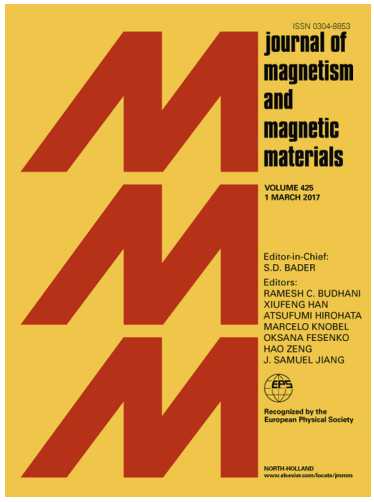


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# Effect of magnetic field annealing on the magneto-elastic properties of nanocrystalline $NiFe_2O_4$

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**Abstract**

The effect of magnetic-field annealing on the strain sensitivity ($q$) and saturation magnetostriction ($\lambda_s$) of $NiFe_2O_4$ nanoparticles synthesized by citrate-gel method was investigated. The use of field-annealing resulted in improved magnetoelastic properties at the expense of coercivity. A maximum $\lambda_s$ of - 40 ppm at 2 kOe, associated with $q$ value of - 3.3 ppm/Oe at 5 Oe was achieved in the field-annealed $NiFe_2O_4$.

**Keywords:** Nanoparticles; Magnetic materials; Magneto-elastic; Magnetostriction; Sintering; Sensors.