



Der Vorsitzende des Promotionsausschusses

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## EINLADUNG

Hiermit lade ich ein zum öffentlichen Promotionskolloquium von

**Frau M.Sc. Narges Ghiasi Shirazi**

Angewandte Mechanik  
(Prof. Dr.-Ing. Stefan Diebels)

am

**Freitag, 26. Juli 2024, 10:00 Uhr s.t.**

per Videokonferenz; Link für MS Teams: <https://rb.gy/wc9dr2>  
Raum für die Prüfung: Gebäude A4.2, Seminarraum SR 1.12.1

### **Thema der Dissertation:**

### **Numerical Modelling of Si/PU Hybrid Foams Coating Process**

Ni/PU hybrid metal foams are open-cell polyurethane foams that are coated with a nanocrystalline nickel layer via the electrodeposition process. To optimize the coating process, a two-sided coupled model based on the mixture theory is provided. This model considers the multi-phase nature of the process and the main transport mechanisms, i.e. diffusion, convection, and migration, and a sink term responsible for the deposition of ions on the struts. The influence of different parameters in each transport mechanism is investigated and the comparison of numerical and experimental results demonstrates the strong ability of the proposed model to describe the experimentally observed effects.

Saarbrücken, 17. Juli 2024

Prof. Dr. Uli Kazmaier