

Micro-analysis of orientation in polymers by X-ray microscopy

XRM-polymer-orientation-studies.doc Last changed 16-Sep-08 (aph)

reviews

S.G. Urquhart, U. Lanke and J. Fu, "Characterization of molecular orientation in organic nanomaterials by X-ray linear dichroism", *Int. J. Nanotech.* **5** 1138-1170 (2007).

H. Ade and A.P. Hitchcock, *NEXAFS microscopy and resonant scattering: Composition and orientation probed in real and reciprocal space*, *Polymer* **49**, 643-675 (2008)

Articles

H. Ade and B. Hsiao, *X-ray Linear Dichroism Microscopy*, *Science* **262**, 1427 (1993)

A. P. Smith and H. Ade, *Quantitative Orientational Analysis of a Polymeric Material (Kevlar Fiber) with X-ray Microspectroscopy*, *Appl. Phys. Lett.* **69**, 3833 (1996)

H. Ade, "Compositional and Orientational Characterization of Polymeric Materials with X-ray Microscopy", *Trends Polym. Sci.* **5**, 58-66 (1997)

A. Cossy-Favre, J. Diaz, Y. Liu, H. R. Brown, M. G. Samant, J. Stöhr, A. J. Hanna, S. Anders, and T. P. Russell., "X-PEEM Study on Surface Orientation of Stylized and Rubbed Polyimides", *Macromolecules* **31**, 4957 (1998).

I. Koprinarov, M. Demirors, T. Tyliczszak, A.L.D. Kilcoyne, A.P. Hitchcock, H. Ade, R. Celinski and G.E. Mitchell, *Orientation of Fibrils in Polymer Crazes Studied by STXM*, 2001 ALS Compendium, LBNL publication (2002)

D. Hernández Cruz, A. P. Hitchcock, M. M. West, M.-E. Rousseau and M. Pérolet, *Quantitative mapping of the orientation of fibroin β -sheets in B. mori cocoon fibers by scanning transmission X-ray microscopy*, *Biomacromolecules*, **7** (2006) 836-843

M.E.Rousseau, D. Hernández Cruz, M.M. West, A.P. Hitchcock and M. Pérolet, *Nephilia clavipes Spider Dragline Silk Microstructure Studied by Scanning Transmission X-Ray Microscopy*, *J. Am.n Chem. Soc.* **129** (2007) 3897-3905.

D. Hernández-Cruz, A.P. Hitchcock, T. Tyliczszak, Marie-Eve Rousseau and Michel Pérolet, *In situ azimuthal rotation device for linear dichroism measurements in scanning transmission x-ray microscopy*, *Rev.Sci. Inst.* **78** (2007) 033703

K.V. Kaznatcheev, P. Dudin, A.P. Hitchcock and O.D. Lavrentovich, *An x-ray microscopy study of chromonic liquid crystal texture*, *Phys. Rev. E* **76**, 061703:1-14 (2007)

K. Kaznacheev and T. Hegmann, *Molecular ordering in a biaxial smectic-A phase studied by scanning transmission X-ray microscopy (STXM)*, *Phys. Chem. Chem. Phys.* **9**, 1705-1712 (2007)