구두발표 I-5

Prediction of giant magnetostriction of a $Fe_{1-x}Be_x$ binary alloy

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Magnetostriction coefficients of some ordered BeFe alloys were investigated, using first principles calculation. The full-potential linearized augmented plane wave (FLAPW) method was employed within general gradient approximation for electron interactions. A giant magnetostriction coefficient (~1160 ppm) of a $Fe_{0.875}Be_{0.125}$ alloy was predicted to bee nhanced more than 50 times, compared to the calculated value (21ppm) of bulk Fe. We elucidated the origin of the giant magnetostriction coefficient of $Fe_{0.875}Be_{0.125}$ with the change of its single particle energy spectra with at teragonal distortion.