

<h1>Fundamentals of Polymer Physics</h1>	
Untertitel:	Modul Introduction to Polymer Science
Zeit:	Mittwoch 13:15 bis 14:00
Semester:	WS 2010/11
Erster Termin:	Mi., 06.10.2010, 13:15 - 14:00, Ort: Seminarraum 1.16 [VSP 1]
Ort:	Mi. wöchentlich 13:15-14:00 Ort: Seminarraum 1.16 [VSP 1]
DozentIn:	Prof. Dr. Kay Saalwächter
Typ der Veranstaltung:	Vorlesung in der Kategorie Offizielle Lehrveranstaltungen
Beschreibung:	<p>This lecture will introduce the most fundamental mathematical and physical concepts of polymer physics. Emphasis will be on the understanding of the description of different important phenomena rather than on a coverage of polymer physics as a whole. The lecture will alternate with seminars, in which students will present problem set solutions as a part of the topics to be covered.</p> <p>Contents:</p> <p>I introduction</p> <p>II mathematical tools</p> <ol style="list-style-type: none"> 1. complex numbers 2. Fourier transform 3. delta function <p>III molecular weight distributions, averages and moments</p> <p>IV diffusion, Brownian motion and random walks</p> <ol style="list-style-type: none"> 1. macroscopic: Fick's law 2. microscopic: Brownian motion <p>V single-chain structure</p> <ol style="list-style-type: none"> 1. real chains 2. equivalence Gaussian chain 3. radius of gyration <p>VI basic (light) scattering</p> <ol style="list-style-type: none"> 1. Bragg's law 2. general interference 3. Debye structure factor <p>VII basic statistical thermodynamics</p> <ol style="list-style-type: none"> 1. Boltzmann distribution and entropy 2. Flory-Huggins chain entropy in solution 3. single-chain entropy and rubber elasticity <p>VIII basics of viscoelasticity and rheology</p> <p>IX forces within and between polymers</p>
TeilnehmerInnen:	1 PolyMatM
Studiengänge (für):	1 PolyMatM
SWS:	1
Fakultät(en):	Institut für Physik
Studienbereich(e):	Naturwissenschaftliche Fakultät II - Chemie und Physik > Institut für Chemie > Master
Heimat-Einrichtung:	Experimentelle Physik (Hochfrequenzspektroskopie)