

## **Development of dielectric material, CaCu<sub>3</sub>Ti<sub>4</sub>O<sub>12</sub>**

### **ABSTRACT**

CaCu<sub>3</sub>Ti<sub>4</sub>O<sub>12</sub> (CCTO) was prepared by a conventional solid state reaction method. CCTO sample was pre-sintered at 900°C for 10 hours and sintered at 1075°C for 12 hours. The dielectric properties of the sample were measured using HP 4192A LF Impedance Analyzer. The complex permittivity was measured within the frequency range from 10 Hz to 106 Hz and the temperature ranging from 30°C to 400°C. The results showed that the dielectric constant and dielectric loss factor of the sample are frequency dependent and temperature dependent. CCTO sample exhibits a high dielectric constant which is around 105. Dielectric constant increases with decreasing frequency due to interfacial polarization. This could be explained by the Maxwell- Wagner effect.