



Additive Industries
Industrialising 3D printing for functional parts

Press release

Additive World

Finalists Design Challenge 2018 inspire industrial 3D printing

Professionals and students redesign products for a broad range of applications

On Monday February 12, 2018 Additive Industries announced the finalists of Additive World Design for Additive Manufacturing Challenge 2018 in two categories: professional and student designer. From a group of 52 contestants from all over the world across different fields like aeronautics, automotive, medical industry and high-tech, 6 finalists were selected. 'This year's redesigns demonstrate again how product designs can be improved when the freedom of 3D printing is applied. It's not only about topology optimization anymore, but about eliminating manufacturing difficulties, minimizing assembly and lowering logistical costs. These redesigns are really demonstrating a broad range of applications', says Daan Kersten, CEO of Additive Industries. During the Additive World Awards Dinner in Eindhoven, The Netherlands, on March 14, Erik de Bruijn (co-founder of Ultimaker, chairman of the jury) will announce the winners of the Design for Additive Manufacturing Challenge 2018.

This year the professionals from the Intech DMLS team (India) show how avionics can benefit from the additive manufacturing capabilities by focusing on part count reduction, simultaneously making it lighter and increasing the efficiency of the part. The French team, "3D-medlab", optimised the design of a Medical Part Gripper, showing even when additive manufacturing is already applied to producing prosthesis in the medical field, there is still room for extended applications. They chose to redesign the impactor, which main function is to hold products such as acetabular cups during operation. The third finalist of the professional category is an Italian team from the company Aidro Hydraulics, perfectly reducing both weight and space as well as optimizing the flow performance of a hydraulic manifold designed for additive manufacturing.

This year we have an honourable mention in the professional category: Fabian Baum from EDAG Engineering (Germany) entered the Design Challenge with the "LightHinge+" design. By using the bionic principles, stresses and deformations caused by the applied loads are minimized and 50% weight reduction is achieved. By optimizing the model's orientation and support structure, the necessary support volume is reduced to 20% of the overall building volume.

The finalists from the student category had interesting redesigns this year as well. Philipp Kaindl, from the Technical University of Munich, with his "Gasification Burner" invented a novel coal swirling

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mechanism in order to increase the thermal efficiency. His design incorporates function integration and fluid paths were optimized. Yogeshkumar Katrodiya from Fraunhofer IGCV (Germany) with his functional integration design of a shaft and gear with conformal cooling channels, created a better cooling efficiency with sufficient quantity of lubricant. The combined weight of the original gear and shaft is reduced 50% by integration of gear and shaft with help of a topology optimization approach. The last, but definitely not the least student designer, is the winner of the two last Design Challenges, Cassidy Silbernagel from the University of Nottingham (UK) with his upgraded “multi-filament Ultimaker 2+ all metal hot end” with enhanced part cooling. Cassidy wanted to show that you can greatly improve and enhance an existing product while also making the product more compact and functional. It is a special fact that the Ultimaker 2+ was his prize for winning the Design Challenge.

<End of press release>

Please find enclosed the redesigns of the finalists. Please add: source: Additive Industries.

The designs are (from left to right, first top row then bottom):

- ‘Avionics System’ from the Intech DMLS team (India, professional category)
- ‘Medical Part Gripper’ from the 3D-medlab team (France, professional category)
- ‘Hydraulic Manifold’ from the Aidro Hydraulics team (Italy, professional category)
- ‘Gasification Burner’ from Philipp Kaindl from the Technical University of Munich (Germany, student category)
- ‘Functionally Integrated Shaft and Gear’ from Yogeshkumar Katrodiya from Fraunhofer IGCV team (Germany, student category)
- ‘Ultimaker 2+ Hot End’ from Cassidy Silbernagel, Silver Cannon Design team, the University of Nottingham (United Kingdom, student category)

[More information](#)

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About Additive World

Additive World strives to connect the dots in industrial 3D printing. We want to create a platform to meet colleagues from your industry and experts in your field of use. To exchange insights, share experiences and accelerate the learning curve to a mature technology. Additive World is an initiative of Additive Industries.

About Design for Additive Manufacturing Challenge

In order to grow the number of examples and inspire many other industries to develop dedicated applications for industrial 3D printing, Additive Industries has launched the third Additive World Design for Additive Manufacturing Challenge at the renowned Dutch Design Week in Eindhoven in October 2017. Competing in two categories, both professionals and students were encouraged to redesign an existing conventional part of a machine or product for 3D printing. The winners will be announced at the Additive World Conference Award Dinner on March 14th, 2018 in Eindhoven.

About Additive Industries

Additive Industries is accelerating industrial additive manufacturing of high quality, functional, metal parts by offering a modular end-to-end 3D printing system including a seamlessly integrated information platform to high end and demanding industrial markets. With substantially improved reproducibility, productivity, and flexibility, Additive Industries redefines the business case for series production of additive manufacturing applications in aerospace, automotive, medical technology and high-tech equipment.