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SUPPLEMENTARY INFORMATION

Ultra-high-entropy rare earth orthoferrite (UHE REO): solution combustion synthesis, structural features and ferrimagnetic behavior

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Table S1. The magnetic properties of orthorhombic rare earth orthoferrites

№	Orthorhombic *RE* orthoferrite	Synthesis method	Crystallite size, nm	Crystallite morphology	M_s emu/g	M_r emu/g	H_c Oe	Reference
					298K			
1	$LaFeO_3$	Citrate-nitrate auto-combustion	23.5	Spherical	0.3	0.049	257	[DOI: 10.1007/s10904-021-01887-5]
2	$HoFeO_3$	Optical-floating-zone	48	Foam	0.043	0.038	84	[DOI: 10.1016/j.jcrysgro.2010.11.014]
3	$ErFeO_3$	Pulsed laser deposition (PLD) technique	–	–	0.58	0.40	2200	[DOI: 10.1063/1.4829468]
4	$GdFeO_3$	Chemical co-precipitation	35	Isometric	0.14	0.025	–	[DOI: 10.1080/07315171.2014.956020]
5	$YFeO_3$	Glycine-nitrate combustion	41	Plate-like	1.09	0.39	22000	[DOI: 10.1007/s10854-017-6676-1]
6	$Ce_{0.7}La_{0.3}FeO_3$	Citrate-nitrate auto-combustion	21.3	Spherical	1.35	0.168	192	[DOI: 10.1007/s10904-021-01887-5]
7	$Pr_{0.7}La_{0.3}FeO_3$	Citrate-nitrate auto-combustion	16.8	Spherical	0.353	0.024	220	[DOI: 10.1007/s10904-021-01887-5]
8	$Nd_{0.7}La_{0.3}FeO_3$	Citrate-nitrate auto-combustion	14.8	Spherical	0.284	0.011	387	[DOI: 10.1007/s10904-021-01887-5]
9	$Sm_{0.7}La_{0.3}FeO_3$	Citrate-nitrate auto-combustion	15.0	Spherical	0.447	0.191	4848	[DOI: 10.1007/s10904-021-01887-5]
10	$Gd_{0.7}La_{0.3}FeO_3$	Citrate-nitrate auto-combustion	22.4	Spherical	1.771	0.027	158	[DOI: 10.1007/s10904-021-01887-5]
11	Σ*RE*FeO_3	Glycine-nitrate combustion	50	Foam-like	1.5	0.53	225	This work

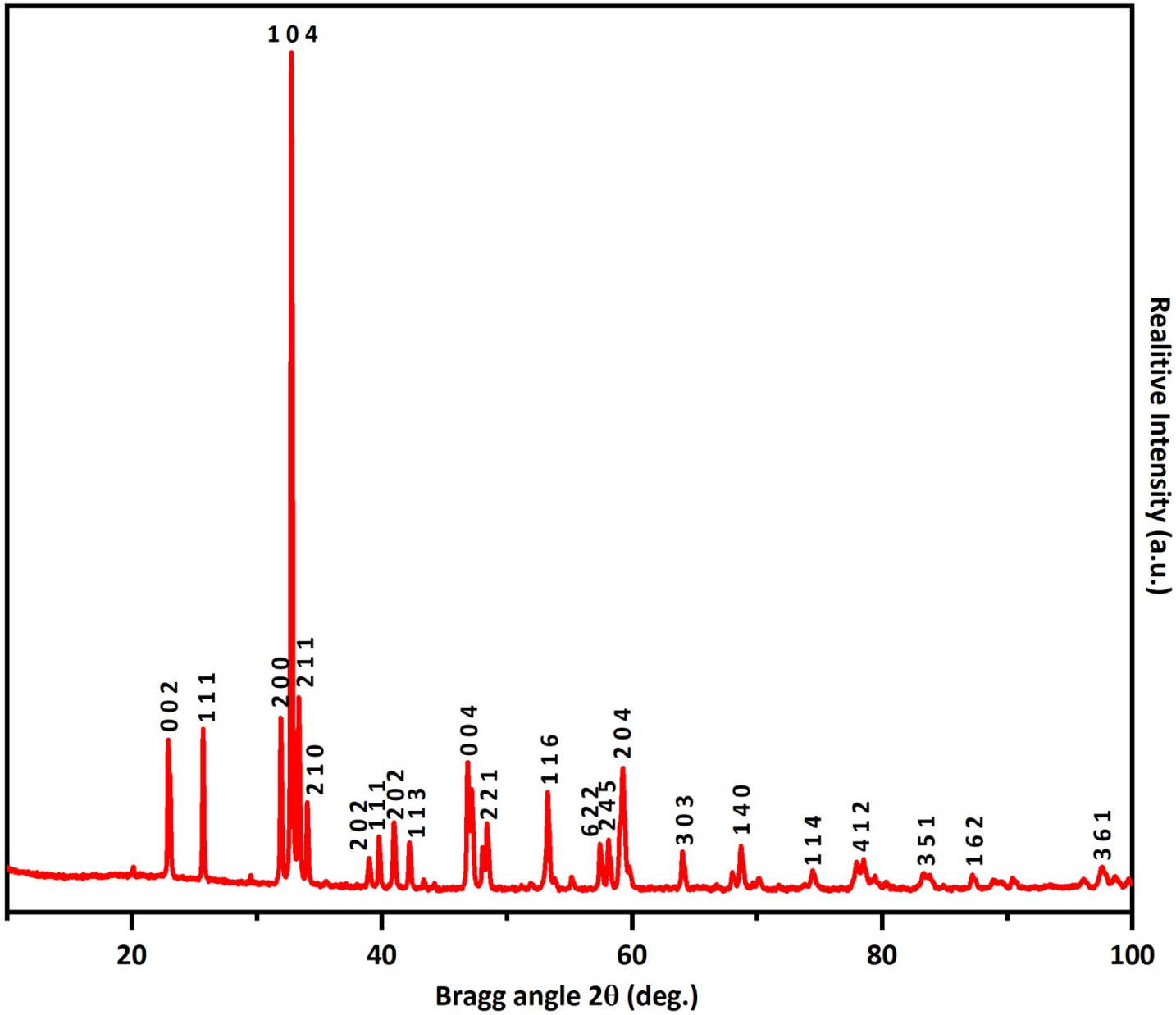

Fig. S1. Expanded PXRD pattern of the UHE REO sample.