



## Seminar

### “IRTG: Soft Matter Science “

# Viscoelastic and electrical properties of polymer nanocomposites: From carbon nanotubes to the mineral halloysite

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An essential step for tailoring the end-use properties of polymeric materials is understanding the interplay between microstructure and processing and mechanical properties. In this context, matrix-filler and filler-filler interactions play a key role in polymer nanocomposites. In this lecture, we discuss the interplay between morphology and viscoelastic properties of polymer composites with different types of nanotubes. The first part of the lecture is devoted to the rheological and electrical properties of polymer/carbon nanotubes composites in the melt. The influence of shear deformation on the formation of electrically conductive networks of carbon nanotubes is studied. In the second part of the talk, the mechanical and rheological properties of polyamide 6/halloysite composites are discussed with a strong focus on the influence of the molar mass of the polymer matrix on the thermal and viscoelastic properties. Finally, two strategies for the chemical surface modification of halloysite nanotubes are presented in order to enhance the compatibility between the polyamide 6 matrix and halloysite nanotubes.

**Monday, February 28, 14h15**

**“Hörsaal Makromolekulare Chemie”, Stefan-Meier-Str. 31, Freiburg**

You are welcome to meet Pr. Ulrich A. Handge after the seminar. Do not hesitate to contact Christelle Vergnat ([softmattergraduate@physik.uni-freiburg.de](mailto:softmattergraduate@physik.uni-freiburg.de)) to organize a meeting.