HYPERFINE FIELDS AT THE ^{119}Sn NUCLEAR SITES EMBEDDED IN Cr LAYERS OF Fe/Cr MULTILAYERS

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9.7 cm

In order to obtain information about the local magnetic properties of Cr layers in Fe/Cr multilayer systems, the magnetic hyperfine fields induced at the ^{119}Sn nuclear sites of epitaxial Fe/Cr/Sn/Cr multilayers with monatomic Sn layers were studied through ^{119}Sn conversion electron Mössbauer spectroscopy. The results were compared with those for Cr/Sn multilayers [1]. The hyperfine fields at the Sn nuclear sites of Fe/Cr/Sn/Cr multilayers at room temperature decrease from 9 to 2 T as the Cr layer thickness decreases from 40 to 5 Å, whereas those for Cr/Sn multilayers increase a little from 11 to 12 T in the same thickness region. The difference in magnetic hyperfine fields in both systems is thought to be due to an influence of Fe on the magnetic properties of Cr [2]. Possible magnetic structures of the Cr layers are inferred from the size and direction of the magnetic hyperfine field transferred at the Sn nuclear sites.

[1] K. Mibu *et al.*, J. Phys. Soc. Jpn. **67** (1998) 2633.
[2] K. Mibu *et al.*, J. Magn. Magn. Mater. (1999), to be published.

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