Abstract Submitted
for the MAR08 Meeting of
The American Physical Society

WAXS investigations on Polyethylene – Carbon Nanofibers Composites[1] BRIAN JONES, University of Nebraska, Lincoln, JIANHUA LI, Rigaku Americas, TX, ROGELIO BENITEZ, KAREN LOZANO, MIRCEA CHIPARA, ALIN CRISTIAN CHIPARA, MAGDALENA DORINA CHIPARA, The University of Texas Pan American, DAVID J. SELLMYER, University of Nebraska, Lincoln — Nanocomposites have been obtained by high-shear mixing of isotactic polyethylene with various amounts of purified nanofiller (vapor grown carbon nanofibers type PR-24AG from Pyrograf Products, Inc) by utilizing a HAAKE Rheomix at 65 rpm and 180 °C for 9 min followed by an additional mixing at 90 rpm for 5 min. Composites loaded with various amounts of vapor grown carbon nanofibers have been prepared. Various spectroscopic techniques have been used to assess the interactions between the polymeric matrix and carbon nanofibers. Wide angle X - Ray scattering investigations focused on the effect of carbon nanofibers on the crystalline phases of polypropylene and on the overall crystallinity degree of the polymeric matrix. This research aims at a better understanding of the nature and structure of the polymer – carbon nanofibers interface.

[1]ESR measurements were done in the laboratory of Professor A. Rajca from the Chemistry Department of the University of Nebraska Lincoln.

Mircea Chipara
The University of Texas Pan American

Date submitted: 19 Dec 2007 Electronic form version 1.4