Liquid crystalline polymers VIII: thermotropic liquid crystalline poly(hydrazone–ether)s containing bis-thiophene linked to the main chain through spacers of various lengths

A. S. HAMMAM, K. I. ALY, Sh. M. RADWAN and M. A. ABDEL-RAHMAN

Abstract:

A new series of poly(hydrazone–ether)s was synthesized from 3,4-dimethylthieno [2,3-b] thiophene-2, 5-dicarbohydrazide, II and 4,4'-diformyl-β, β'-diphenoxalkanes or 4,4'-diformyl -2,2'-dimethoxy -β, β'-diphenoxalkanes. The inherent viscosities of the polymers were in the range 0.22 – 0.56 dIg−1. Majority of the polymers were soluble in concentrated H2SO4. Their thermotropic liquid crystalline properties were examined by DSC, an optical polarizing microscopy using a hot stage and thermogravimetric analyses. The polymers exhibited almost thermotropic liquid crystalline properties. In most cases, the mesophases extended up to 430°C, where thermal decomposition prevented further observation.

Keywords:

Thermotropic liquid crystals; Synthesis; Characterization; Poly(hydrazone-ether)s; Bis-thiophene

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