



## Effect of MnCo<sub>2</sub>O<sub>4</sub>-Nanoparticles Doped in Polyvinyl Alcohol (PVA) on the Structural and Dielectric Properties

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### Abstract:

Single-phase manganese cobaltite (MnCo<sub>2</sub>O<sub>4</sub>) nanoparticles were prepared by sol-gel method followed by calcination at 750 °C for 6 hours. The effects of polyvinyl alcohol (PVA) agent on the structural, morphology, electrical and dielectric properties induced heating characteristics of MnCo<sub>2</sub>O<sub>4</sub> nanoparticles were investigated. The small particle size and narrow size distribution of the MnCo<sub>2</sub>O<sub>4</sub> powders characterized by scanning electron microscopy were ameliorated using PVA agent.

Electrical and Dielectric properties of MnCo<sub>2</sub>O<sub>4</sub> nanoparticles studied by impedance spectroscopy showed semiconductor comportment with the highest permittivity and conductivity at room temperature. The MnCo<sub>2</sub>O<sub>4</sub> nanoparticles assisted by PVA exhibited the high dielectric constant of 2500 F m<sup>-1</sup> comparison with 800 Fm<sup>-1</sup> for the powders sol-gel without using PVA.



### Biography:

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