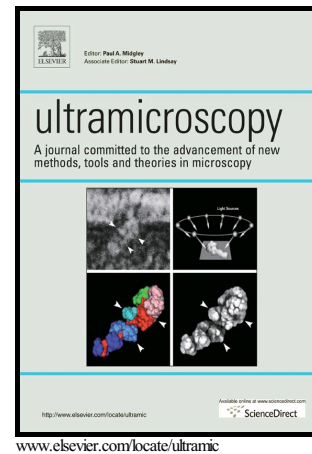


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Magnetic phase shift reconstruction for uniformly magnetized nanowires

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Abstract

A new analytical model is developed for the magnetic phase shift of uniformly magnetized nanowires with ideal cylindrical geometry. The model is applied to experimental data from off-axis electron holography measurements of the phase shift of CoFeB nanowires, and the saturation induction of a selected wire, as well as its radius, aspect ratio, position and orientation, are determined by fitting the model parameters. The saturation induction value of 1.7 T of the CoFeB nanowire is found to be similar, to within the measurement error, to values reported in the literature.

Keywords: Electron Holography; Magnetic Nanowire; Magnetic Phase Reconstruction; Phase Shift Model.

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