

Dielectric and optical study of high dielectric CCTO ceramics

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Abstract. $\text{CaCu}_3\text{Ti}_4\text{O}_{12}$ /CCTO ceramic was synthesized by conventional solid state reaction route. The structural, microstructural, optical, and dielectric properties of the CCTO ceramics, sintered at different temperatures, have been investigated and discussed in detail. XRD analysis confirmed the formation of single perovskite phase at 1050 °C for 4 h. The CCTO ceramic samples, sintered at 1100 °C showed better microstructural and dielectric properties. The RT values of ϵ_r and $\tan\delta$ at 1 kHz frequency of the CCTO ceramic samples sintered at 1100 °C were found to be ~ 11,537 and 0.21, respectively.

Keywords CCTO, Dielectric, XRD, SEM.

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