

Isotope-selective measurements in layered magnetic nanostructures

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Abstract

The magnetism of nanostructured materials in the form of ultrathin films is an important current topic in material science and technology. The study of buried magnetic interfaces is particularly challenging, and the combination of Mössbauer spectroscopy and/or nuclear resonant scattering (NRS) of synchrotron radiation with isotope-enriched probe layers can be a powerful tool in this field. In this talk, we introduce the use of isotope enriched probe layers in Mössbauer spectroscopy and present, as example, recent results on the investigation of depth-dependent spin structure in exchange-biased ferromagnetic / antiferromagnetic nanostructured bilayers by using ^{57}Fe probe layers, conversion electron Mössbauer spectroscopy (CEMS) and NRS.