



**Lecture Announcement „Multiscale Modelling in Materials Science“
(2 lecture, 2 seminar)
Winter term 2015/2016**

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The students gain knowledge about the different length and time scales on which the phenomena and mechanisms of material behavior occur. They furthermore understand different levels to describe these phenomena and are introduced to existing approaches to bridge and integrate these scales. The students build up the skills to independently develop scalebridging models that integrate all necessary scales and employ these models to describe and predict materials behavior under given conditions.

Subject aims:

- Characteristic examples involving multiple time- and length-scales in materials science
- Classification of models (electronic, atomistic, mesoscale, macroscale/continuum)
- Concepts of concurrent and hierarchical multi-scale approaches
- Strategies for deriving coarse-grained models
- Atomistically and microstructurally informed continuum models
- Examples and applications of different multiscale methods in the seminar

Lecture and seminar will be given in English.

First lecture: 20.10.2015, 10:00 **Place:** ICAMS seminar room 02/718 / CIP