



**Additive Industries**  
Industrialising 3D printing for functional parts

Press release

## Additive World

### **Finalists Design Challenge 2016 demonstrate potential industrial 3D printing**

Professionals and students redesign products for a broad range of applications

On Wednesday March 9<sup>th</sup>, Additive Industries announced the finalists of Additive World Design for Additive Manufacturing Challenge 2016. From a group of 47 contestants, both professionals and students, 3 finalists were selected per category. 'The redesigns submitted from all over the world (USA, Belgium, Germany, UK, Spain, Egypt and Finland) demonstrate perfectly how product designs can be improved when the freedom of 3D printing is applied', says Daan Kersten, co-founder and CEO of Additive Industries. The large variation of industrial applications confirms the growing interest for additive manufacturing in multiple industries.

The products redesigned for additive manufacturing by the finalists show a broad range of opportunities. The selected designs are from the aerospace field (liquid rocket nozzle, bell crank for an Airbus helicopter & an integrated bearing for satellite solar arrays), automotive industry (motor casing to convert motorcycle from gasoline to electric) and consumer markets (bicycle frame custom lugs & teapot). The products clearly illustrate the freedom of the designer, potential to reduce the number of parts or integrate them, the possibility to create lighter structures and vary the material properties within a part. On Wednesday evening March 23<sup>rd</sup>, Erik de Bruijn, chairman of the jury, will announce the winners at the Additive World Awards Dinner in Eindhoven, The Netherlands.

The professionals from ATOS SE from Spain show how to benefit from the additive manufacturing capabilities by creating a new integrated orientation system concept, which unifies a multiple-parts solution into a one-part design: 'Aerospace Integrated Bearing'. The German team of TUHH – Liebherr (Technical University of Hamburg-Harburg), optimised the design of the bell crank for an Airbus Helicopter for weight and cost reduction. The third finalist of the Professional category is the American firm Smith & Nephew. They decided that AM could have a great potential in the development of a regenerative liquid rocket engine and they have designed the light-weight, regenerative cooling liquid rocket nozzle and combustion chamber.

The students also came with interesting (re)designs. The team 'Custom Lugs' from the Aalto University (Finland) used a high degree of freedom in design for their bicycle frame custom lugs, to reduce the amount of manual labour in the production of customized bicycle frames from steel. The

Additive Industries b.v.  
P.O. Box 30160, 5600 GA Eindhoven, The Netherlands  
[www.additiveindustries.com](http://www.additiveindustries.com)

Chamber of Commerce 56692579, VAT NL852265992B01  
Rabobank IBAN NL87RABO0172931932, BIC RABONL2U



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student from the University of Nottingham (UK), Cassidy Silbernagel, has reached his goal to assemble a custom electric motor into a cylinder casing and an existing crank shaft case through his innovative motor casing design. The Egyptian student Menna Moustafa El Rewiny has designed an untraditional teapot, far from symmetrical rounded forms and also fully integrated the lid into the body.

<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):

- Team Crius Tek (Smith & Nephew, USA): liquid rocket nozzle (professional)
- Team TUHH - Liebherr (Technical University of Hamburg-Harburg, Germany): bell crank (professional)
- Team AtoS AM Engineering (Atos SE, Spain): aerospace integrated bearing (professional)
- Team Custom Lugs (Aalto University, Finland): bicycle frame custom lugs (student)
- Menna Moustafa El Rewiny (Helwan University, Egypt): teapot (student)
- Cassidy Silbernagel (The University of Nottingham, UK): motor casing (student)

[More information](#)

#### **Contact**

Daan A.J. Kersten, CEO

Mobile: +31 (0)653400630

E-mail: [d.kersten@additiveindustries.com](mailto:d.kersten@additiveindustries.com)

#### **Additive Industries b.v.**

Leidingstraat 27, NL 5617 AJ Eindhoven, The Netherlands

P.O. Box 30160, NL 5600 GA Eindhoven, The Netherlands

[www.additiveindustries.com](http://www.additiveindustries.com)

#### **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 first Additive World Design for Additive Manufacturing Challenge at the renowned Dutch Design Week in Eindhoven in October 2015. 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 on March 23<sup>rd</sup>, 2016 in Eindhoven.

Partners in the Design for Additive Manufacturing Challenge are leading CAE technology provider (e.g. Topology Optimization) - Altair Engineering, consumer 3D printer manufacturer Ultimaker,



Autodesk, European Association of the Machine Tool Industries CECIMO and AddLab, the shared facility for 3D metal printing. The winners in both categories take home: the latest Ultimaker 2+ 3D printer and Autodesk's NetFabb license. The top 3 in both categories get for free one year license of Altair's Inspire software and one year subscription to Autodesk Fusion 360. Also the award winning designs will be printed in metal.

#### **About Additive Industries**

Additive Industries has the ambition to bring industrial additive manufacturing/3D printing for selected high tech markets from lab to fab. We believe direct digital manufacturing of functional parts in various metals and ceramics will transform the industrial value chain. In an open innovation environment Additive Industries unites world class equipment manufacturers, material suppliers, designers, engineers, knowledge institutes, industrial suppliers and end-users to design, experiment, build and connect the next generation additive manufacturing systems and solutions.