Supplementary Material for:

Facile Synthesis of $Nd_2Fe_{14}B$ Hard Magnetic Particles with Microwave-Assisted Hydrothermal Method

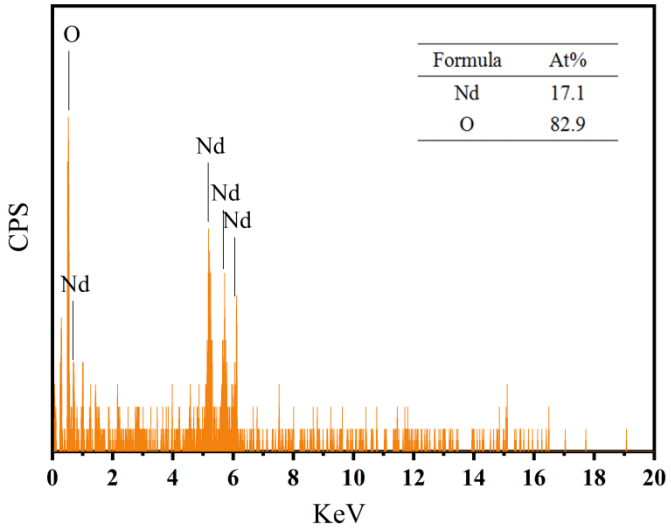


Figure S1. EDS scans of selected points marked #1 in Figure 2.

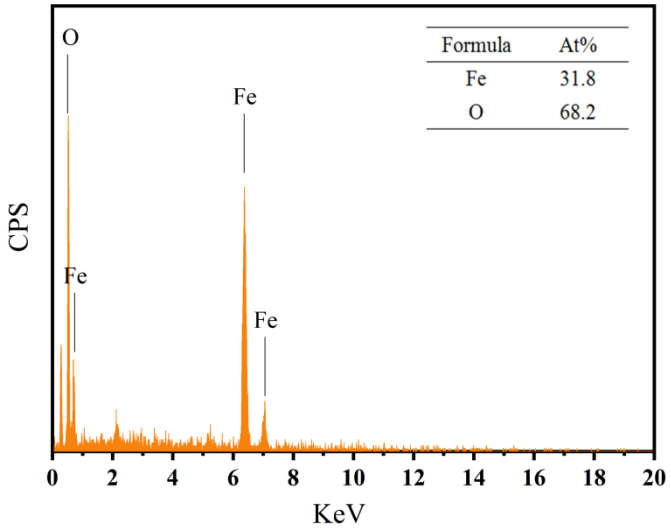


Figure S2. EDS scans of selected points marked #2 in Figure 2.

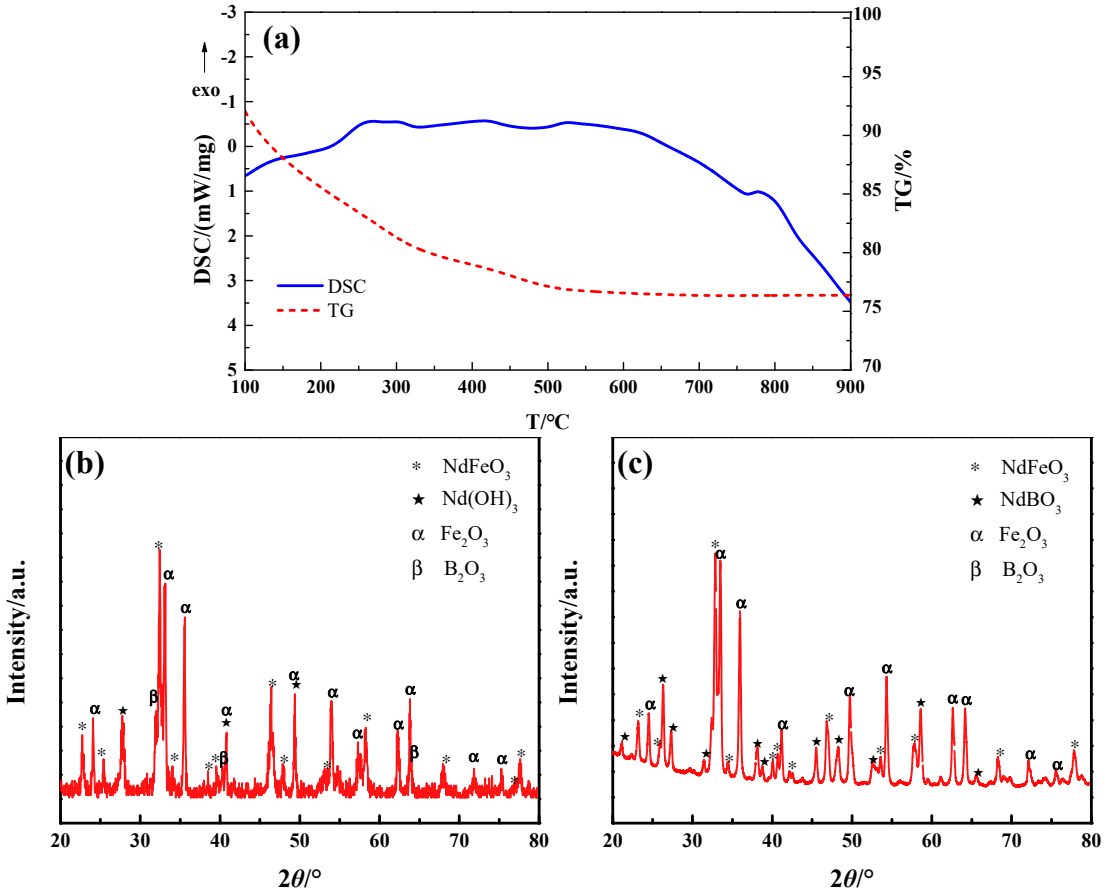


Figure S3 (a) Isochronal DSC of Nd–Fe–B precursor; XRD patterns of Nd–Fe–B precursor heated at temperatures (b) 750°C and (c) 790 °C.

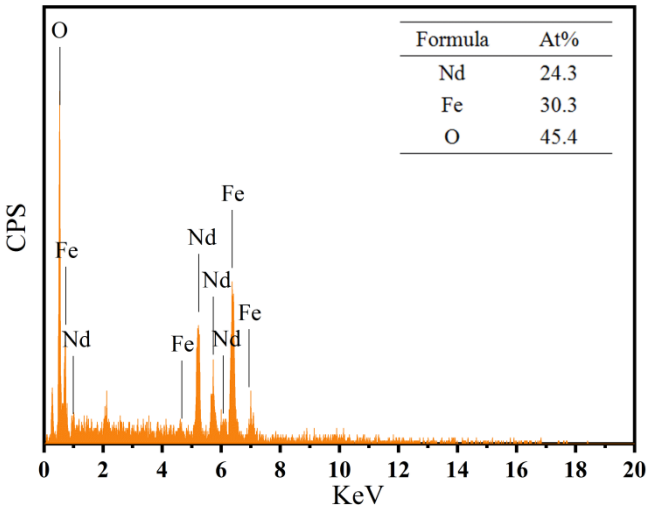


Figure S4. EDS scans of selected points marked #1 in Figure 3.

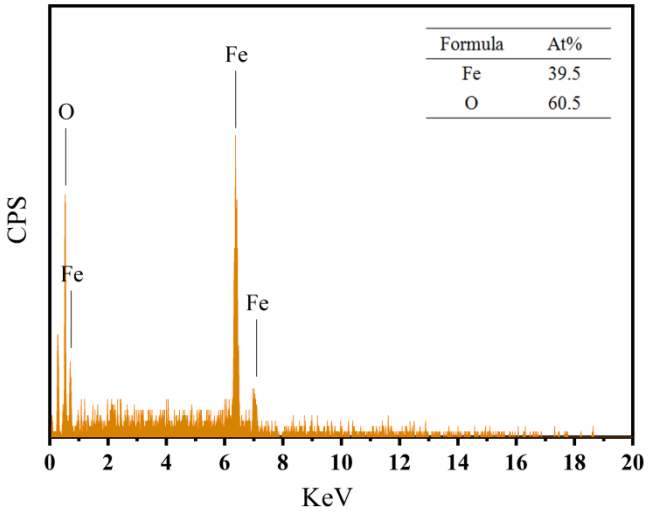
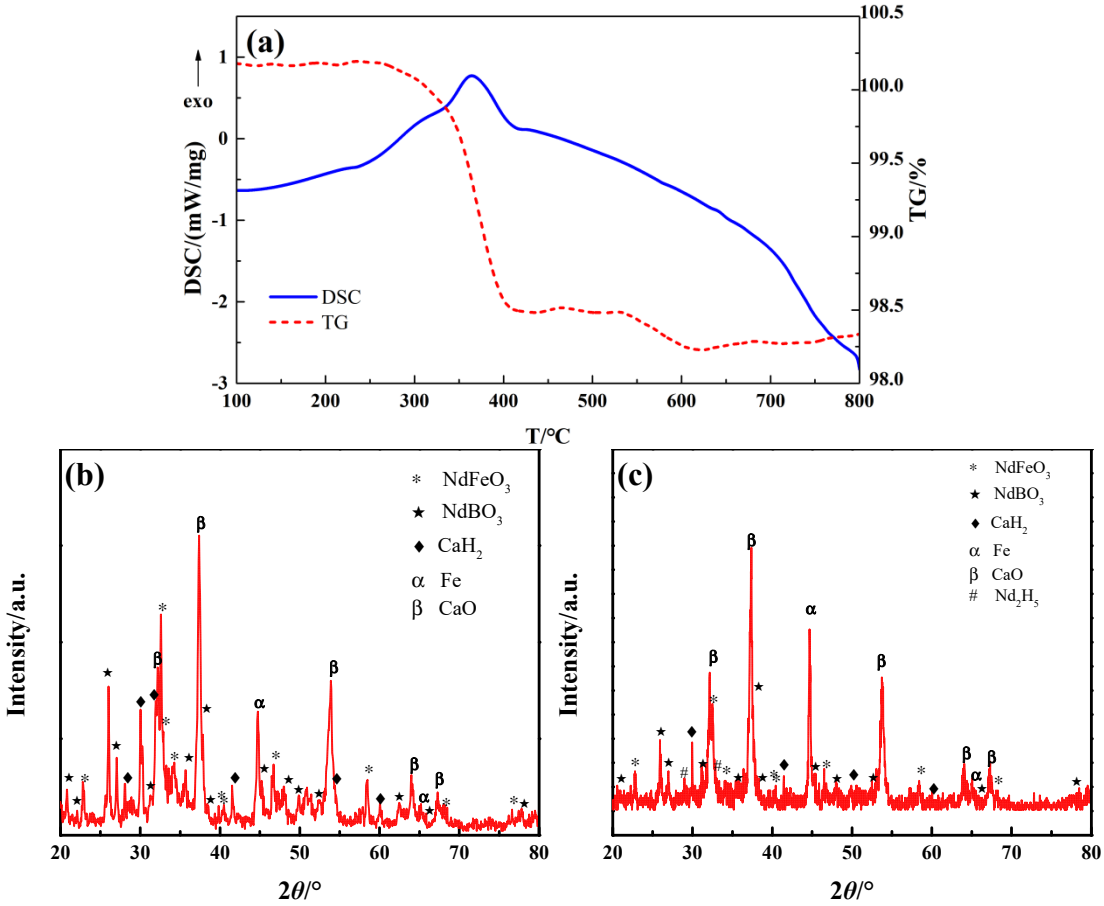


Figure S5. EDS scans of selected points marked #2 in Figure 3.



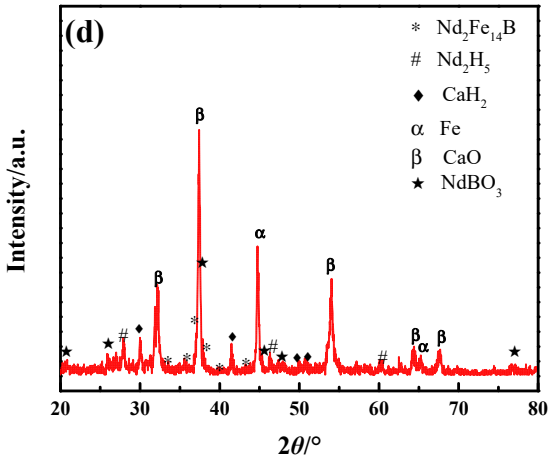


Figure S6 (a) Isochronal DSC of Nd–Fe–B oxide + CaH_2; XRD patterns of Nd–Fe–B oxide + CaH_2 heated at temperatures (b) 365°C , (c) 425°C and (d) 635 °C.

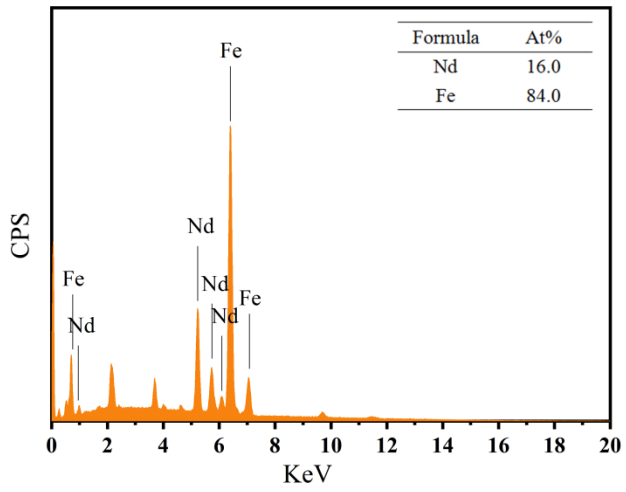


Figure S7. EDS scans of selected points marked #1 in Figure 4.

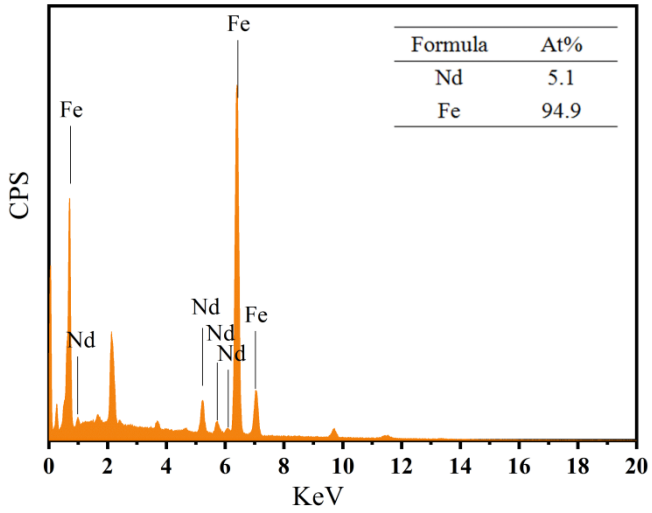


Figure S8. EDS scans of selected points marked #2 in Figure 4.

Table S1 The comparison of preparation of Nd-Fe-B magnetic particles by different chemical methods

Method	Composition	Ms (emu • g^{-1})	Mr (emu • g^{-1})	Hc (kOe)	Particle/Grain size(nm)	Ref.
Spray drying	$Nd_2Fe_{14}B$	148	135	3.9	-	[8]
Auto-combustion	$Nd_2Fe_{14}B$	80	69	3.3	44	[13]
Hydrothermal method	$Nd_2Fe_{14}B$/α-Fe	107	25	1.2	~35	[34]
Sol-gel method	$Nd_2Fe_{14}B$	123	-	0.315	25	[10]
	$Nd_2Fe_{14}B$/α-Fe	88.83	8.89	0.133	50-70	[35]
	$Nd_2Fe_{14}B$	14.17	-	1.02	-	[36]
Microwave-assisted Hydrothermal method	$Nd_2Fe_{14}B$/α-Fe	75.6	36.7	2.3	35	This work