

*Empa acquisition of a BeAM machine*

## **BeAM and Empa to jointly develop novel applications for the Directed Energy Deposition technology**

**Strasbourg, October 9<sup>th</sup>, 2018** – BeAM is glad to announce the signature of an extensive research and development agreement with Empa, the Swiss Federal Laboratories for Materials Science and Technology. This partnership focuses on powder-based Directed Energy Deposition (DED) and aims at jointly developing the technological foundations for the next generation of high-precision DED machines.

This partnership follows the acquisition early 2018 by Empa of a BeAM DED machine that will be used to integrate and test innovative components. The machine is located at Empa's Laboratory for Advanced Materials Processing led by Patrik Hoffmann in Thun, whose team is recognized for its expertise in laser processing, powder metallurgy and process monitoring. "We are very excited to collaborate with BeAM's engineers to push the boundaries of this innovative additive manufacturing technology and to develop a whole new range of applications for Swiss industries and beyond", said Hoffmann. BeAM's CEO Vincent Gillet added: "We are very proud that Empa joins our network of partners to help us enhance our technical lead in DED technology".

DED, also called Laser Deposition Welding is a very high-potential 3D printing technology as it allows to manufacture parts much faster than powder-bed manufacturing and provides a unique possibility to feed different metal powders simultaneously and fuse them to form a Functionally Graded Material. The additive production of sandwich structures is also possible.

DED is an Additive Manufacturing process where focused thermal energy is used to fuse materials by melting them as they are deposited. Typical DED machines utilize a deposition nozzle mounted on the Z-axis of a DED dedicated CNC machine, in which metal powder is blown by argon gas. This allows continuous 5 axis of freedom to build/repair components layer by layer without the need for support structures.

With this partnership, Empa joins the BeAM customer network, that includes some of the world's most renowned institutes in Additive Manufacturing, such as Oak Ridge National Laboratory (ONRL), the University of Sheffield, Nanyang University of Technology, ESTIA engineering school, Ecole Polytechnique and IRT Saint Exupéry.

## **About Empa**

As an interdisciplinary research institute of the ETH Domain, Empa, the Swiss Federal Laboratories for Materials Science and Technology, conducts cutting-edge materials and technology research. Empa's R&D activities focus on meeting the requirements of industry and the needs of society, and thus link applications-oriented research to the practical implementation of new ideas. As a result, Empa is capable of providing its partners with customized solutions that not only enhance their innovative edge and competitiveness, but also help to improve the quality of life for the public at large. As part of the ETH Domain, Empa is committed to excellence in all its activities. Empa employs around 1,000 people in three sites (Dübendorf, St. Gallen, and Thun).

## **About BeAM**

BeAM, created in December 2012, is a pioneer in designing and producing industrial metal additive manufacturing machines using the DED technology (Directed Energy Deposition) and is growing rapidly across the globe. BeAM works closely with its customers and business partners to develop and industrialize manufacturing and repair processes with feasibility assessments, pilot production, training and sales of systems. To date, BeAM has developed innovative repair methods for critical aircraft engine parts enabling previously un-repairable components to be re-deployed for use in flight. Further application opportunities for DED solutions are the addition of features to existing components and the creation of near net shape parts.

In June 2018, BeAM joined the AddUp Group, the French leader in the design, production and marketing of metal AM machines based in Clermont-Ferrand, a joint-venture between Fives and Michelin.

## **Press Contact**

**Empa** – Michael Hagmann

[Michael.Hagmann@empa.ch](mailto:Michael.Hagmann@empa.ch)

Phone: +41 58 465 45 92

**BeAM** - Frédéric Le Moullec

[contact@beam-machines.com](mailto:contact@beam-machines.com)

Phone: +33 3 88 60 87 62