

Abstract Submitted
for the MAR13 Meeting of
The American Physical Society

Designing high hard block Content TPU resins for composite application ALBERTO SAIANI, The University of Manchester, School of Materials, UK, CHINEMELUM NEDOLISA, The University of Manchester, School of Materials, UK, CHRISTOPHER I. LINDSAY, Huntsman Polyurethanes, Everslaan 45, 3078 Everberg, Belgium, POLYMER AND PEPTIDES RESEARCH GROUP TEAM, HUNTSMAN POLYURETHANES TEAM — Thermoplastic Polyurethanes (TPU) are linear block copolymers typically constructed of statistically alternating soft (SS) and hard (HS) segments. Due to their numerous industrial applications these materials have received considerable attention. We have recently investigated the phase behavior and morphology of a set of high hard block content polyurethanes. Using mainly calorimetry, scattering and microscopy techniques we were able to elucidate the origins of all the thermal events observed through differential scanning calorimetry and propose a new morphological model of the structure and the phase behavior of these high hard block content polyurethanes [A. Saiani et al. *Macromolecules*, 34, 9059-9068 (2001); 37, 1411-1421 (2004); 40, 7252-7262 (2007)]. We have now shown that these new materials can potentially be used as resins for designing fiber based composites and investigated the effect of processing on conditions the final properties of the composites

Alberto Saiani
The University of Manchester, School of Materials, UK

Date submitted: 16 Nov 2012

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