

Valence band photoemission study of polyimide

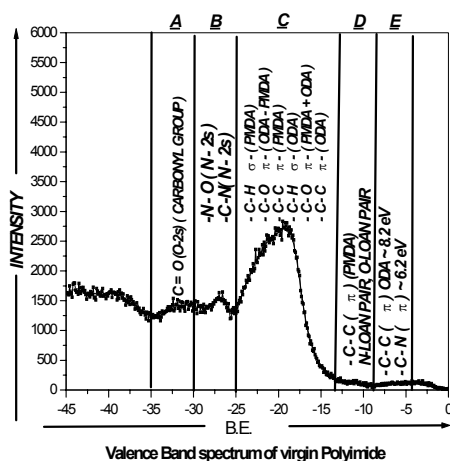
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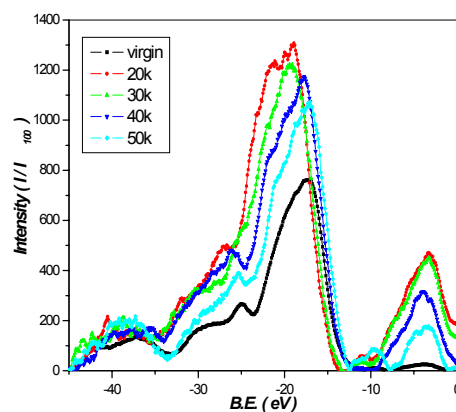
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The valence band photoemission study of polyimide samples were carried out using PES beamline. For this polyimide samples in the form of thin sheets having thickness of $50\mu\text{-m}$ were used. The valence band spectra were recorded for virgin and electron beam irradiated samples at different fluencies. In addition to this the valence band photoemission study of 'Cu' and 'Ag'. Doped polyimide samples have also been carried out. These measurements were also carried out by changing the photon energy to see effect of variation in photo ionisation cross-section in recorded valence band. The detail interpretation of valence band spectrum of virgin samples was carried out. The main contribution to the density of states in the binding energy region of 25-30eV is due to N-2S orbitales. In the energy range of 13eV –25eV, the observed structure in the valence band is due to C-2S derived molecular orbitales. Observed width of band is very large, and one can assigned it to various types of bonding such C-H(σ), C-O(π), C-C(π), C-H(σ), C-O(π). The band in the region 16eV to 5eV is due to π states attributed to C-C and C-O. The valence band spectra of e-beam irradiated and Cu and Ag doped samples show drastic changes as compare to virgin samples. The data analysis of all these samples is almost completed. A manuscript is being prepared for publication in a suitable Journal.



Valence Band spectrum of virgin Polyimide



Valence band spectra of Electron beam irradiated Ag deposited Polyimide at different Doses

