Magnetization Measurements of Current-Flown Iron Whiskers

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The influence of an electric current flowing in the direction of the long crystal axis of <100> iron whiskers upon the magnetic hysteresis curve is investigated. The magnetization curves of the whiskers with rectangular cross sections of 30 to 200 (μ m on a side were measured inductively and compared to the actual domain structure modified by the self-magnetic field of the current. A simple model permits the explanation of the current-induced changes of the magnetization curves.