Abstract

Nano-particles of polycrystalline Zn Fe2 O4 are prepared using sol-gel method with Ni, and Sm. They are obtained as dried gel after the successful chemical reaction of their respective metal nitrate solutions in the midst of citric acid as catalyst. Synthesis of materials is confirmed using XRD from the report of single phase polycrystalline ferrite material. The magnetic properties of Zn-ferrite ceramics Zn1-x-y Ni+y Smx Fe2 O4, (where x = 0.01, 0.012, 0.014, 0.016,
y\text{=}0.001) were synthesized by sol gel auto combustion method. The structure and composition of Sm doped Zn-ferrite ceramics were analyzed and the nano size was confirmed by the SEM monographs. The VSM studies confirm the magnetic behaviour by analyzing the change in magnetic saturation and coercivity of these nano materials.

Reference


Index Terms

Computer Science

Applied Science
**Key words**

- Ferrimagnetic materials
- Nanomaterials
- Magnetization
- VSM
- SEM