



Seminar

“IRTG: Soft Matter Science “

On unstable thin polymer films and membranes

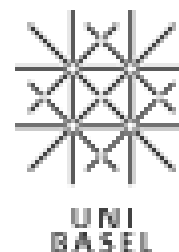
Dr. Falko Ziebert

Experimental Polymer Physics, Physikalisches Institut, Albert-Ludwigs-Universität Freiburg
fziebert@gmail.com

Wednesday, January 19, 14h15

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

You are welcome to meet Dr. Falko Ziebert after the seminar. Do not hesitate to contact Christelle Vergnat (softmattergraduate@physik.uni-freiburg.de) to organize a meeting.



On unstable thin polymer films and membranes

I discuss several aspects of unstable films and membranes.

In the first part I will describe how the dewetting of thin polymer films made by spin-casting can be described by a thin film model. Aspects that have to be taken into account to understand recent experimental results are viscoelasticity, nonlinearity of friction with the substrate and residual stresses inside the film. The latter are due to the frozen-in nonequilibrium configurations caused by the rapid solvent evaporation during spin coating.

In the second part I discuss the instability of a lipid membrane in an electric field. This is important to understand e.g. electroformation of vesicles or electroporation.

I also briefly discuss the related instability of a thin polymer film in an electric field.