Chair of Materials Engineering of Additive Manufacturing
TUM School of Engineering and Design
Technical University of Munich

HiWi position

Metal powder production with Ultrasonic Atomization

Background

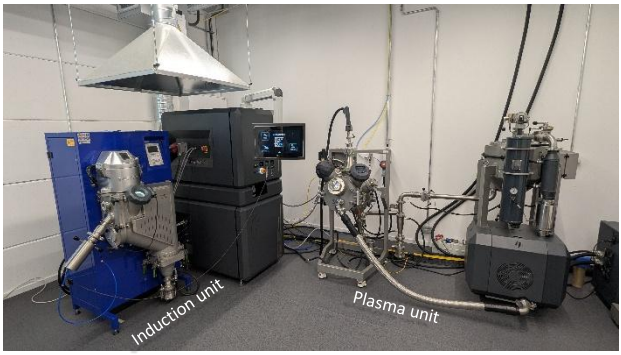
The Chair of Materials Engineering in Additive Manufacturing investigates the process – structure – property relationships of different Directed Energy Deposition (DED) processes. One of them is the novel plasma and powder-based DED variant DED-Arc-P. For the qualification and further development of this process, a key requirement is the availability of high-quality metal powders with tailored properties. To meet this need, the Ultrasonic Atomization (UA) unit *rePowder* from AMAZEMET is employed. This UA system enables the production of high-quality powders from a wide range of feedstocks, including wires, rods, bars, as well as waste and scraps. After production, the powder must be qualified regarding its particle size distribution and morphology, so it can be linked to the processability and properties of the additively manufactured structures.

Tasks

- Setup, operation, and maintenance of the *rePowder* system
- Powder production with various metals (aluminum, titanium, and copper) from different feedstocks (wires, support structures, scraps)
- Powder characterization
- Support in metallographic preparation
- Creation of images and videos for documentation and teaching purposes at the chair

Your profile

- Background in Mechanical Engineering or a related field
- Structured and independent way of working
- Good collaborative and communication skills
- Interest in experimental and laboratory work
- Good knowledge of English



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