

Title: Investigation of the structural and charge transport properties of discotic molecules (phthalocyanines).

Abstract:

Discotic liquid crystals can self align to form one-dimensional semiconducting wires, many tens of microns long. Highly ordered surface layers of phthalocyanines could be obtained by the rectangular pen writing technique which reveal macroscopic uniaxial orientation of the columns with an in plane arrangement of the molecules on the substrate as confirmed by polarized optical microscopy and X-ray diffraction. Thermal treatment results in homeotropic self assembly when the films are processed from the isotropic state between two surfaces, and results in a remarkable increase in mobility as verified by the space charge limited current measurements.