**ABSTRACT**

Poly methyl methacrylate (PMMA) thin films were prepared by dip coating method. Benzene was used as a solvent to prepare PMMA thin films for the time periods ranging from 1 min. to 1 h. The thickness of the films deposited was measured by using an electronic thickness measuring instrument (Tesatronic-TTD-20). Fourier Transform Infrared spectrum was used to identify the above said films. X-ray diffraction spectra indicated the predominantly amorphous nature of the films. Surface morphology of the coated films studied by using scanning electron microscope (SEM) indicated the absence of any pits, cracks and pin holes in the surface. Both as grown and annealed films showed smooth and amorphous structures. The closer SEM inspection revealed the presence of self assembled mesoscopic cells. The mesoscopic structure PMMA thin films could be used as an AFM-based data storage which is promising alternative to conventional magnetic data storage because it offers great potential for considerable storage density improvements.