

Lecture Announcement

Winter Semester 2026/27

Sustainable Ceramics and Glasses

Lecturer:

Priv.-Doz. Dr.-Ing. habil.

Guido Falk



Further information:

Scope and Credits: 2 SWS (3 CP)

Lecture: Thursday – 2.15 p.m. - 3:45 p.m.

Start: October 15, 2026

Location: Seminar Room 4.08, C6.3

QR-Code Moodle:



Description:

Sustainable Ceramics and Glasses introduces the principles of designing, processing, and applying ceramic and glass materials within the framework of sustainability and the circular economy. The course covers raw materials, energy-efficient manufacturing, advanced functional and structural materials, life cycle assessment (LCA), recycling strategies, carbon footprint reduction, and emerging low-carbon technologies. Students gain an understanding of the relationships between composition, processing, microstructure, properties, and environmental impact. The course equips future materials scientists and engineers with the knowledge and tools required to develop innovative, resource-efficient, and sustainable ceramic and glass materials for advanced industrial and societal applications.

Content:

Introduction to Circular Economy Concept, Sustainable Processing Roadmaps, Introduction to Life Cycle Assessment, Fundamentals of Glass and Ceramic Processing, Ceramic and Glass Resources and Consumption, Material and Energy Efficiency, Principles of Sustainable Processing, Decarbonization Technologies, Case Studies and Pathway Analysis.

Target group:

Students of master program Sustainable Materials and Engineering, natural science master's programs, doctoral students