

## **Surface modification of titanium dioxide thin film for ss-DNA detection**

### **Abstract**

This paper studies the Capacitance-Frequency of titanium dioxide ( $\text{TiO}_2$ ) thin film-based interdigitated electrodes (IDEs) for ss-DNA immobilization.  $\text{TiO}_2$  thin film was deposited on P-type silicon dioxide ( $\text{SiO}_2$ ) (1 0 0) substrates using monoethanolamine (MEA) sol-gel route by spin-coating method. Titanium butoxide was used as a precursor source while ethanol and MEA were used as a disperser and stabilizer respectively. Metal IDEs of aluminium (Al) was deposited on the synthesized films for the electrical characterization. From the electrical data, it proves that the synthesized  $\text{TiO}_2$  thin film is effective and can be used for the synthesis of  $\text{TiO}_2$  thin films with biomedical application.

**Keywords;** ss-DNA, Surface Modification, Thin Film, Titanium Dioxide ( $\text{TiO}_2$ )