

## **Study of titanium dioxide thin film by sol-gel method**

### **Abstract**

Titanium dioxide (TiO<sub>2</sub>) thin films based interdigitated electrodes (IDEs) have been synthesized using sol-gel method with hydrochloric acid (HCl) as catalyst. The prepared TiO<sub>2</sub> solution has been deposited onto silicon dioxide (SiO<sub>2</sub>) substrates via spin-coating technique. Film was annealed at 500 °C and aluminium (Al) IDEs have been fabricated. Finally the X-ray diffraction (XRD) shows high intensity of both anatase and rutile peaks exist on 10 nm TiO<sub>2</sub> thin film. Average crystallite size of the nanoparticles is seen to be 25 nm. UvVisible spectroscopic (UvVis) technique was used for the transmittance spectra characterization of the sample.

**Keywords;** Sol-Gel, Structural Properties, Titania