Naturwissenschaftlich-Technische Fakultät

UNIVERSITÄT DES SAARLANDES

Der Vorsitzende des Promotionsausschusses

E I N L A D U N G

Hiermit lade ich ein zum öffentlichen Promotionskolloquium von

Herrn M.Sc. Nico Neuber
Metallische Werkstoffe
(Prof. Dr. Ralf Busch)

am

Freitag, 22. August 2025, 11:00 Uhr s.t.
per Videokonferenz: Link für MS Teams: http://bit.ly/4nFKHvo
Raum für die Prüfung: Geb. C6.3 (Physik Tower) Kleiner Hörsaal II (Raum 0.09)

Thema der Dissertation:

Connection of Thermodynamics, Kinetics, Mechanics and Structure in a model Pt-Pd-metallic glass-forming System

The Pd-Cu-Ni-P and Pt-Cu-Ni-P systems exhibit remarkable glass-forming ability at similar stoichiometries, with Pd and Pt being interchangeable. This makes them a unique model system for studying metallic glasses. High-energy X-ray scattering techniques have been employed to investigate their atomic structure and its thermal evolution, revealing a direct link between thermophysical properties and thermally induced structural changes. Moreover, correlations between specific structural motifs and both mechanical and thermodynamic properties have been observed, shedding light on the embrittlement mechanisms in metallic glasses. Advances in understanding atomic dynamics in undercooled metallic melts were also achieved, including the first experimental evidence of a dynamic slowdown in a metallic liquid at wave vectors corresponding to distances larger than the average interatomic spacing.

Saarbrücken, 7. August 2025

Prof. Dr.-Ing. Georg Frey