Anisotropic hyperfine field fluctuation in Ba_2FeMoO_6

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Abstract

The double perovskite Ba_2FeMoO_6 has been studied by Mössbauer technique, neutron and X-ray diffraction. The structure is found to be cubic with lattice constant $a_0 = 8.0747$ Å. As the temperature increases towards the Curie temperature, $T_C = 345$ K, Mössbauer spectra show the line broadening and the difference between 1, 6 and 3, 4 line width because of anisotropic hyperfine field fluctuation. The anisotropic field fluctuation of $+H$ ($P_+ = 0.85$) was greater than that of $-H$ ($P_- = 0.15$). We also calculated the frequency factor and temperature dependence on anisotropy energy from the relaxation rate.
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