Abstract Submitted
for the MAR12 Meeting of
The American Physical Society

The Effects of Blockiness on the Chemical Composition Distribution of Partially Functionalized Polystyrene WAYNE POWERS, Rensselaer Polytechnic Institute, JAN GENZER, North Carolina State University, CHANG Y. RYU, Rensselaer Polytechnic Institute, RENSSELAER POLYTECHNIC INSTITUTE COLLABORATION, NORTH CAROLINA STATE UNIVERSITY COLLABORATION — Monodisperse polystyrene has been functionalized chemically to make random copolymers with controlled sequence distribution of the unmodified and modified styrene segments. The sequence blockiness of the resulting random copolymers can be controlled via the temperature of reaction, with a high temperature reaction resulting in a "truly random" copolymer, and a low temperature resulting in a "random blocky" copolymer. Interaction chromatography has been employed to estimate the chemical composition distribution of these partially functionalized polystyrenes. Two different chemical systems will be discussed; i.e., the brominated and borylated polystyrene systems. The results of our analysis reveal that the chemical composition distribution of "random blocky" copolymers is narrower than that of the corresponding "truly random" copolymers. The chemical composition of the two systems will be compared directly, and the influence of "chain conformation inversion" will be discussed.

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Date submitted: 15 Nov 2011 Electronic form version 1.4