

Abstract

Boron Nitride thin films are deposited on glass and silicon substrates using RF magnetron sputtering in argon atmosphere under various sputtering powers in the range of 100W to 160W and various substrate to target distances. Different characterization techniques are used for the analysis of samples. The influence of varying RF power and substrate to target distance on the structural and optical properties was studied using FTIR, SEM and Spectroscopic ellipsometry. The surface morphology of deposited films was studied using a scanning electron microscope. The microstructure of films are analysed by Fourier transform microscopy. FTIR spectra show the various transmission peaks of h-BN phase and c-BN phase. Contact angle measurement shows that BN film becomes less hydrophilic on increasing RF power or decreasing the substrate to target distance. Refractive index of BN thin films are measured by ellipsometry.