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## Spectroscopy investigation of nanostructured nickel-zinc ferrite obtained by mechanochemical synthesis

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Graphical abstract

Highlights

- Nano powder of  $\text{Ni}_{0.5}\text{Zn}_{0.5}\text{Fe}_2\text{O}_4$  prepared by a soft mechanochemically after 10h milling.
- Phase formation controlled by XRD, Raman and IR spectroscopy.
- Spectroscopy measurements indicate that the prepared samples have spinel structure.
- The average particles size are found to be around 20nm.
- The degree of inversion is  $\delta=0.36$  for NZF obtained from hydroxides for 10h.

Abstract

Nano crystalline samples of nickel-zinc ferrite,  $\text{Ni}_{0.5}\text{Zn}_{0.5}\text{Fe}_2\text{O}_4$  were prepared by mechanochemical route in a planetary ball mill starting from two mixtures of the appropriate quantities of the powders: case (1) oxide powders: NiO, ZnO and  $\alpha\text{-Fe}_2\text{O}_3$

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