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NOTICIAS

16/07/2020

Toyota R&D ups its additive manufacturing game

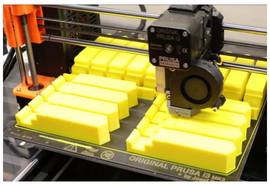
A recent peek inside Toyota's Michigan R&D center reveals expanding applications for additive-manufacturing (AM) technology.

https://www.sae.org/news/2021/07/toyota-rnd-ups-its-additive-manufacturing-game

21/07/2020

Ford is Saving Millions through 3D Printing (But Maybe Not How You Think)

Two longtime workers at Ford's Sharonville Transmission Plant near Cincinnati grew tired of experiencing the delays and downtime resulting from expensive and hard-to-get replacement parts. The solution? Learn additive manufacturing and save the company time and money.



https://www.additivemanufacturing.media/articles/ford-is-saving-millions-through-3d-printing-but-maybe-not-how-you-think

PUBLICACIONES CIENTÍFICAS

Julio/2021

Metal additive manufacturing in aerospace: A review

Byron Blakey-Milner, Paul Gradl, Glen Snedden, Michael Brooks, Jean Pitot, Elena Lopez, Martin Leary, Filippo Berto, Anton du Plessis

Metal additive manufacturing involves manufacturing techniques that add material to produce metallic components, typically layer by layer. The substantial growth in this technology is partly driven by its opportunity for commercial and performance benefits in the aerospace industry. The fundamental opportunities for metal additive manufacturing in aerospace applications include: significant cost and lead-time reductions, novel materials and unique design solutions, mass reduction of components through highly efficient and lightweight designs, and consolidation of multiple components for performance enhancement or risk management, e.g. through internal cooling features in thermally loaded components or by eliminating traditional joining processes. These opportunities are being commercially applied in a range of high-profile aerospace applications including liquid-fuel rocket engines, propellant tanks, satellite components, heat exchangers, turbomachinery, valves, and sustainment of legacy systems. This paper provides a comprehensive review of metal additive manufacturing in the aerospace industry (from industrial/popular as well as technical literature). This provides a current state of the art, while also summarizing the primary application scenarios and the associated commercial and technical benefits of additive manufacturing in these applications. Based on these observations, challenges and potential opportunities are highlighted for metal additive manufacturing for each application scenario.

https://reader.elsevier.com/reader/sd/pii/S0264127521005633?token=8BFC9739A7C2416AC519E894B7D82471AE83F27AFC6AC290D2566BA0A985F6899D28D29295F2D51D8C704CCF816A57FA&originRegion=eu-west-1&originCreation=20210728145839

Agosto/2021

Research status of laser additive manufacturing for metal: a review

Guanghao Gong, Jiajia Ye, Yiming Chi, Zhihuan Zhao, Zifan Wang, Guang Xia, Xueyun Du, Hongfang Tian, Huijun Yu, Chuanzhong Chen.

Additive manufacturing (AM) especially laser additive manufacturing (LAM), a novel manufacturing technique of layer-by-layer forming according to geometric model, provides a decent option for materials processing. It owns advantages of rapid prototyping, customization, high material utilization, and the ability to form complicated structures. This paper reviews popular LAM techniques of selective laser sintering/melting, laser metal deposition and laser direct writing. The development status of metallic materials including pure metal, steel, superalloy, titanium and aluminum alloy is presented. The challenges and application limitations of LAM are involved and the development trend in the future is forecasted. In summary, this paper gives an overview of metal LAM expecting to made helpful suggestions on future research and development.

https://www.sciencedirect.com/science/article/pii/S2238785421008759

Agosto/2021

Role of additive manufacturing applications towards environmental sustainability

Mohd Javaid, Abid Haleem, Ravi Pratap Singh, Rajiv Suman, Shanay Rab.

Additive manufacturing (AM) produces a complex shaped product from its data, layer by layer, with high precision and much less material wastage. As compared to the conventional manufacturing process, there are many positive environmental advantages of additive manufacturing technologies. Most importantly, there is less waste of raw material and the use of new and smart materials. It appears to concentrate on the output of a component on lesser material waste, energy usage, and machine emissions. There is a need to study the environmental sustainability of additive manufacturing technologies and their applications. As more businesses aim to strengthen their eco-footprint, sustainability in AM is gaining momentum. Visionary leaders of the industry are continually challenging their employees to find new ways to reduce waste, improving their workforce's manufacturing environment, and find innovative ways to use new materials to become more sustainable. The growth in value-added components, goods, and services has resulted from these initiatives. This paper discusses the significant benefit of additive manufacturing to create a sustainable production system. Finally, the paper identifies twelve major applications of AM for sustainability. Although additive manufacturing and technological dominance are being established with crucial industries, their sustainability advantages are visible in the current manufacturing scenario. The main goal is to identify the environmental benefits of additive manufacturing technologies over conventional manufacturing. Industries can now decide on suitable technologies to meet environmental goals.

https://www.sciencedirect.com/science/article/pii/S254250482100049X