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327.

MORPHOLOGY EFFECTS ON THE CONDUCTIVITY IN POLY(3-ALKYL THIOPHENE) BLENDS. Mika Myllymäki, Kalle Levon, Polytechnic University, 6 Metrotech Center, Brooklyn, NY 11021.

Blends of poly(3-octyl thiophene) with different ethylene-co-vinylacetates were prepared by solvent casting method. Morphology of these blends was studied by optical microscope and was related to the conductivity and doping process. Studies show that iodine diffusion and conductivity are greatly dependent on the morphology.

328. SURFACE MORPHOLOGY STUDIES OF MULTIBLOCK AND STARBLOCK COPOLYMERS OF POLY(α -METHYL STYRENE) AND POLY(DIMETHYL SILOXANE). Xin Chen; J. A. Gardella, Jr., Department of Chemistry, State University of New York at Buffalo, Buffalo, NY 14214, P. L. Kumler, Department of Chemistry, State University of New York College at Fredonia, Fredonia, NY 14063.

Surface morphology and compositions of multiblock and starblock copolymers of poly(α -methyl styrene) (PMS) and poly(dimethyl siloxane) (PDMS) were investigated by cross-sectional transmission electron microscopy, angle- and energy-dependent ESCA, and infrared spectroscopy. The extent of surface segregation of PDMS was determined for multiblock and starblock copolymers to depth of 210 Å. No surface excess was detected at depth probed by ATR-FTIR measurements. The PMS-PDMS block copolymers with high PDMS bulk concentrations (80 wt%) have a highly oriented lamellar morphology in the near air surface region, and the topmost air surface region (27 Å) is exclusively composed of PDMS. The PMS-PDMS block copolymers with lower PDMS bulk concentrations (40 wt%) have lesser or no domain orientation and the surface region includes detectable PMS.

329. MONOLAYER BEHAVIOUR OF A POLYMETHACRYLATE CONTAINING PHTHALOCYANINE SIDE-CHAINS. C.E. van Nostrum^a, A.J. Schouten^b, and R.J.M. Nolte^a, (a) Department of Organic chemistry, University of Nijmegen, Toernooiveld 1, 6525 ED Nijmegen, the Netherlands; (b) Laboratory of Polymer Science, University of Groningen, Nijenborgh 4, 9747 AG Groningen, the Netherlands.

A polymethacrylate with dodecoxy-substituted phthalocyanine sidechains forms a Langmuir monolayer at the air-water interface. This monolayer was not stable and expanded during a period of approximately 16 hours. The structural change coupled with the expansion has been studied by pressure-area isotherms, electron microscopy, electron diffraction, and ellipsometry. The polymer can be deposited on various substrates if it is mixed with arachidic acid. The resulting multilayers have been characterized by FT-IR spectroscopy and ellipsometry. It is proposed that the monolayer expansion is the result of a change in conformation of the peripheral alkoxy chains on the phthalocyanine rings.

330. MACROSCOPIC ALIGNMENT OF THE NEMATIC DOMAINS IN SIDE-CHAIN LIQUID CRYSTALLINE POLYMERS. Yue Zhao and Huanli Lei, Département de chimie, Université de Sherbrooke, Sherbrooke (Québec) Canada J1K 2R1

The macroscopic alignment of the nematic domains in side-chain liquid crystalline polymers can be obtained by magnetic, electric, surface, and mechanical effects. Mechanical stretching of these polymers is difficult to perform because of their poor orientability. In