**Surface and Optical Characterization of TiO2 Thin Films Deposited by RF Sputtering**

Gujjula Ramya1, Pradeep Kumar1, Ch. Rajakumari1 and Pushpa Giri1, a

1Department of Electronics and Communication Engineering,

VNRVJIET, Hyderabad, India

aElectronic-mail- pushpa02.mnnit@gmail.com

***Abstract* --- In this paper, coating of the Titanium Dioxide (TiO2) thin films over the p-type Silicon <100> substrate using RF sputtering unit have been presented. The morphological, structural and optical properties of TiO2 thin films were analyzed. The XRD peaks displayed that the films are having good crystalline nature; peaks have anatase phase, large crystallite size and less strain. The grain size and roughness were estimated using AFM images. The transparency of TiO2 thin films in the visible wavelength was observed greater than 80% and further the optical bandgap was calculated as 3.6eV.**

***Keywords—TiO2 thin films; RF Sputtering; XRD; AFM; Bandgap.***