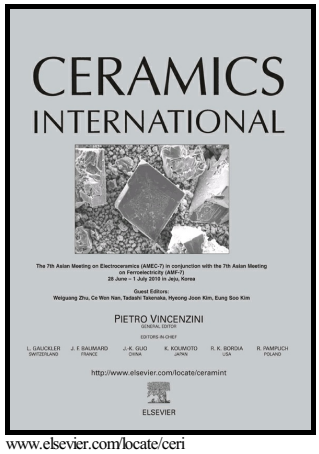

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Zaheer Abbas Gilani, Muhammad Shahzad Shifa, H M Noor ul Huda Khan Asghar, Muhammad Azhar Khan, Muhammad Naeem Anjum, Muhammad Nauman Usmani, Rajjab Ali, Muhammad Farooq Warsi

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ABSTRACT

Praseodymium substituted nano crystalline LiCo spinel ferrites with different concentrations were fabricated by micro-emulsion route. TGA, X-ray diffraction and magnetic properties was employed to study the effect of substitution of the Pr on the structure and magnetic parameters. XRD confirmed the formation of the single phase spinel ferrites with minor coexistence of orthophase. The particle size from XRD data was calculated in range from 53nm to 106nm. The VSM was employed for magnetic studies between -10000Oe and 10000Oe range. Considerable high value of 'Hc' coercivity (1581Oe) and an enhanced value of 'Ms' saturation magnetization (51emu/g) have been obtained as result of substitution. The value of Hc is high enough value but in soft ferrite range. Hence synthesized $LiCo_{0.5}Pr_xFe_{2-x}O_4$ ferrites are suitable for high density storage devices application.

Key words: Li-Pr, Praseodymium, Nanocrystalline ferrites, XRD, Microemulsion, Magnetic properties.