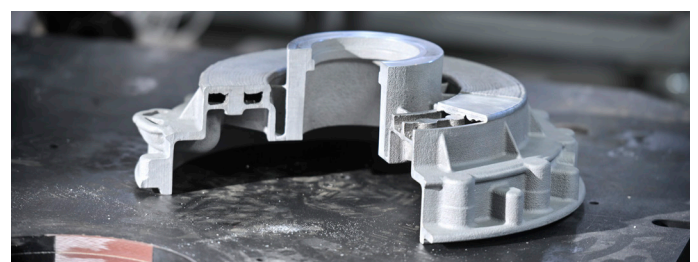


# WIRE-BASED ADDITIVE MANUFACTURING (WAM)

- Production of 3D structures and components through layer by layer material deposition
- Direct Energy Deposition with standard and special wires (WAM)
- Advantages:
  - Shortening of production and production development cycles
  - Reduction of raw material
  - Construction of complex component geometries
  - Rapid prototyping
- Calorimeters and efficiency measurements
- Environmental analyses (LCA)
- Dust measurements
- Welding camera & process sensor technology (Vitronik, nLIGHT Plasmio, Fronius and many more)



## POSSIBILITIES

- Additive-Manufacturing Laboratory: Fabrication of WAM prototypes and WAM demonstrator parts
- Smart wire production route for development of targeted WAM wires
- Process and material characterisation
- Optimisation of existing WAM processes
- Consulting, concept development and feasibility studies
- Analysis of WAM processes with numerical methods
- Online process monitoring





## TECHNICAL DATA

- **Torch technologies:**
  - GMAW
  - CMT, CMT Pulsed, CMT Advanced
  - GTAW
  - Modern AC / DC Plasma technology
  - Plasma cleaning
- **Handling:**
  - 6-axis industrial robot and 2-axis rotary tilt table from Kuka and ABB
  - Kr c4 control (Kuka)
  - Irc5 control (ABB)
- **Test laboratory for variable test setups:**
  - Component dimensions: 0 - 1,500 mm
  - 24/7 operation
  - 6 components inline gas mixer
  - Glovebox
  - Real-time process control
  - Process temperature control



AIT AUSTRIAN INSTITUTE  
OF TECHNOLOGY GMBH  
LKR Leichtmetall-  
kompetenzzentrum Ranshofen  
Dr. Stephan Ucsnik  
Tel +43 664 825 1404  
stephan.ucsnik@ait.ac.at  
[www.ait.ac.at/en/wam](http://www.ait.ac.at/en/wam)

