Electronic Supplementary Information (ESI)

Magnetization reversal of ferromagnetic nanosprings affected by helical shape

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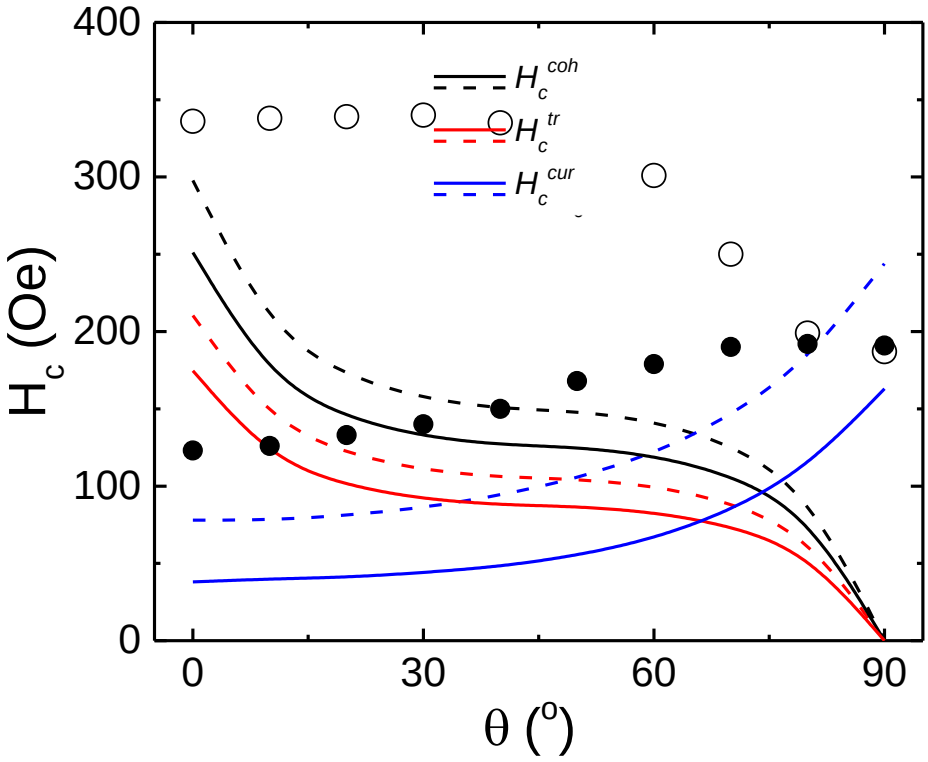

Fig. S1. Experimental (filled circles – Co NWs, open circles – CoFe NWs) and simulated (solid lines – Co NWs, dashed lines – CoFe NWs) angle dependences of H_c for nanowires.

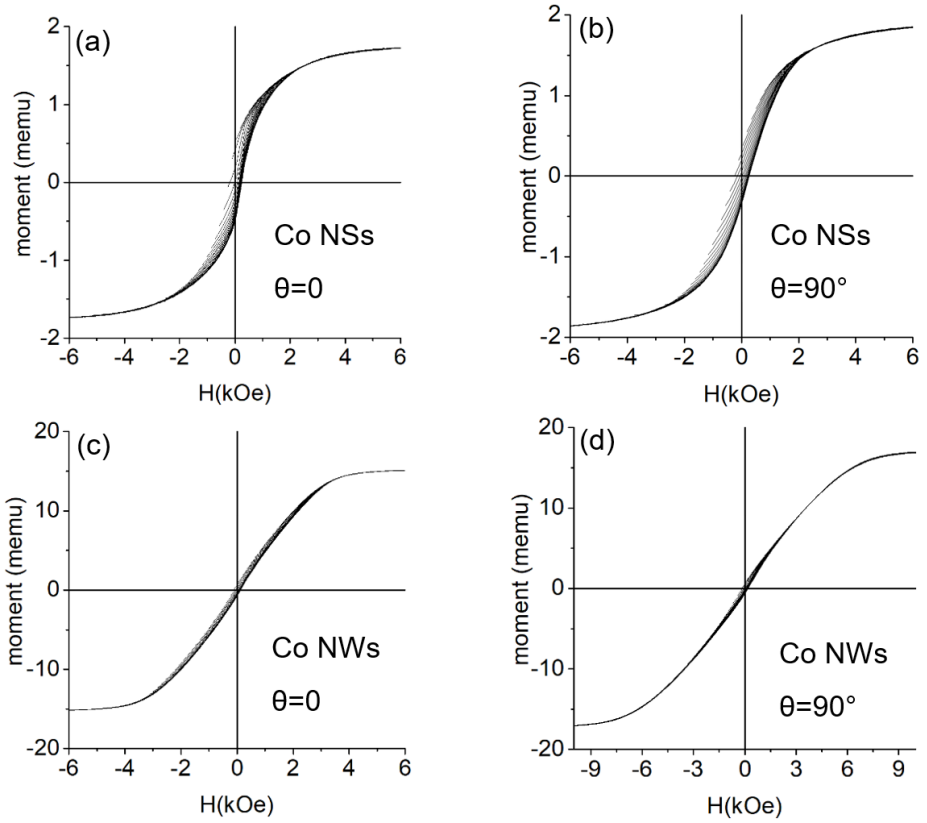

Fig. S2. Magnified FORCs shown in the insets of Fig. 5.

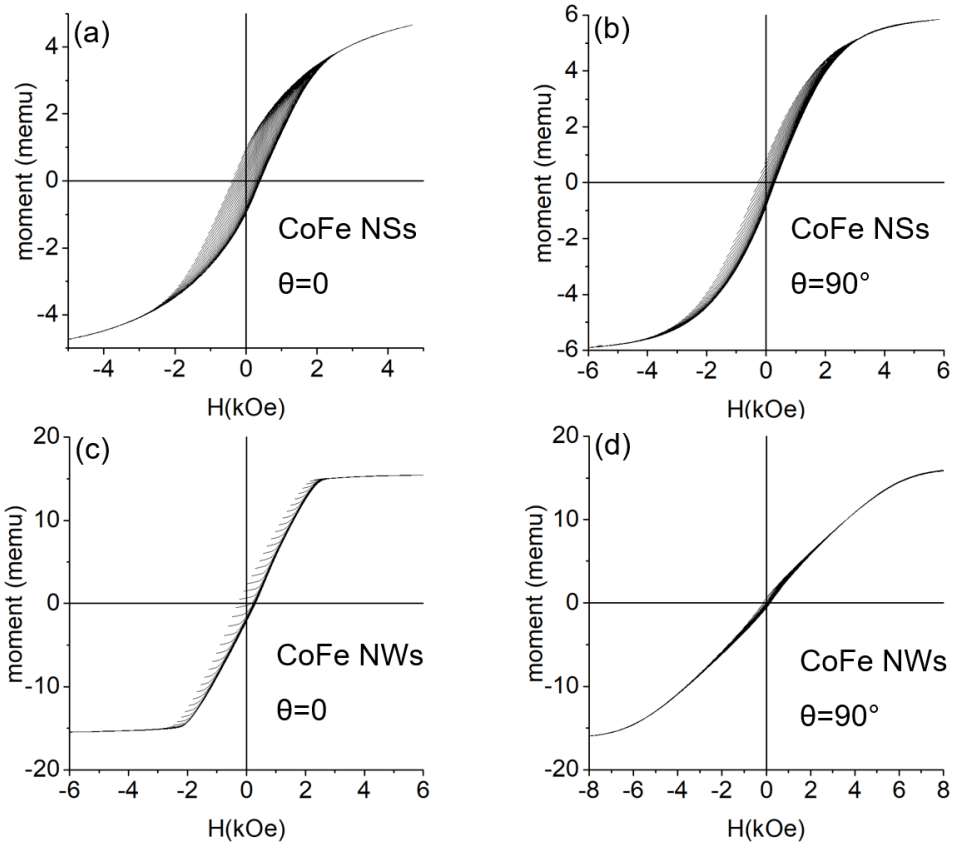

Fig. S3. Magnified FORCs shown in the insets of Fig. 6.

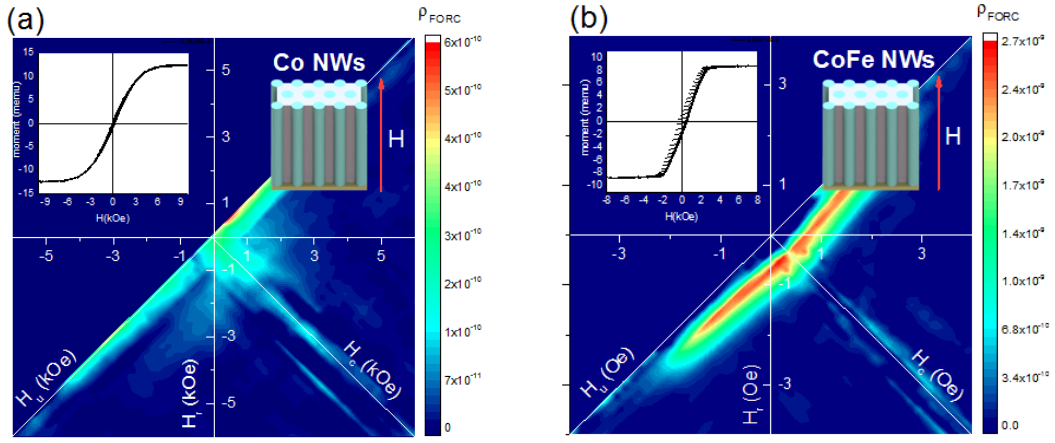

Fig. S4. LT FORC distributions of the Co (a) and CoFe NWs (b) arrays measured in longitudinal geometry.

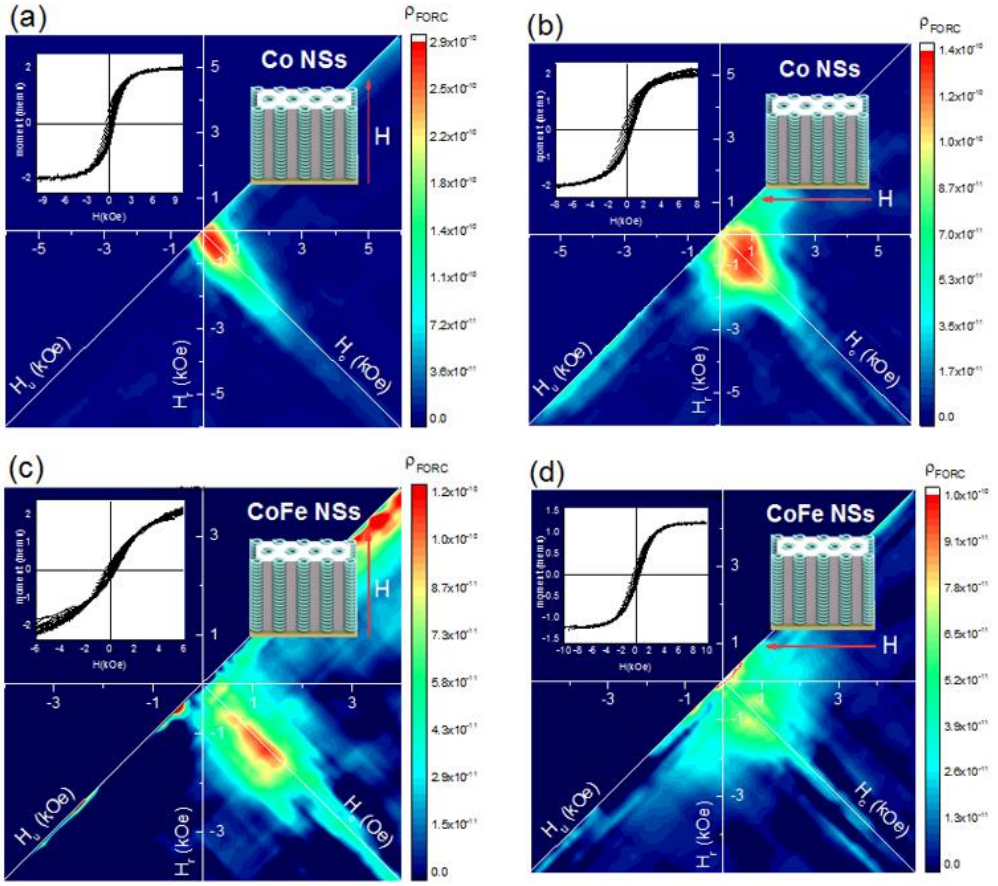

Fig. S5. LT FORC distributions of the Co (a,b) and CoFe NSs (c,d) arrays measured in longitudinal (a, c) and transverse (b, d) geometries, respectively.

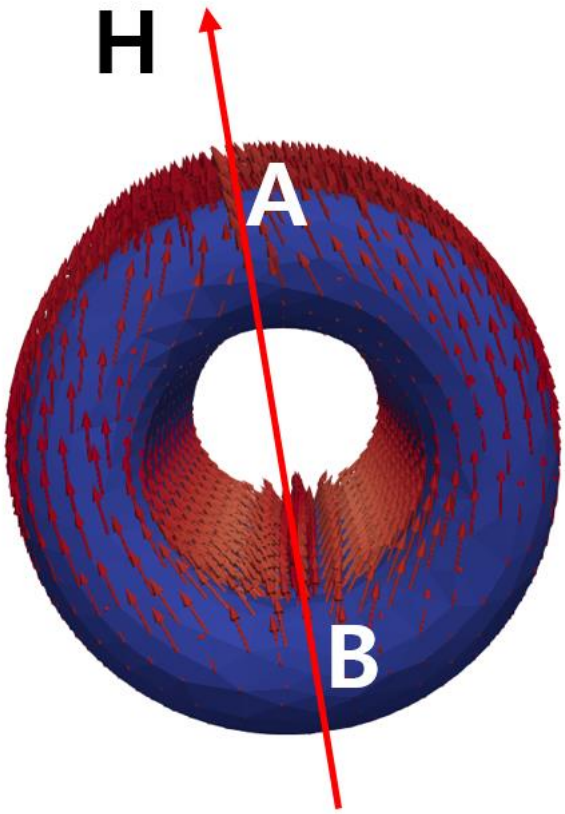

Fig. S6. The top view of the magnetically saturated nanoring representing a nanocoil in the transverse geometry. The red arrows indicate the orientation of the local magnetic moments which following the applied field direction. At points A and B the magnetic moments are completely perpendicular to the coil axis. These two points play role of nucleation sites, because the magnetization in them starts to curl in the decreasing field finally forming a vortex domain wall at the nucleation field. Depending on the polarity of the field, the “head-to-head” or “tail-to-tail” domains form around A or B points.