

PRESS RELEASE  
Frankfurt am Main, Germany (July 6<sup>th</sup>, 2016)

## Additive Manufacturing for space industry

### Plenary Lecture by Laurent Pambaguian (*European Space Agency - ESA*)

Wednesday, September 28<sup>th</sup>, 2016, 6:15 p.m. - 6:45 p.m., Audimax, TU Darmstadt



*ESA, the European Space Agency has been looking into Additive Manufacturing for more than a decade; it was then still called “rapid manufacturing” referring to the prototyping world. Since then, the Agency has taken a leading role in establishing the required developments to ensure that parts made using these technologies fulfil the specific constraints of a space missions.*

This has been done by, on the one hand, establishing the technological capabilities of these technologies from a Materials and Processes perspective and, on the other hand, maturing the use of these technologies toward development of high end Space Hardware. It is under ESA funding that the basis for 3D printing lunar regolith was demonstrated. The first additively manufactured platinum based thruster fired was also developed under ESA funding.

Today, the portfolio of ESA activities in Additive Manufacturing expands toward many aspects such as the possibility to print on orbit or on planets, to develop multifunctional parts, to totally redesign parts whilst evaluating the impact that such redesign have on the space mission. ESA, together with the National Space Agencies, strives to help the European Space Industry to maximise the benefits brought by these technologies. Taking leverage from Additive Manufacturing ESA has placed a strong focus of the benefit brought by many advanced manufacturing technologies for space and started a cross-cutting initiative on Advanced Manufacturing where environmental, regulatory and performances aspects will be closely looked at.

For more information on our plenary lectures please visit our [website](#). If you wish to register as a media representative and get free access to MSE 2016 please contact us directly at [presse@dgm.de](mailto:presse@dgm.de).

#### Further plenary lectures include:



**Peter Greil** (University of Erlangen-Nuernberg, Department of Materials Science (Glass and Ceramics), Erlangen, Germany):

#### **Biomorphous Ceramics**

Tuesday, September 27<sup>th</sup>, 2016, 10:00 a.m. - 10:30 a.m.



**Jörg F. Löffler** (Laboratory of Metal Physics and Technology, Department of Materials, ETH Zurich, Switzerland):

**Metallic biomaterials for absorbable implant applications**

*Tuesday, September 27th, 2016, 1:45 p.m. - 2:15 p.m.*



**Yuri Estrin** (Department of Materials Science and Engineering, Monash University, Clayton, Australia):

**Ultrafine grained metallic materials for permanent and bioresorbable medical implants**

*Wednesday, September 28th, 2016, 8:30 a.m. - 9:00 a.m.*



**L Patrice E. A. Turchi** (Lawrence Livermore National Laboratory, Livermore, USA):

**Why is alloy theory still a matter of principles?**

*Wednesday, September 28th, 2016, 2:00 p.m. - 2:30 p.m.*



**Christoph Bartneck** (HIT Lab NZ, University of Canterbury, Christchurch, New Zealand):

**Material Challenges in Human Robot Interaction**

*Thursday, September 29th, 2016, 8:30 a.m. - 9:00 a.m.*



**Cesar A. Barbero** (Department of Chemistry, Universidad Nacional de Rio Cuarto, Rio Cuarto, Argentina):

**Smart Polymeric Nanocomposites and Polymer Alloys. Synthesis and Applications**

*Thursday, September 29th, 2016, 2:00 p.m. - 2:30 p.m.*

**About MSE 2016 - <https://www.mse-congress.de/home/>**

Once again the time has arrived: from September 27<sup>th</sup> to 29<sup>th</sup>, 2016 Europe's Material Science and Engineering scientists (MatWerk) will meet at the Materials Science and Engineering Congress (MSE) at the Darmstadt University of Technology, Germany. A special highlight is this year's guest country, one of the most important research and economic regions in the world, the USA.

With more than 1,400 participants, the MSE is one of the largest English speaking congresses with exhibition in the field of Material Science and Engineering across Europe. In symposia and plenary lectures numerous scientific, social and economic relevant questions of Material Science and Engineering are discussed every two years.

For 2016 the biggest U.S. societies: the Materials Research Society (MRS) and the Minerals, Metals and Materials Society (TMS) have been involved in the concept and design of the congress.

Hosted by the German Materials Society (DGM) in Darmstadt, Germany the MSE is the central platform for material science and engineering experts to present their research field to a large international community and to network across borders since 2008. In addition to different side events, the DGM Tag with its Nachwuchsforum is an integral part of the MSE.

The MSE's host, the DGM, is the largest technical-scientific society for Materials Science and Engineering in Europe. For almost 100 years it has combined the expertise of the specialist field from science and the industry: by representing the interests of its members from science and the industry - and acting as a guarantor for the systematic development of the field.

Comprehensive information on the [highlights of this year's MSE](#) and a [program overview](#) can be found online.

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