



Synthesis and Characterization of Novel Processable Poly (Ether-Azomethine)s Containing Naphthyl Moiety

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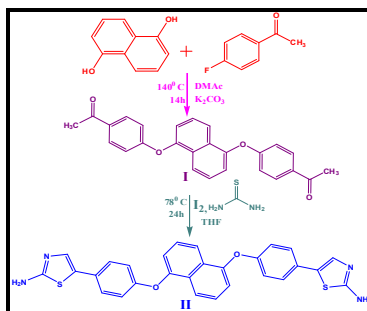
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ABSTRACT

A new diamine 1, 5-bis (4-(2- aminothiazol-4-yl)phenoxy) naphthalene (II) was synthesized starting from 1,5- naphthol. New series of poly (ether-azomethine)s were synthesized from 1, 5-bis (4-(2- aminothiazol-4-yl)phenoxy) naphthalene (II) with different compositions of dialdehydes such as isophthalaldehyde and terephthalaldehyde in *N,N*-dimethylacetamide (DMAc) with 5 wt% LiCl by the solution polycondensation method. Inherent viscosities of these polymers were in the range 0.29 to 0.44 dL g⁻¹, indicating formation of moderate molecular weights. These polymers exhibited good solubility in various polar aprotic solvent such as *N*-methyl-2-pyrrolidone (NMP) and H₂SO₄ etc. However, some polymers showed partial solubility in DMF, DMAc and THF etc. X-Ray diffraction pattern of polymers showed amorphous nature. Thermal stability was assessed by 10% weight loss temperature and the degradation temperature of the resultant polymers falls in the ranges from 396°C to 489°C in nitrogen. The glass transition temperature was in the range of 168-205°C. The structure-property correlation among these polyazomethines were studied; in view of their potential applications as high-performance polymers.

Graphical Abstract



Synthesis of 1, 5-bis (4-(2- aminothiazol-4-yl) phenoxy) naphthalene (II)

Keywords: 1, 5-bis (4-(2- aminothiazol-4-yl)phenoxy) naphthalene (II), processability, Viscosity, Thermal stability.