Morphotropic phase boundaries in ferromagnets: Tb1-xDyxFe2 alloys - DTU Orbit
(07/02/2019)

Morphotropic phase boundaries in ferromagnets: Tb1-xDyxFe2 alloys
The structure and properties of the ferromagnet Tb1-xDyxFe2 are explored through the morphotropic phase boundary (MPB) separating ferroic phases of differing symmetry. Our synchrotron data support a first order structural transition, with a broadening MPB width at higher temperatures. The optimal point for magnetomechanical applications is not centered on the MPB but lies on the rhombohedral side, where the high striction of the rhombohedral majority phase combines with the softened anisotropy of the MPB. We compare our findings with single ion crystal field theory and with ferroelectric MPBs, where the controlling energies are different.

General information
State: Published
Organisations: University of Maryland, National Institute of Standards and Technology, Oak Ridge National Laboratory
Contributors: Bergstrom, R., Wuttig, M., Cullen, J., Zavalij, P., Briber, R., Dennis, C., Garlea, V. O., Laver, M.
Pages: 017203
Publication date: 2013
Peer-reviewed: Yes

Publication information
Journal: Physical Review Letters
Volume: 111
Issue number: 1
ISSN (Print): 0031-9007
Ratings:
BFI (2019): BFI-level 2
Web of Science (2019): Indexed yes
BFI (2018): BFI-level 2
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 2
Scopus rating (2017): CiteScore 7.58 SJR 3.622 SNIP 2.464
Web of Science (2017): Impact factor 8.839
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 6.33 SJR 4.196 SNIP 2.61
Web of Science (2016): Impact factor 8.462
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): CiteScore 5.76 SJR 4.656 SNIP 2.538
Web of Science (2015): Impact factor 7.645
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): CiteScore 6.62 SJR 5.232 SNIP 2.71
Web of Science (2014): Impact factor 7.512
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): CiteScore 7.46 SJR 5.675 SNIP 2.781
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): CiteScore 7.19 SJR 6.292 SNIP 2.867
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): CiteScore 7.02 SJR 6.314 SNIP 2.905
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2