

LUNOVU LMD system for wire and powder based processes went into operation at the *Universität der Bundeswehr München*

Neubiberg and Herzogenrath, October 07, 2022

A LUNOVU eLMD system recently installed at the Institute of Materials Science at the *Universität der Bundeswehr München* (University of the German Armed Forces in Munich) has now been put into operation. LMD stands for Laser Metal Deposition and describes an additive manufacturing process in which high-quality metal alloys for three-dimensional components can be precisely manufactured. Institute director Prof. Dr. Eric Jägle explains: "The new LMD system opens up completely new possibilities for us in materials research. Our institute's focus is on the development of new alloys for and by additive manufacturing processes. The LMD process enables us to investigate a variety of novel materials, whereby we can adjust the manufacturing conditions in a targeted manner. A special feature of this machine is that metal powder and wires can be used equally as feedstock materials. Both types of processes offer specific advantages, and we hope to make significant advances in material and process development by combining them in one machine."

Dr. Rainer Beccard, Managing Director at LUNOVU GmbH agrees. "Another special feature of the LMD system is a module that scans components and calculates 3D models from scan data. These models in turn can be used for an almost completely automatic generation of the machine programs. This opens up countless possibilities for applying structures to existing components using metal 3D printing."

LUNOVU develops and builds Laser Metal Deposition (LMD) machine systems for industrial applications and research and development. The product portfolio includes CNC machines and robot-based systems. A special focus is on machine intelligence in combination with sensor technology, which enables the processing of complex free-form geometries with almost no programming effort.

The Institute for Materials Science at the *Universität der Bundeswehr München* deals with the development of new and improved materials for additive manufacturing processes, with a focus on the interaction between additive manufacturing processes and the microstructure of metallic materials, as well as the characterization of the fatigue behaviour of these materials. The eLMD system is operated jointly by several professorships at the departments of aerospace engineering, mechanical engineering and civil engineering at the University. It is situated in the "Additive Manufacturing Research Lab (FLAB-3Dprint)", a project of the Bundeswehr Center for Digitalization and Technology Research (dtec.bw).

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