

## Synthesis and Characterization of Poly (N-(Pyridin-2-ylmethylidene)Pyridin-2-Amine: Thermal and Conductivity Properties

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**Abstract :** The conjugated Schiff base polymers which are also called as polyazomethines are promising materials for various applications due to their good thermal resistance semiconductive, liquid crystal, fiber forming, nonlinear optical outstanding photo- and electroluminescence and antimicrobial properties. In recent years, polyazomethines have attracted intense attention of researchers especially due to optoelectronic properties which have made its usage possible in organic light emitting diodes (OLEDs), solar cells (SCs), organic field effect transistors (OFETs), and photorefractive holographic materials (PRHMs). In this study, N-(pyridin-2-ylmethylidene)pyridin-2-amine Schiff base was synthesized from condensation reaction of 2-aminopyridine with 2-pyridine carbaldehyde. Polymerization of Schiff base was achieved by polycondensation reaction using NaOCl oxidant in methanol medium at various time and temperatures. The synthesized Schiff base monomer and polymer (Poly(N-(pyridin-2-ylmethylidene)pyridin-2-amine)) was characterized by UV-vis, FT-IR, <sup>1</sup>H-NMR, XRD techniques. Molecular weight distribution and the surface morphology of the polymer was determined by GPC and SEM-EDAX techniques. Thermal behaviour of the monomer and polymer was investigated by TG/DTG, DTA and DSC techniques.

**Keywords :** polyazomethines, polycondensation reaction, Schiff base polymers, thermal stability

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