

**DEVELOPMENT OF DIELECTRIC MATERIAL,  $\text{CaCu}_3\text{Ti}_4\text{O}_{12}$**

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**ABSTRACT**

$\text{CaCu}_3\text{Ti}_4\text{O}_{12}$  (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  $10^6$  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.

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