechanical properties. In addition, the thermal properties of FDM based fibre composites are also briefly reviewed. Overall, the review article has been structured to provide an impetus for researchers in the concerned engineering domain to gain an insight into the mechanical properties of fibre-reinforced polymeric composites manufactured through AM.

https://www.sciencedirect.com/science/article/pii/S0142941820321541

Noviembre/2020

Guidelines when considering pre & post processing of large metal additive manufactured parts

L. Asensio Dominguez, F. Xu A. Shokrani, J.M.Flynn, V.Dhokia, S.T.Newman

Interest in additive manufacturing (AM) is continuing to increase year-on-year across many different industrial sectors as it can provide significant design flexibility for generating highly complex components. However, present barriers preclude the potential of additive processes from performing optimally. Some of the barriers/challenges are recognised as: i) development of standard procedures for powder recyclability to potentially reduce direct manufacturing cost and provide a positive impact on the sustainability of additive processes; ii) finishing features such as internal pathways or lattices which still present a huge barrier as good surface quality may be a critical variable for certain applications within medical and aerospace industries; and

iii) geometric limitations, particularly for Directed Energy Deposition (DED) AM methods. Therefore, eliminating any additional post processes for finishing operations could be beneficial for the efficiency of these additive processes. These challenges are still under investigation, particularly for manufacturing small and medium size components. Further research is needed when scaling up the process for manufacturing larger metallic components. Therefore, this research aims to map the stages involved in an AM process for metals and highlights the considerations to be taken when manufacturing large titanium alloy components (i.e. 1000 mm x 500 mm x 500 mm) via DED. The outcome of this study consists of supporting guidelines when considering pre and post processing of large additive manufacturing components.

https://www.sciencedirect.com/science/article/pii/S2351978920319533

Noviembre/2020

Role of additive manufacturing in medical application COVID-19 scenario: India case study

Piyush Patel, Piyush Gohil

This paper reviews how the Additive Manufacturing (AM) industry played a key role in stopping the spread of the Coronavirus by providing customized parts on-demand quickly and locally, reducing waste and eliminating the need for an extensive manufacturer. The AM technology uses digital files for the production of crucial medical parts, which has been proven essential during the COVID-19 crisis. Going ahead, the 3D printable clinical model resources described here will probably be extended in various centralized model storehouses with new inventive open-source models. Government agencies, individuals, corporations and universities are working together to quickly development of various 3D-printed products especially when established supply chains are under distress, and supply cannot keep up with demand.

https://www.sciencedirect.com/science/article/abs/pii/S027861252030193X