



Der Vorsitzende des Promotionsausschusses

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## EINLADUNG

Hiermit lade ich ein zum öffentlichen Promotionskolloquium von

**Herr M. Sc. Christian Müller**

Materialsimulation

(Prof. Dr. Martin H. Müser)

am

**Montag, 4. November 2024, 10:00 Uhr s.t.**

per Videokonferenz; Link für MS Teams: <https://t.ly/dOLYS>

Raum für die Prüfung: INM, **Gebäude D2.5**, Leibniz-Saal

### Thema der Dissertation:

#### **Contact mechanics of thin films, viscoelastic materials, and frictional interfaces via Green's function molecular dynamics**

The theoretical framework of conventional contact mechanics is based on idealized assumptions that have shaped the field for more than 140 years. Unfortunately, these assumptions do not lend themselves to the modelling of thin films, viscoelastic materials and frictional interfaces. Therefore, the present thesis is concerned with the systematic generalization of these assumptions and their GFMD implementation to simulate a variety of previously inaccessible, realistic contact problems. As a result, our adhesive detachment simulations show an unprecedented resemblance to experimental in-situ observations. The obtained insights are applied to the performance prediction of medical adhesives on skin-like rough surfaces.

Saarbrücken, 21. Oktober 2024

Prof. Dr. Uli Kazmaier