

# Phase transitions in Fe–Rh alloys induced by magnetic field

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The nearly equiatomic Fe–Rh alloys when heated without an external influences to critical temperature suffer the first-order antiferromagnetic–ferromagnetic transition. The reverse transition takes place at lower temperature. The width of thermal hysteresis can be varied by the changing of alloy’s chemical content, preparation technique of the samples, heat- and mechanical treatment in wide range of temperatures [1,2]. To decrease the hysteresis - it is importante for technical applications. More over, each subsequent measurement leads to changing of the antiferromagnetic–ferromagnetic transition temperature.

This research work was aimed to find the composition of equiatomic Fe–Rh alloy with extremly narrow thermal hysteresis and repeatable results. Vibrating sample magnetometer by Lake Shore was used for measurements of magnetic moment versus temperature in range of 100-950 K.

## References:

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- [2] M.P. Annaorazov, H.M. Guven, K. Barner, J. All. and Comp. 397 (2005) 26–30