**Abstract**

 Polyvinylidene fluoride (PVDF) and Trifluoroethylene ((TrFE) are potential polymers which are used in acoustic transducers and electromechanical actuators because of their inherent piezoelectric response, as heat sensors because of their inherent pyroelectric response and as dielectric layer in organic thin film transistors. In the present study thin films of copolymer Poly(vinylidene fluoride-trifluoroethylene) were prepared by spin coating method for two different concentrations 2% to 8% and for various spin speeds from 2000 RPM to 5000 RPM. A P-type Si wafer was used as a substrate to deposit P(VDF-TrFE) thin films. 2-butanone was used as a solvent to prepare P(VDF-TrFE) solution. To study the annealing effect, the films were annealed for three different temperatures 50°C, 100° C and 175° C. Ellipsometry was used to measure the thickness of the films. The identification of the films prepared was done by using FTIR spectrophotometer. The structure of the films was studied by using small angle XRD. The morphology of the coated surface was investigated using SEM. It is observed that the thickness of the film coated depends on concentration, spin speed and annealing temperature. The XRD spectrum indicated the amorphous nature with crystallites of very low dimension. SEM micrographs also conforms the predominantly amorphous nature of the film surface. The observed smooth surface with amorphous structure indicated that these films could be used as dielectric layer in organic ferroelectric field effect thin film transistors.