LWW Lehrstuhl Werkstoffwissenschaft
materials science and engineering

ICAMS
INTERDISCIPLINARY CENTRE FOR ADVANCED MATERIALS SIMULATION

Lecture announcement

Polymers and Shape Memory Alloys

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Part I: The first part of the lecture gives an introduction into polymer science. We will present the basic mechanical and functional properties of polymers and how they are related to the underlying microstructural morphology. We will discuss some aspects of production, modification and processing of polymers. Further, we will present selected methods for their (thermo-)mechanical and physical characterization with a special focus on engineering applications.

Part II: The second part of the lecture focuses on crystallographic and thermodynamic fundamentals, processing, and properties of shape memory alloys. Shape memory alloys exhibit unique characteristics, including thermal (shape memory effect) and mechanical (pseudoelasticity) memory, which both rely on the martensitic phase transformation, a diffusionless solid state transformation. The students learn about the relation between microstructures, microstructure evolution and shape memory properties. This includes interesting information on the production and processing of shape memory alloys with tailored functional behaviour.

The lecture will be held each **Wednesday (10:15 until 13:00)**, starting from April 13th. The location is **seminar room IC 04-349.**

The lecture is part of the new master course "**Material Science and Simulation**" (ICAMS). Students from other courses are welcome, too.

Please contact Dr. rer. nat. Klaus Neuking (Klaus.Neuking@rub.de) or Dr.-Ing. Jan Frenzel (jan.a.frenzel@rub.de) for further information.

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