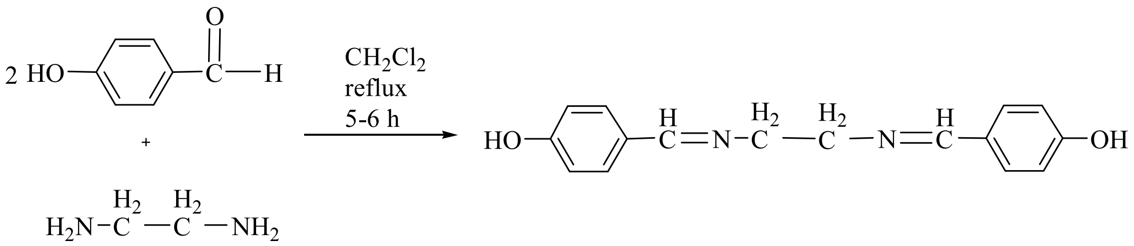
Electronic Supplementary Material (ESI) for RSC Advances.

Supporting Information

Synthesis of Schiff base



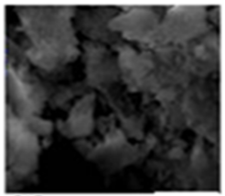
Scheme: Synthesis of Schiff base (SB)

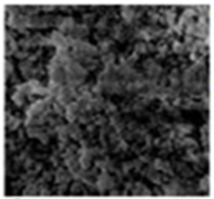
XRD, SEM/EDX

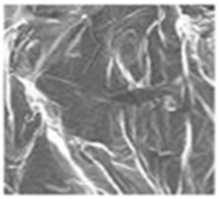
The XRD analysis of poly(azomethine)ester (PAME) and its terpolymers was carried out in powdered form in range 2θ-55°,at room temperature. The thermogram showed that the parent PAME has amorphous nature as they have bulky aromatic groups and highly polar C=N linkage having lone pair of electron on 'N', in their chains which prevent close packing and chain alignment in the macrochains. But in the case of terpolymers, presences of methylene and silyl spacers in material like PISi, PIPr and PIH impart some degree of crystallinity to the chains however addition of aromatic diols (B, F) resulted in amorphous polymers such as PIB and PIF).

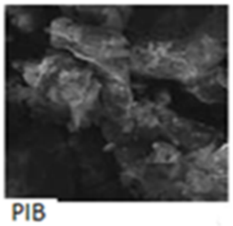
Scanning electron microscopy technique employed to study the morphology of PAME, terpolymers and doped analogues. Images taken showed marked difference in the morphology of all material indicating successful incorporation of diols in main chains and also that the added moieties have made noticeable change in the morphology of the polymer chains. Similarly the representative SEM images of doped material revealed successful doping, figure 1. The representative EDX spectra of the PAME and its terpolymer are shown in the figure 2. The polymer spectra showed the presence of C, N, H, O and Cl however the terpolymer spectra indicated the presence of additional Si in PISi, F in PIF, along with the other elements. Presence of Cl in spectra confirmed the presence of diacid chloride group at the terminals which is in agreement with the FTIR results. The polymers doped with silver metal were evaluated qualitatively and quantitatively from the EDX spectra

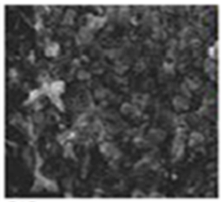

PI


PIF


PIH


PISi


PIB


PIPr

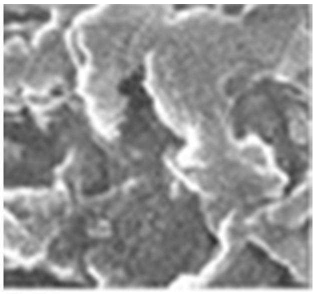
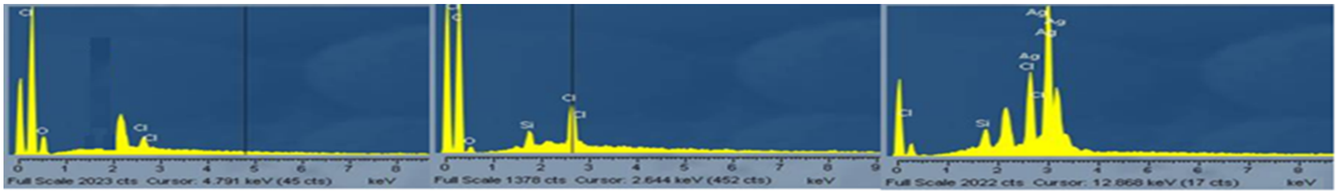

DPI

Figure 1: Scanning electron micrographs of poly(azomethine)esters (PI) and terpolymers (PIPr, PIB, PIF, doped with silver)



PI(a) PISi(b) DPISi

Figure 2 Representative EDX spectra of the PAME and its terpolymer