

## **Anomalous Magnetoresistance in $\text{Fe}_{1-x}\text{Ni}_x$ binary alloys**

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**Abstract :** Prepared  $\text{Fe}_{1-x}\text{Ni}_x$  ( $x=0.1, 0.4, 0.5, 0.6, 0.7, 0.9$ ) polycrystalline alloys have been considered for resistivity measurement at zero magnetic field and 8T magnetic field. For  $x=0.1$  and  $0.4$  negative magneto-resistance (MR) is observed and for other sample MR is positive. Though all the samples are ferro-magnets, due to antiferromagnetic coupling and spin-flip scattering in some samples, MR becomes negative. At low temperature region electron-electron scattering contributes to the MR whereas at room temp region electron-phonon scattering contributing to the MR. MR value is irrespective of the crystal phase possessed by all the samples.

**Key Words :** Resistivity, Magnetoresistance, Antiferromagnetic coupling, Spin-flip scattering.

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