Contribution submission to the conference Regensburg 2010

Magneto-impedance measurements on iron whiskers —
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After the discovery of the giant magneto-impedance (GMI) effect in 1994, the research on GMI mainly focuses on the enhancement of the effect by developing new materials and on potential applications. But a better understanding of the effect itself is as well needed. GMI measurements on iron single crystals (iron whiskers) with <100> growth direction were carried out at room temperature. The GMI effect of the whiskers has been observed as a function of driving current and frequency. A maximum MI value of 63% was found for the chosen samples having a particularly simple domain structure. MOKE imaging was employed to investigate more clearly the relationship between GMI effect and the respective domain structures. It was found that the magnetic-field-dependent skin effect provides major contributions.

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