

Electronic Supplementary Information from

# Mn-ferrite Nanoparticles as Promising Magnetic Tags for Radiofrequency Inductive Detection and Quantification in Lateral Flow Assays

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## 1. Magnetization curves and LAS fitting parameters.

Table ESI-1 – Results from the law of approach to saturation fitting, where  $M_s$  is the saturation magnetization, fitting parameters are:  $a_1$ : (related to structural defects),  $a_2$ : (related to the magnetocrystalline and shape anisotropies) and  $a_3$ : (resulting from the high-field susceptibility).

Sample name	$M_s$ (A·m <sup>2</sup> /kg)	$a_1$ (Oe)	$a_2$ (Oe <sup>2</sup> )	$a_3$ (Oe <sup>-1</sup> )	$R^2$
S1 (300 K)	77.5	252.5	$3.3 \times 10^4$	$1.1 \times 10^{-5}$	0.9990
S2 (300 K)	78.2	262.6	$4.0 \times 10^4$	$3.6 \times 10^{-5}$	0.9998
S1 (5 K)	115.6	342.6	$1.7 \times 10^5$	$2.0 \times 10^{-5}$	0.9995
S2 (5 K)	116.2	409.3	$4.0 \times 10^5$	$2.3 \times 10^{-5}$	0.9996