

44.Synthesis of Ni-Co-Zn ferrite nanoparticles by Sol-gel method and their characterization

R. B. Bhise, S. M. Rathod, A.K.Supekar, A.D. Suryawanshi.

ABSTRACT

Nanocrystalline $\text{Ni}_{1-x}\text{Co}_x\text{Zn}_{1+x}\text{Fe}_2\text{O}_4$ ($x=0.2, 0.4$ and 0.6) ferrites were synthesized by Sol-gel Auto Combustion method. The powders were sintering at 400°C and 700°C for 2 h to densify properly. The samples were characterized by X-RD, SEM and FT-IR. The X-RD confirms single phase spinal Structure. The Lattice constant of the prepared powder samples were calculated from X-RD peaks and it increases gradually with increasing in Co and Zn content. The FT-IR spectra confirmed that synthesis material is ferrite. Morphology of ferrite powders were investigated by using SEM.

Key Words: Sol-gel Auto Combustion method, Nano crystalline, X-RD, FT-IR, SEM.