

Supporting Information

**Magnetic and Electrical Properties of LuFe₂O₄ Epitaxial Thin
Films with Self-assembled Interface Structure**

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1. **Figure S1:** Crystal structure of LuFe₂O₄ and out-of-plane XRD patterns of the thin films grown for varied deposition times.
2. **Figure S2:** AFM images of LuFe₂O₄ thin film.

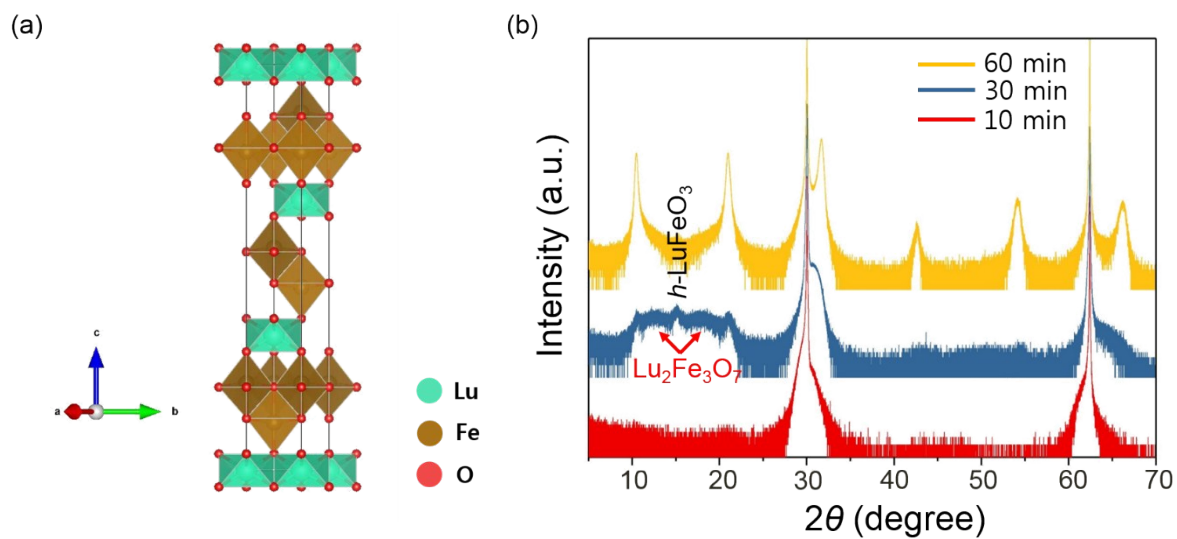


Figure S1. (a) Schematic illustration of crystal structure for LuFe_2O_4 viewed as a hexagonal system. (b) θ - 2θ out-of-plane XRD patterns for the LuFe_2O_4 thin films grown under diverse duration times. The diffraction lines ascribable to h - LuFeO_3 and $\text{Lu}_2\text{Fe}_3\text{O}_7$ phases are observed after 30 min deposition. All the diffraction lines observed for the specimen after 60 min deposition are assigned to LuFe_2O_4 phase.

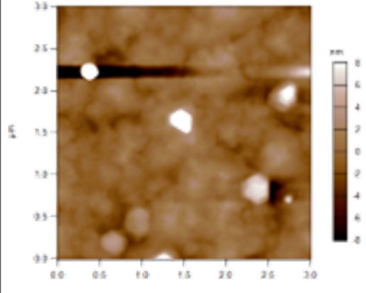
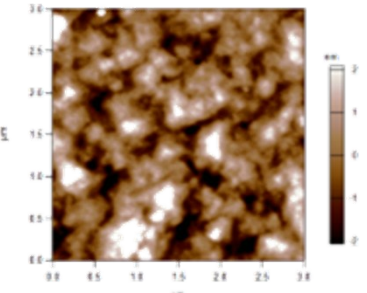
Root Mean Square (RSM, nm)	3.912	1.036
Region ($\mu\text{m} \times \mu\text{m}$)	3 \times 3	
		

Figure S2. AFM images of LuFe₂O₄ thin film.