

MFM Study of the Domain Structure of Permalloy Microparticles under Mechanical Stress

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Abstract

© 2018 The Authors, published by EDP Sciences. The domain structure of planar permalloy (Py) microparticles was studied under mechanical stress. An array of Py particles was formed by electron beam evaporation of Py on flat and preliminarily bent glass substrates. After evaporation the substrate was unbent and the Py particles were compressed along one axis. The change of the domain structure of stressed particles in comparison with that of unstressed particles was studied. It was shown that the change of the domain structure of Py particles depends on their compression ratio.

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References

- [1] Y. Liu, Q. Zhan, B. Wang, H. Li et al., IEEE Transactions on Magnetics, 51, 2501404 (2015)
- [2] G. Dai, Q. Zhan, H. Yang et al., J. Appl. Phys. 114, 173913 (2013)
- [3] S. Finizio, M. Foerster, M. Buzzi et al., Phys. Rev. Applied, 1, 021001 (2014)
- [4] T. Wu, A. Bur, J.L. Hockel et al., IEEE Magnetics Letters, 2, 6000104 (2011).
- [5] A.I. Morozov, Physics of the Solid State 56, 865-872 (2014)
- [6] A. Bur, T. Wu, J. Hockel et al., J. Appl. Phys., 109, 123903 (2011)
- [7] Z. Hao, L. Yuan-Yuan, Y. Mei-Yin et al., Chinese Phys. B, 24, 07750 (2015).
- [8] A.P. Chuklanov, N.I. Nurgazizov, D.A. Bizyayev et al., Journal of Physics: C 714, 012006 (2016)
- [9] B.A. Belyayev, A.V. Izotov, Physics of the Solid State, 49, 1731-1739 (2007)
- [10] M.J. Donahue, D.G. Porter, OOMMF, (<http://math.nist.gov/oommf/>).
- [11] D.V. Ovchinnikov, A.A. Bukharaev, Technical Physics, 46, 1014-1019 (2001).