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Correlation between anti-site disorder and magnetic properties in ordered perovskite $\text{Sr}_2\text{FeMoO}_6$

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Abstract

We have investigated correlation between Fe/Mo disorder and magnetic properties in double perovskite $\text{Sr}_2\text{FeMoO}_6$ (SFMO). The degree of Fe/Mo ordering in SFMO is controlled by sintering temperature. As sintering temperature increases from 1000°C to 1300°C, anti-site disorder decreases from 15% to 8%. However, magnetization(15 K, 7 kOe) increases from 1.93 to 2.75 μ_{B} /f.u. and Curie temperature increases from 375 to 405 K.

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