## Synthesis, characterization and electrical properties of polyimines derived from selenophene

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## Abstract

Polyimines derived from 2,5-di-(oxophenyl)selenophene (I) were synthesized by reacting (I) with different diamines in suitable mixtures of solvents. All the diamines obtained were black and highly insoluble. The polymers were characterized by IR Spectroscopy and Elemental Analysis. NMR was not intended in view of the insolubility of the compounds. Differential scanning calorimetry was utilized to determine the thermal parameters (Tg and Tm) of these polymers. Electrical properties of the doped (doping agents- iodine, antimony pentafluoride, aluminum and ferric chloride) and undoped polymers were determined at room temperature and atmospheric pressure. No variation in conductivity was observed when AICI3 or FeCI3 was used as dopant. This behavior has been ascribed to the poor electron-acceptor properties of the conductivity was attained when iodine was employed as doping agent-conversely, when the polymers were exposed to AsF5, only a moderate increase in conductivity of these polymers after doping is due to the presence of nitrogen, a very electronegative element, in their structures that promotes the oxidation of the polymeric chain.

## Keywords

Polyimines, Selenophene, Conductivity.