Abstract Submitted
for the MAR09 Meeting of
The American Physical Society

Influence of polymer chain connectivity on local composition distribution in miscible polymer blends DMITRY BEDROV, University of Utah, WENJUAN LIU, RALPH COLBY, Pennsylvania State University — Molecular dynamics simulations using bead-necklace model have been utilized to investigate concentration distribution of local environments in model polymer blends. Distribution of effective composition around polymer segments has been investigated for different blend scenarios and bulk concentrations. Inter- and intramolecular contributions to the effective composition have been analyzed. Our analysis indicates that chains connectivity has a significant and nontrivial effect on distribution of effective composition around polymer segment. The results of this work are compared with assumptions of several theoretical models that commonly used to describe structural and dynamical correlations in miscible polymer blends.

Dmitry Bedrov
University of Utah

Date submitted: 23 Nov 2008 Electronic form version 1.4