



Der Vorsitzende des Promotionsausschusses

EINLADUNG

Hiermit lade ich ein zum öffentlichen Promotionskolloquium von

Frau M.Sc. Mélanie Anne Clozel

Metallische Werkstoffe
(Prof. Dr. Ralf Busch)

am

Dienstag, 24. Juni 2025, 13:00 Uhr s.t.

per Videokonferenz: Link für MS Teams: <http://bit.ly/45E1BUA>

Raum für die Prüfung: Gebäude C4.3, HS1, Raum 0.02

Thema der Dissertation:

Laser-based Powder Bed Fusion of Zirconium-based Metallic Glass in the MARS-M Sounding Rocket Payload

An additive manufacturing device was designed and built to handle powder and perform Laser-based Powder Bed Fusion (PBF-LB) onboard a sounding rocket under microgravity conditions. For two metallic glass powders: AMLOY-Zr01 (previously AMZ4) and AMLOY-ZR02 (aka Vitreloy105), processing parameters were developed in the lab and PBF-LB was successfully conducted in space. The microstructure of the obtained samples was characterised and compared in depth using various methods, including scanning and transmission electron microscopy as well as synchrotron x-ray micro-diffraction and synchrotron x-ray computer tomography, in order to understand the origin of undesirable crystallisation depending on process parameters and material.

Saarbrücken, 10. Juni 2025

Prof. Dr. Uli Kazmaier