

ADDITIVE MANUFACTURING PILOT MACHINES

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Location: Flanders Make - Leuven | FlandersMake@KULeuven

DESCRIPTION

Open and modular platforms to improve the 3D production process both in terms of quality and in terms of speed.

- Additive manufacturing pilot machine for selective laser melting of metals
- Additive manufacturing pilot machines for selective laser sintering of polymers
- Additive manufacturing pilot machines for (in)direct sintering of ceramics

The key characteristics of this infrastructure are:

- **Open control system:** in view of providing access to the machine control software and integrating modules to speed up the research efforts.
- **Extensive monitoring capabilities:** to test new types of sensors, cameras and monitoring systems and to support innovative data and quality analysis techniques both at the lowest level metal melting step as well as on the highest level of overall system performance.
- **Access to critical components and subsystems:** in view of testing new mechatronic modules (sensing, control, actuation) in a relevant AM printer.
- **Baseplate heating** up to 500°C for specific AM machines.

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TECHNICAL SPECIFICATIONS

- The metal 3D printer platform is based on an **industrial selective laser melting printer** with a build volume of 275x275x400mm.
 - An **open industrial AM control platform** takes over the actuation of the build platform, laser and optical components.
- Different **in-house developed, modified or commercially available** metal/polymer/ceramic 3D printer platforms:
 - 3DSystems ProX320 DMP
 - 3DSystems ProX200 DMP
 - Concept Laser Mlab SLM
 - Concept Laser M1 SLM
 - Refurbished EOSint M250
 - DTM Sinterstation SLS
 - In-house developed SLM machine

OUR OFFER

We offer an open and modular platform that enables to improve layer-based AM production systems. This infrastructure provides companies access to and control of the different aspects of the AM process. As such, we help companies to improve the build process and turn it into an industrially controlled process.

This includes:

- Broadening the materials palette for AM (ceramics, special alloys of Cu, Ni or W, biomaterials, ...)
- Relating process conditions to static and dynamic mechanical properties via the analysis of microstructures, textures, porosity, thermal stresses, ...
- Machine design and process optimisation (both software and hardware)
- Quality control (X-ray CT, process monitoring, post-build treatments)

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INTERESTED?

Contact infrastructure@flandersmake.be for more information on the open and modular AM platforms.