

Abstract Submitted
for the MAR16 Meeting of
The American Physical Society

Polymer Dynamics by Dielectric Spectroscopy JENNIFER ZEHNER, KARIN BICHLER, GERALD SCHNEIDER, Louisiana State University Chemistry Department — Theoretical modeling of polymer dynamics is fundamentally important to describe experimental results and to develop new materials. There are many different processes in polymers covering a very broad time range. Dielectric spectroscopy is able to cover a broad frequency range, around 10 decades. Thus many different processes can be studied and it provides a unique means to explore the processes and the time-scales. In our presentation, we emphasize how the line-shape permits to derive information on certain mechanisms. We use entangled melts and demonstrate the influence of entanglements, contour length-fluctuations and constraint release on the spectra and describe it by a theory. Furthermore, we compare it to rheology experiment and demonstrate those parts which are complementary. We use this knowledge to achieve an advanced understanding of polymer dynamics in nanocomposites.

Jennifer Zehner
Louisiana State University Chemistry Department

Date submitted: 06 Nov 2015

Electronic form version 1.4