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Effects of Cr doping on magnetic properties of ordered Sr_2FeMoO_6

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Abstract

The single-phase Cr-doped $Sr_2Fe_{1-x}Cr_xMoO_6$ ($x = 0.00, 0.03, 0.07, 0.1$) powder have been prepared by a solid-state reaction method. The crystalline structure of all the Cr-doped samples was tetragonal (*I4/mmm*) at room temperature, but the crystal symmetry changes into cubic (*Fm-3m*) above the Curie temperature. As the Cr-doping range increases, the saturation magnetization decreases and the coercivity force increase. Mössbauer spectra are shown the line broadening and 1, 6 and 3, 4 linewidth difference due to the anisotropic hyperfine field fluctuation.

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