## Influence of ER doping on the microstructural and dielectric properties of microwave sintered calcium copper titanate

## ABSTRACT

The present work reports synthesis, as well as a detailed characterization of structural, morphological and dielectric properties of Er doped CaCu3Ti4-xErxO12 (CCTEO) with x = 0.00, 0.02, 0.10, 0.20 and 0.50 mol% ceramics were prepared by sol-gel route. The prepared samples were sintered by using microwave sintering. The phase composition and microstructure were studied by means of X-ray diffraction (XRD) and high resolution scanning electron microscopy (HRSEM). The crystal structure did not change on doping with erbium; and it remained cubic when all the six compositions were studied. At lower frequencies, it was found that the dielectric constants had a maximum value at 0.5 mol% of Er. This result indicates that a certain amount of Er dopant can be improve the dielectric properties of CaCu3Ti4O12.

Keyword: Ceramics; Dielectric properties; Microstructure; Microwave sintering; Sol-gel