STRAINED TETRAGONAL BAIN PATHS IN Fe_3Pt INVAR

M. Pugaczowa–Michalska and S. Lipiński

Institute of Molecular Physics, PAS, Smoluchowskiego 17, 60–179 Poznań, Poland

The Bain paths can be defined in terms of special imposed stresses. We compare the two physically realizable paths, EBP – epitaxial Bain path (isotropic biaxial) and UBP – uniaxially strained path with the hydrostatic pressure path. The calculations for Fe_3Pt are performed using the full–potential LMTO scheme. The results suggest high fcc–bcc lattice deformation barrier what implies high interfacial energy of martensite nuclei. The barrier energy sensitively depends on the Bain path. For EPB and UPB it is lower than for volume conserving paths. We also present the bulk modulus and the tetragonal shear constant for several distortion parameters.

9.7 cm

13.4 cm

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Corresponding author :
M. Pugaczowa–Michalska

Address for correspondence :
Institute of Molecular Physics
Polish Academy of Sciences
Smoluchowskiego 17, 60–179 Poznań

Email address :
maria@ifmpan.poznan.pl