



Der Vorsitzende des Promotionsausschusses

## E I N L A D U N G

Hiermit lade ich ein zum öffentlichen Promotionskolloquium von

**Frau M.Sc. Svenja Pohl**  
Anorganische Festkörperchemie  
(Prof. Dr. Guido Kickelbick)

am

**Donnerstag, 29. Januar 2026, 14:00 Uhr s.t.**

per Videokonferenz: Link für MS Teams: <https://shorturl.at/gGVxI>  
Raum für die Prüfung: Hörsaal II (Raum 0.03), Gebäude C4.3

### **Thema der Dissertation:**

### **Synthesis and Structural Investigation of Softenable Polysilsesquioxanes and Their Applications**

Melting gels are silsesquioxane-based hybrid materials that soften reversibly at moderate temperatures and cure irreversibly upon further heating. Their combination of high transparency, thermal stability, and low-temperature processability makes them suitable for applications in which sensitive components cannot tolerate high heat, such as optical systems. The aim of this work was to identify the structural prerequisites underlying this softening behavior and to transfer them to new systems. Based on a phenyl-substituted reference structure, silsesquioxanes with various aliphatic and polycyclic aromatic substituents were synthesized and examined with respect to their network architectures and thermal properties. An intermediate crosslinking density, amorphous ladder-like segments, and a controlled number of free hydroxyl groups proved crucial for both the thermoplastic and thermosetting characteristics. In addition, the materials were shown to be suitable for encapsulating hydrophobic dyes and for producing fluorescent microparticles.

Saarbrücken, 15. Januar 2026

  
Prof. Dr.-Ing. Georg Frey