



Supplementary Material for:

Deformation-Thermal Co-Induced Ferromagnetism of Austenite Nanocrystalline FeCoCr Powders for Strong Microwave Absorption

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Table S1. Element composition of FeCoCr powders.

Sample	Fe (wt. %)	Co (wt. %)	Cr (wt. %)
Raw powder	42.88	41.85	15.27
Milling 4 h	42.37	42.28	15.35

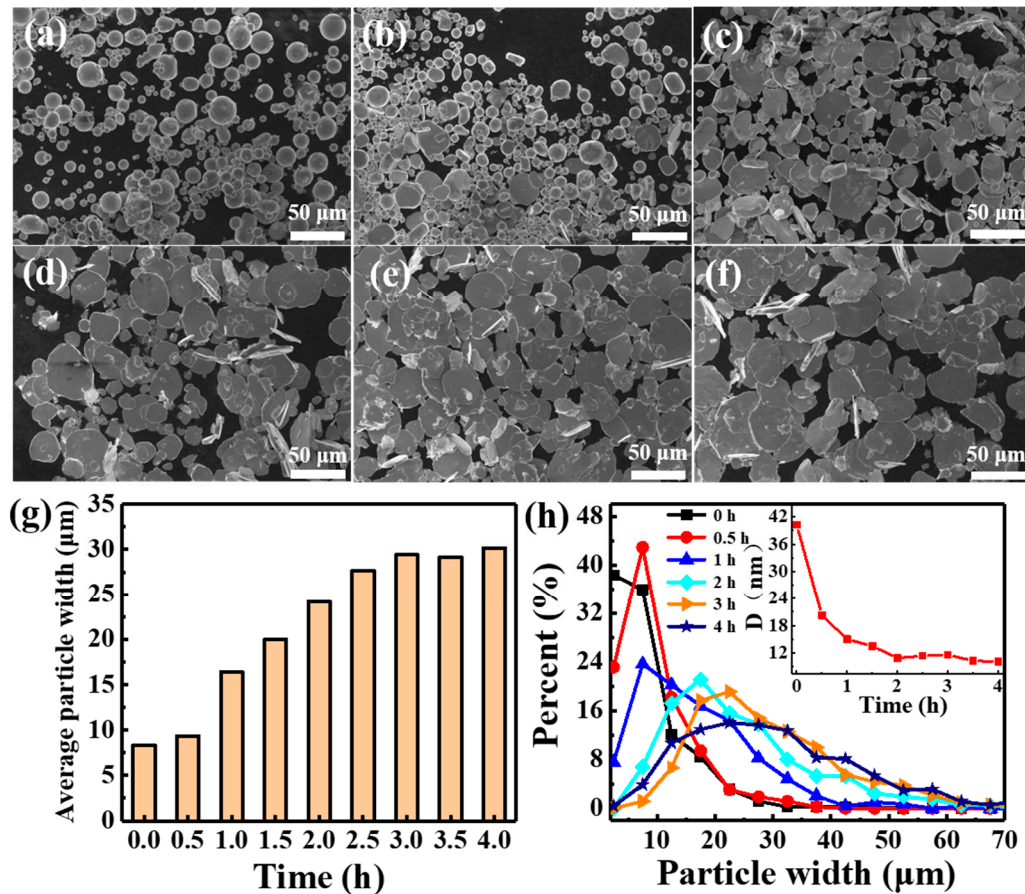


Figure S1. (a–f) SEM images of FeCoCr particles after ball milling for 0, 0.5, 1, 2, 3 and 4 h, respectively; (g) Change of particle width at different milling time; (h) Change of particle width distribution at different milling time. Inset in (h) is the change of grain size at different milling time.

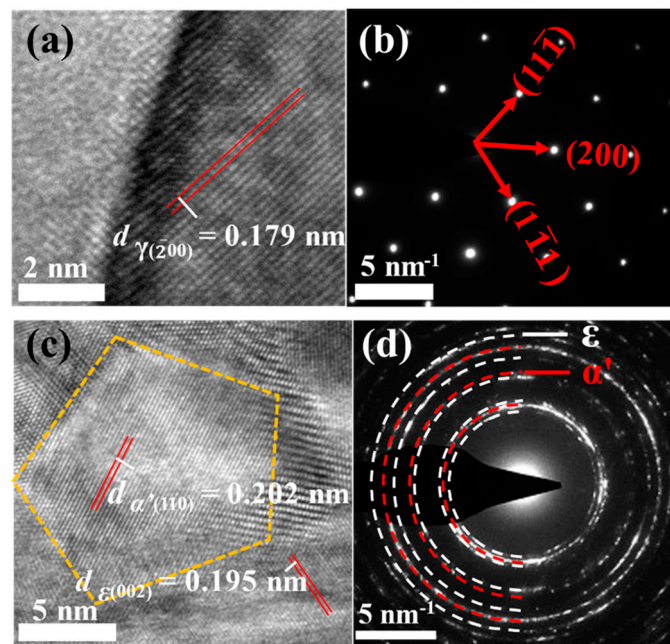


Figure S2. (a) High-resolution TEM image and (b) SEAD pattern of raw FeCoCr powder; (c) High-resolution TEM image and (d) SAED pattern of FeCoCr powder milled for 4 h.

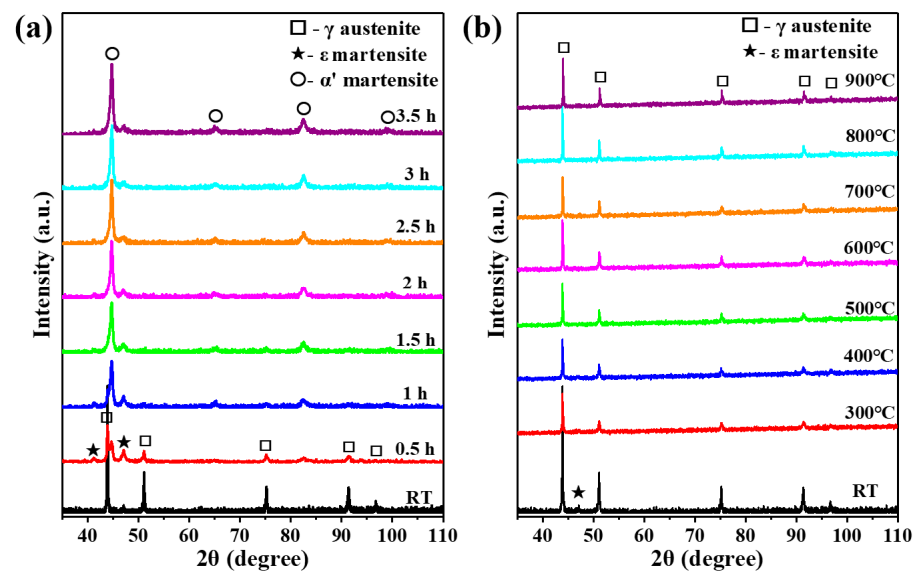


Figure S3. XRD spectra of FeCoCr powders (a) after ball milling for different time and (b) after heat treatment at different time without deformation.

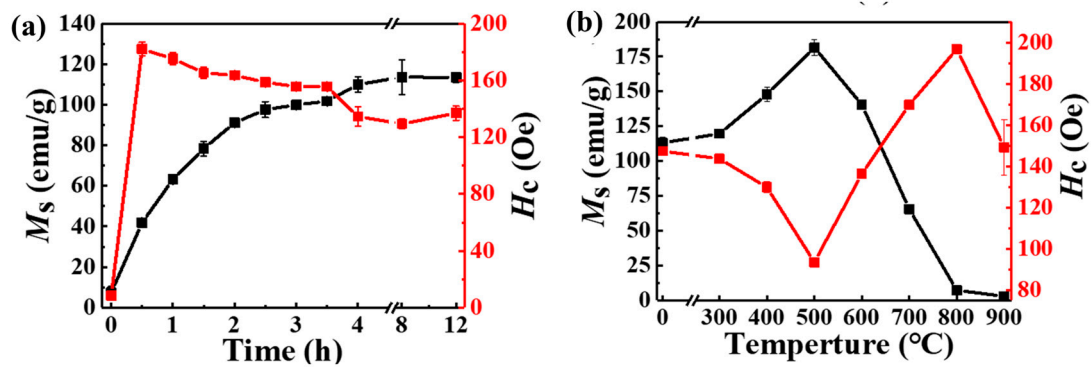


Figure S4. Evolution of saturation magnetization (M_s) and coercivity (H_c) during (a) ball milling and (b) subsequent heat treatment.

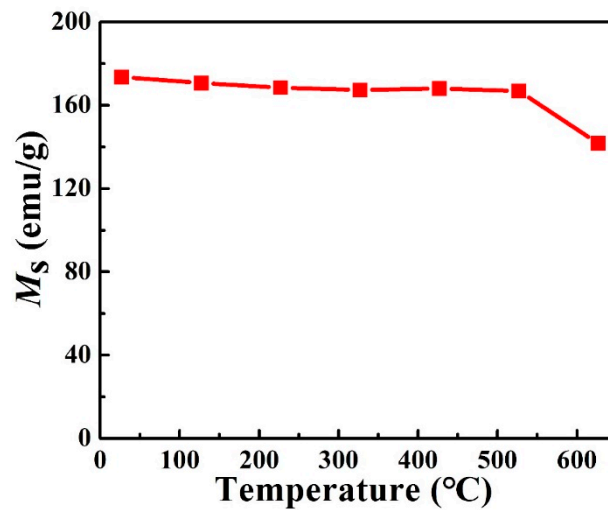


Figure S5. Change of M_s with the increase of temperature for FeCoCr powders after milling for 4 h and heat treatment at 500 $^{\circ}\text{C}$.

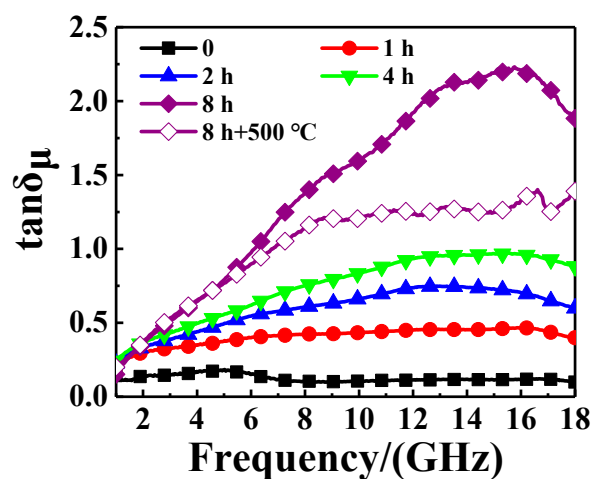


Figure S6. Change of magnetic loss tangents ($\tan\delta_\mu$) in FeCoCr powders at different milling time.