

The Chair of Materials for Additive Manufacturing at the University of Wuppertal is now assigning a

### **Master thesis:**

#### **»Laser powder bed fusion of a rare earth modified High Entropy Alloy (HEA)«**

The research of the Chair of Materials Science and Additive Manufacturing deals with a combination of materials science, laser technology, manufacturing technology, technical chemistry and particle technology. Within the framework of a research project, production of rare earth nano particles using Laser Ablation in Liquid (PLAL) method, also deposition of the nano particles on the metal micro powders (HEA) are to be realized and tested. The aim of the work is to optimize printing and nano particles production parameters, to achieve optimum deposition of the nanoparticles on the surface of metal powders, and building solid samples of the composite powder using LPBF (laser powder bed fusion).

#### **Your tasks**

- Optimization of experimental parameters of rare earth nano particle production using laser ablation in liquid method
- Supporting of nano particles on the surface of metal powders using liquid media
- Independent implementation of 3D-printing experiments
- Characterization, evaluation and interpretation of the test results
- Documentation and presentation of the results within the framework of a Master's thesis

#### **What you bring along**

- Studies in physics/mechanical/materials/chemical engineering or comparable subject
- Enthusiasm for current research in the field of laser technology, nano materials production, and 3D printing technology
- Motivation, ability to work in a team and independently
- Enjoyment of practical, experimental work
- Good English language skills
- Ideally previous knowledge in the field of additive manufacturing and laser technology

#### **What to expect**

- Intensive and dedicated support
- Collaboration in a motivated and collegial team
- High degree of independent work
- Flexible working hours

We are looking forward to receiving your application:

**Hamed Shokri M.Sc.**

Chair of Materials Science and Additive Manufacturing  
School of Mechanical Engineering and Safety Engineering  
Gaußstraße 20, 52074 Wuppertal  
shokri@uni-wuppertal.de

<http://www.mam.uni-wuppertal.de/>