Supplementary figures

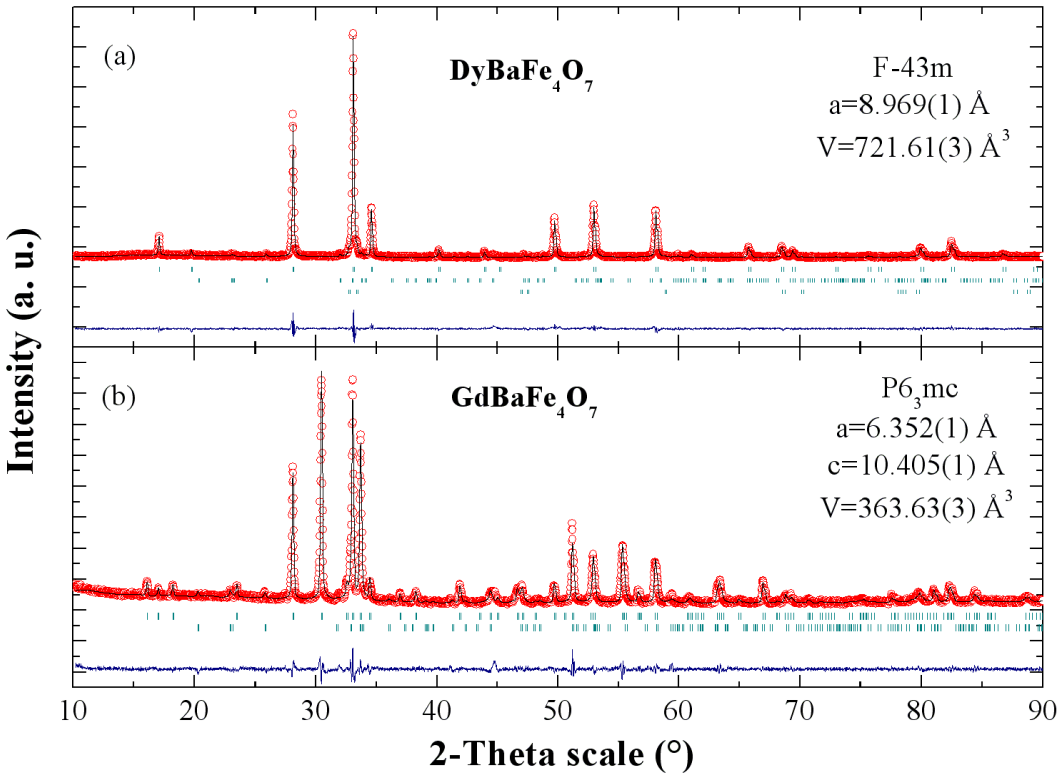

Figure S1: X-ray diffraction patterns for (a) $DyBaFe_4O_7$, and (b) $GdBaFe_4O_7$. The bottom curve is the difference of patterns, $y_{obs}-y_{cal}$, and the small bars indicate the angular positions of the allowed Bragg reflections.

Atom	*x*	*y*	*z*	
Dy	0	0	0	4a
Ba	3/4	3/4	3/4	4d
Fe	0.38295(16)	0.38295(16)	0.38295(16)	16e
O1	0.7550(11)	0	0	24f
O2	1/4	1/4	1/4	4c

$\chi 2$= 3.55, RWP= 4.65%, RB= 5.85%

Table S1: Atomic coordinates of $DyBaFe_4O_7$.

Atom	***x***	***y***	***z***	
Gd	2/3	1/3	0.8764(2)	2b
Ba	2/3	1/3	1/2	2b
Fe1	0.1779(2)	0.8221(2)	0.6771(7)	6c
Fe2	0	0	0.4563(8)	2a
O1	0.4863(10)	0.5137(10)	0.7489(12)	6c
O2	0.1655(8)	0.8345(8)	0.4895(9)	6c
O3	0	0	0.284(8)	2a

χ^2= 5.63, R_{WP}= 2.29%, R_B= 2.26%

Table S2: Atomic coordinates of $GdBaFe_4O_7$.

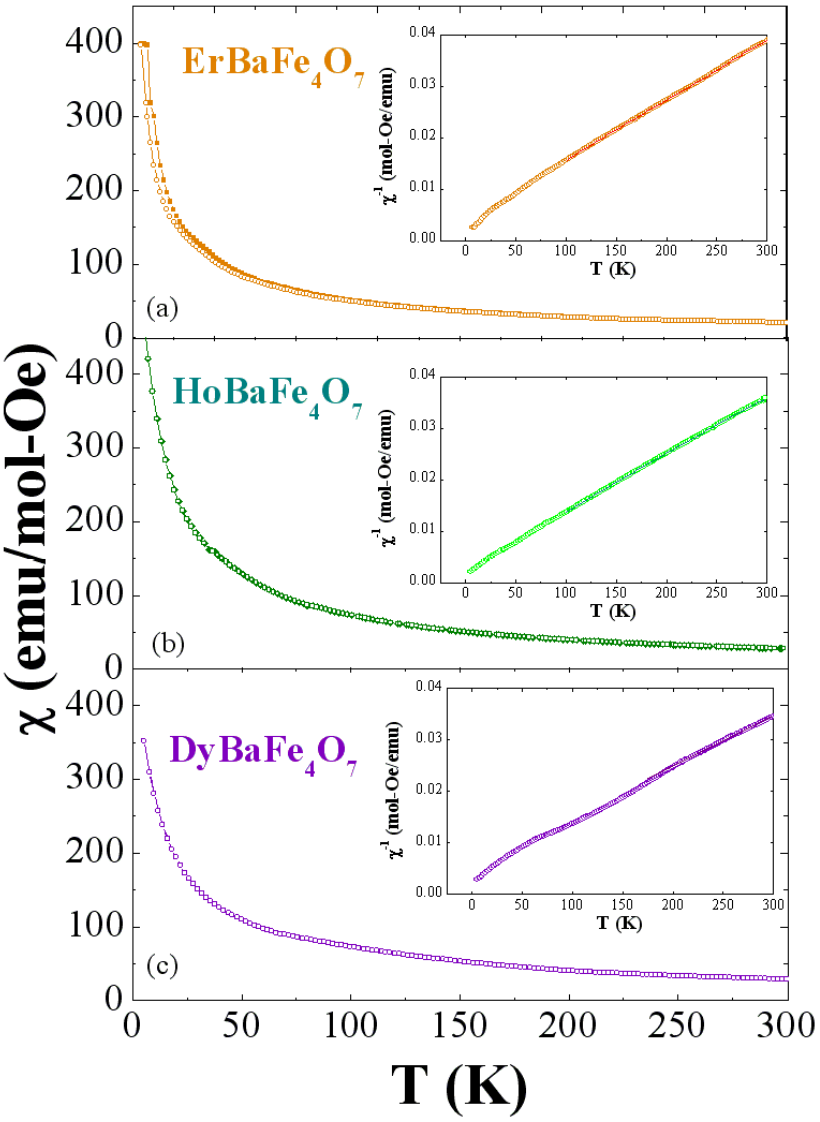

Figure S2: DC magnetization versus temperature dependence χ(T) of the cubic ferrite $LnBaFe_4O_7$ (a) Ln=Er, (b) Ln=Ho, (c) Ln=Dy, registered under 0.3T. Note that field cooled (FC) and zero field cooled (ZFC) curves cannot be really distinguished.