Summit to: RMC

Optical Properties of Lanthanide Elements, Sm and Tb, Derived with Reflection Electron Energy Loss Spectroscopy

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EXTENDED ABSTRACT: The frequency dependent energy loss function and the related optical constants, for two rare earth metals, samarium (Sm) and terbium (Tb), were derived in a wide energy loss (i.e. photon energy) range of 0-180 eV from reflection electron energy loss spectroscopy (REELS) spectra. The experimental measured REELS spectra normalized with the elastic peak intensity were analyzed by removing surface excitation effect, elastic scattering effect and multiple effect with our latest reverse Monte Carlo (RMC) technique. The RMC method also combines the optimization of the energy loss function in a simulated annealing procedure for the trial simulation of REELS spectrum in order to fit with the measured spectrum. The accuracy of the subtracted energy loss function was verified by applying the Thomas-Ritchie-Kuhn and the perfect-screening sum rules.

Keywords： optical constants; samarium; terbium; reverse Monte Carlo; reflection electron energy loss spectroscopy

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BIOGRAPHY

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