

Phase transitions in $\text{Er}_{1-x}\text{Lu}_x\text{Fe}_2\text{O}_4$

J. Kim,¹ J. S. Ahn,¹ C. U. Jung,¹ C. S. Kim,² and B. W. Lee^{1,a)}

¹*Department of Physics, Hankuk University of Foreign Studies, Yongin, Kyungki 449-791, Republic of Korea*

²*Department of Physics, Kookmin University, Seoul 136-702, Republic of Korea*

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Phase transitions have been investigated for polycrystalline samples of $\text{Er}_{1-x}\text{Lu}_x\text{Fe}_2\text{O}_4$ ($0 \leq x \leq 0.6$). The magnetization measurements for ErFe_2O_4 showed two-step phase transitions at about 220 and 250 K. The transition at 250 K is an antiferromagnetic transition and that at 220 K is a structural transition. However, two phase transitions do not occur for $0.2 \leq x \leq 0.6$, but a thermoremanent magnetization is observed below 220 K. This indicates that there is no second phase transition for $0.2 \leq x \leq 0.6$. © 2009 American Institute of Physics. [DOI: [10.1063/1.3061724](https://doi.org/10.1063/1.3061724)]