

Electronic Supplementary Information

Tuning the conductivity type in a room temperature magnetic oxide: Ni-doped $\text{Ga}_{0.6}\text{Fe}_{1.4}\text{O}_3$ thin films

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Table 1: Compositions of the Ni-doped films determined by inductively coupled plasma atomic emission spectroscopy (ICP-AES).

Expected Ni content (%)	Fe (%)	Ga (%)	Ni (%)
0.5	72.7 ± 1.3	26.6 ± 0.8	0.7 ± 0.1
2	71.6 ± 1.6	26.1 ± 0.6	2.3 ± 0.1
5	68.9 ± 1.2	26.8 ± 1.0	4.3 ± 0.2

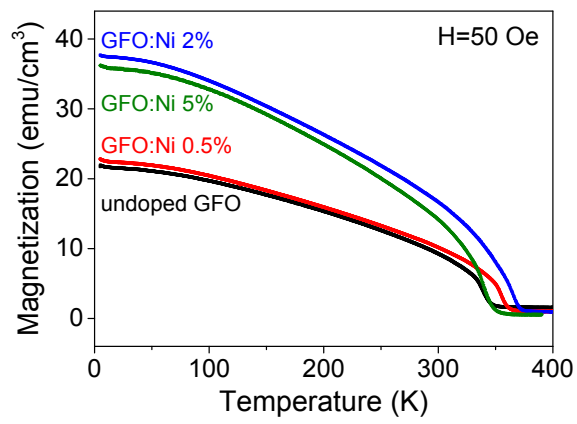
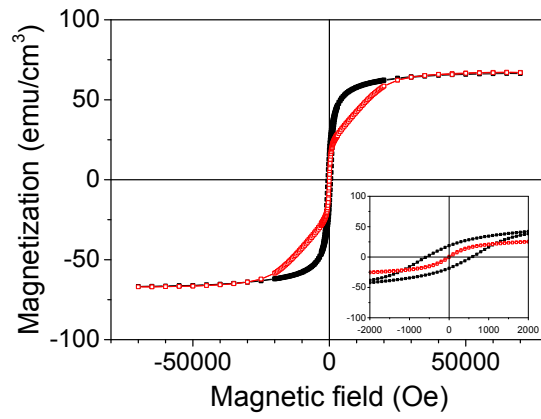
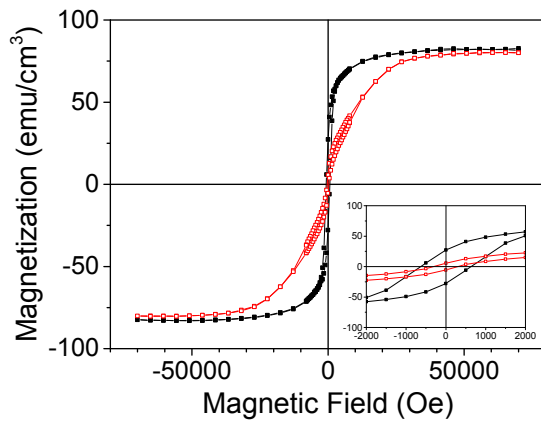


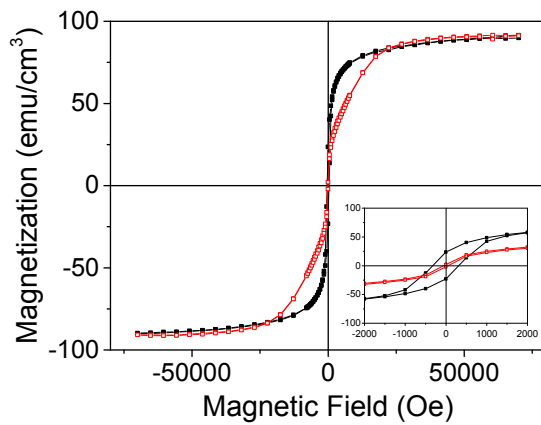
Fig. 1: Field-cooled magnetization curves of the doped and undoped GFO thin films, measured in a 50 Oe magnetic field applied parallel to the films



(a)



(b)



(c)

Fig. 2: Hysteresis curves of the Ni- (a) 0.5%, (b) 2%, and (c) 5% doped GFO thin films, measured at 300 K in parallel (black filled squares) and perpendicular (red hollow squares).

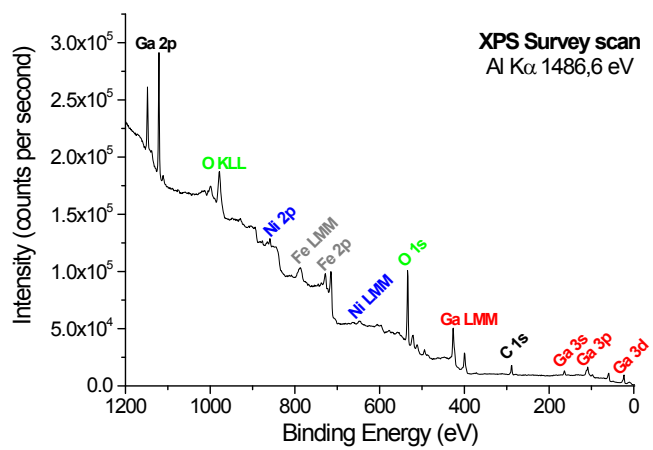


Fig. 3: XPS survey scan spectrum of the 5% Ni-doped sample.