



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

V.N. Kadam<sup>1</sup>, P.H. Salunkhe<sup>2</sup>, S.S. Ankushrao<sup>2</sup>, Y.S. Patil<sup>2</sup>,  
J.N. Mahindrakar<sup>2</sup>, V.P. Ubale<sup>3</sup> and A.A. Ghanwat<sup>2\*</sup>

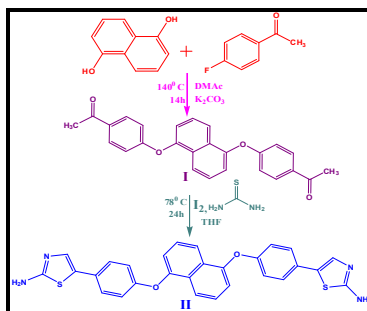
1. Baburao Patil College of Arts and Science, Anagar-413213, Maharashtra, **INDIA**
  2. School of Chemical Sciences, Solapur University, Solapur- 413 255, Maharashtra, **INDIA**
  3. D. B. F. Dayanand College of Arts and Science, Solapur-413002, Maharashtra, **INDIA**
- Email: [anil\\_ghanwat@yahoo.com](mailto:anil_ghanwat@yahoo.com)

Accepted on 8<sup>th</sup> July, 2018

### 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<sup>-1</sup>. indicating formation of moderate molecular weights. These polymers exhibited good solubility in various polar aprotic solvent such as *N*-methyl-2-pyrrolidone (NMP) and H<sub>2</sub>SO<sub>4</sub> 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.