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Sunil Kumar[a], Jaswinder Pal[a], Shubhpreet Kaur[a], Vandana Sharma[a], Sajjan Dahiya[b], P.D. Babu[c], Mandeep Singh[a], Avijeet Ray[d], Tulika Maitra[d] and Anupinder Singh[a#]

a. Multifunctional Materials Laboratory, Department of Physics, Guru Nanak Dev University, Amritsar, Punjab, India-143005

b. Department of Physics, Maharshi Dayanand University, Rohtak, Haryana, India-124001

c. UGC-DAE Consortium for Scientific Research, R-5 shed, BARC, Mumbai-400085

d. Department of Physics, Indian Institute of Technology, Roorkee, Uttarakhand-247667

 # Correspondence Author: anupinders@gmail.com

Abstract

Processing parameters play an important role in tailoring the physical and chemical properties of materials. Effect of sintering temperature on the multiferroic properties of $(Nd_{0.2}Pb_{0.8})(Fe_{0.2}Ti_{0.8})O_3$ solid solutions synthesized using conventional solid state reaction route has been reported. XRD investigations show that the solid solutions possess tetragonal structure (P*4mm*). The samples exhibit both ferroelectric and magnetic hysteresis loops at room temperature. The remnant polarization (P_r) and saturation polarization (P_S) increases with increasing sintering temperature. The remanent magnetization (M_r) as well as coercive field (H_c) both varies with sintering temperature. The magnetic studies reveal that samples exhibit a ferromagnetic order due to Fe^{3+} ions and Nd moments does not order down to lowest