

X-PEEM studies

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Summary

Nanomagnets and magnetic heterostructures form the basis for engineering the magnetic properties for application and fundamental research
..... Using recent results taken with the Elmitec PEEM at the SIM beamline [1] the technique and its possibilities will be explained.

Magnetic Nanoparticles

Reducing the size of magnetic particles changes their behaviour drastically and it is not a trivial issue to build a consistent picture of the transition to the single domain state, in particular for supported particle
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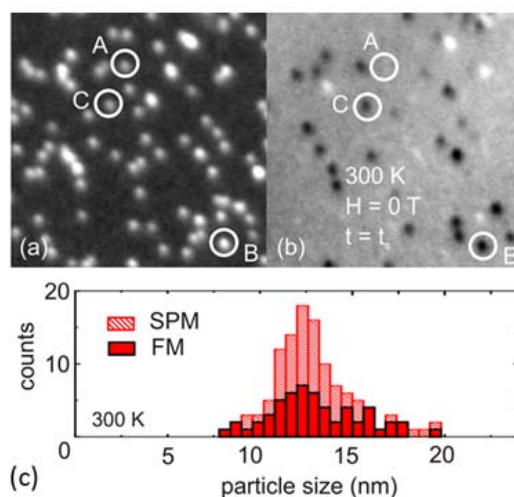


Figure 1: (a), (b) Elemental and magnetic contrast images of the nanoparticles. (c) Size distribution of the ferromagnetic and superparamagnetic particles (adapted from [2]).

Artificial Multiferroic Systems

Artificial multiferroic systems, in which novel properties emerge from the elastic coupling between piezoelectric and magnetostrictive phases
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Acknowledgments

We acknowledge the

References

- [1] – L. Le Guyader, A. Kleibert, A. Fraile Rodríguez, S. El Moussaoui, A. Balan, M. Buzzi, J. Raabe, and F. Nolting, *J. Electron. Spectrosc. Relat. Phenom.* **185**, 371 (2012)
- [2] – A. Balan, P.M. Derlet, A. Fraile-Rodríguez, J. Bansmann, R. Yanes, U. Nowak, A. Kleibert, and F. Nolting, *Phys. Rev. Lett.* **112**, 107201 (2014)