Supplementary Material for

**Effect of film thickness on microstructural and magnetic properties of lithium ferrite films prepared on SrTiO3 (001) substrates**

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**Table I** Saturation magnetization (Ms) of LiFe5O8 films   
with different thickness grown on different substrate in literatures.

|  |  |  |  |
| --- | --- | --- | --- |
| **Heterostructure** | **Film thickness/nm** | **Ms(in plane/out of plane)/(emu/cc)** | **Ref** |
| LiFe5O8/MgAl2O4(001) | 53 | 154/189 | [1] |
| LiFe5O8/Al2O3(0001) | 60 | 152/118 | [2] |
| LiFe5O8/Al2O3(0001) | 135 | 225/175 | [2] |
| LiFe5O8/SrTiO3(001) | 50 | 48(IP) | [3] |
| LiFe5O8/ SrTiO3 (001) | 100 | 60(IP) | [3] |
| LiFe5O8/ SrTiO3 (001) | 7.5 | 535/443 | This work |
| LiFe5O8/ SrTiO3 (001) | 30 | 194/137 | This work |

**References**

1. Zhang, R.; Liu, M.; Lu, L.; Mi, S.B.; Wang, H. Strain-tunable magnetic properties of epitaxial lithium ferrite thin film on MgAl2O4 substrates, J. Mater. Chem. C 2015, 3(21), 5598-5602.
2. Udhayakumar, S.; Jagadish Kumar, G.; Senthil Kumar, E.; Navaneethan, M.; Kamala Bharathi, K. Electrical, Electronic and Magnetic Property Correlation via Oxygen Vacancy Filling and Scaling-Law Analysis in LiFe5O8 Thin Films Prepared by Pulsed Laser Deposition, J. Mater. Chem. C 2022,10, 15051-15060.
3. Yang, J.; Lei, J. F.; Du, K.; Zheng, X. D.; Jin, X. J. The microwave Magnetism of Epitaxy LiFe5O8 Thin Film Modulated by Thickness, Curr. Appl. Phys. 2020, 20(4), 589-592.