

Anomalous dispersion effect on x-ray reflectivity intensities around multilayer Bragg peaks

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Abstract

X-ray reflectivity intensities of (Gd/Fe) multilayer samples were measured with x-ray energies around Gd L₂ edge. It has been observed that interferences between total thickness fringes and multilayer peak evolve as a function of x-ray energy. It is attributed to anomalous dispersion in atomic x-ray scattering factor of Gd atoms. Results of numerical simulations as well as experimental data will be presented.