Supplementary Materials

Ferromagnetism of single atom above room temperature

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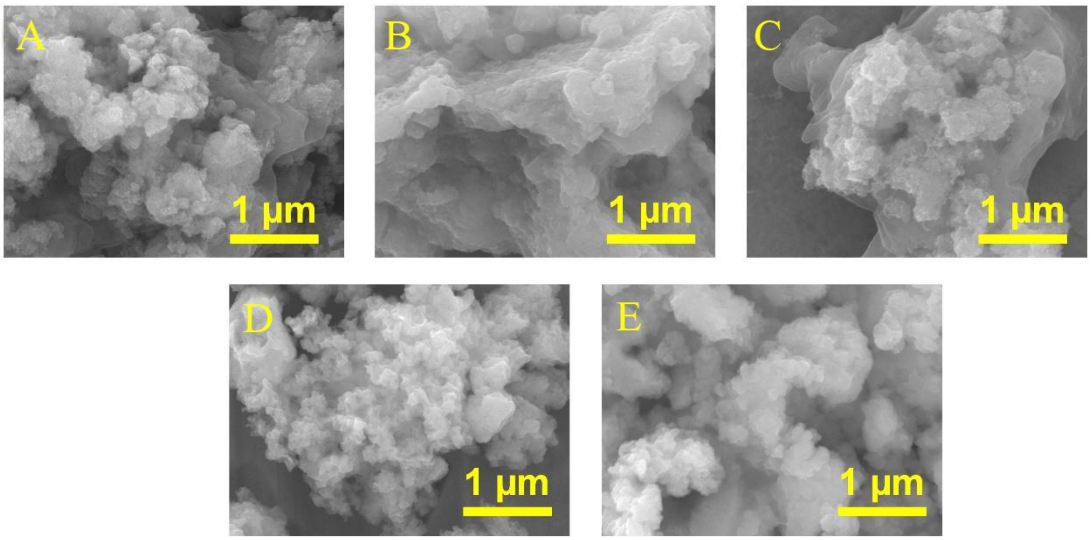
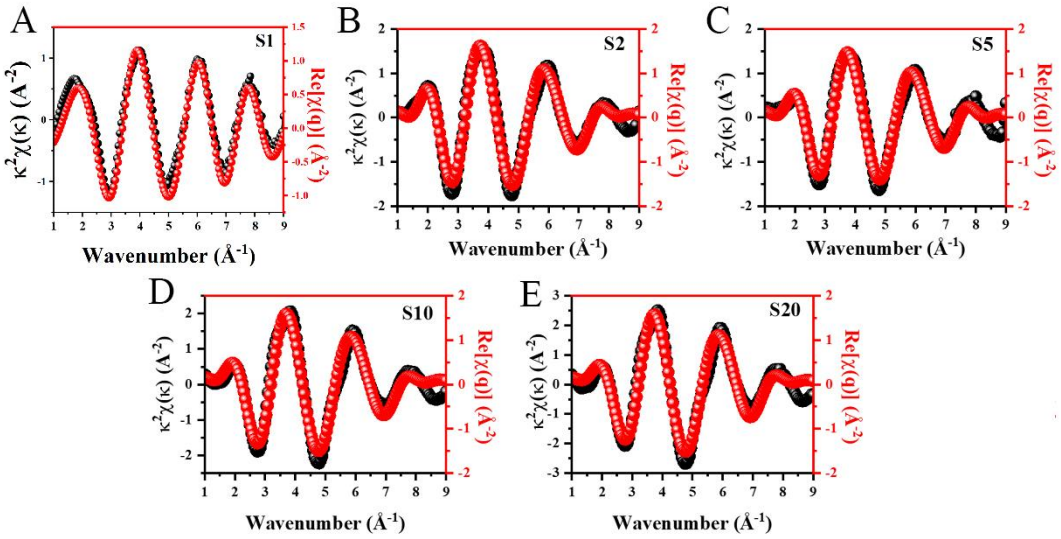
Supplementary Table 1. The atomic ratio and 1T phase proportion of the Ni-SAIs samples identified by XPS

Sample	Mo	S	Ni	Composition	1T/(1T + 2H)
S0	33.4 at%	66.6 at%	0	$MoS_{1.99}$	80.5%
S1	35.9 at%	64.1 at%	0	$MoS_{1.79}$	76.5%
S2	32.4 at%	62.7 at%	4.7 at%	$Ni_{0.15}MoS_{1.93}$	73.7%
S5	28.4 at%	61.1 at%	10.7 at%	$Ni_{0.05}MoS_{2.15}$	74.5%
S10	24.1 at%	59.6 at%	16.2 at%	$Ni_{0.67}MoS_{2.47}$	76.4%
S20	20 at%	56.8 at%	23.2 at%	$Ni_{1.16}MoS_{2.84}$	67.0%

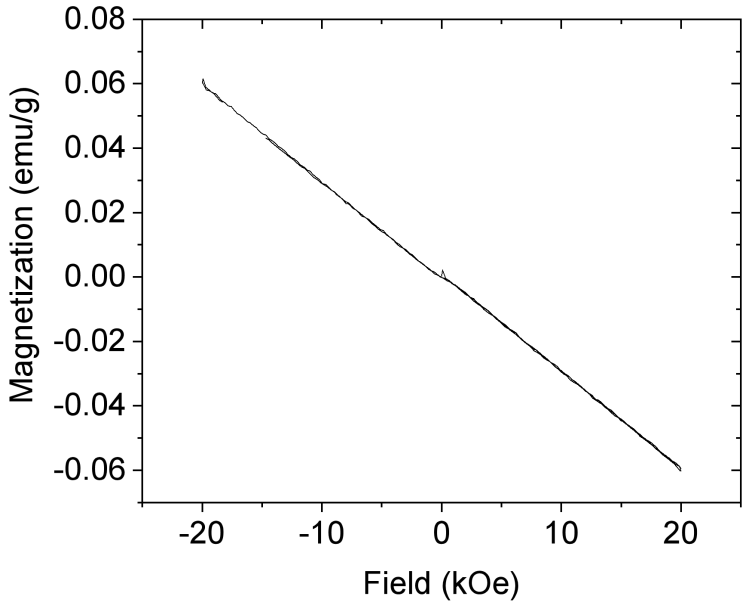
XPS: X-ray photoelectron spectroscopy.



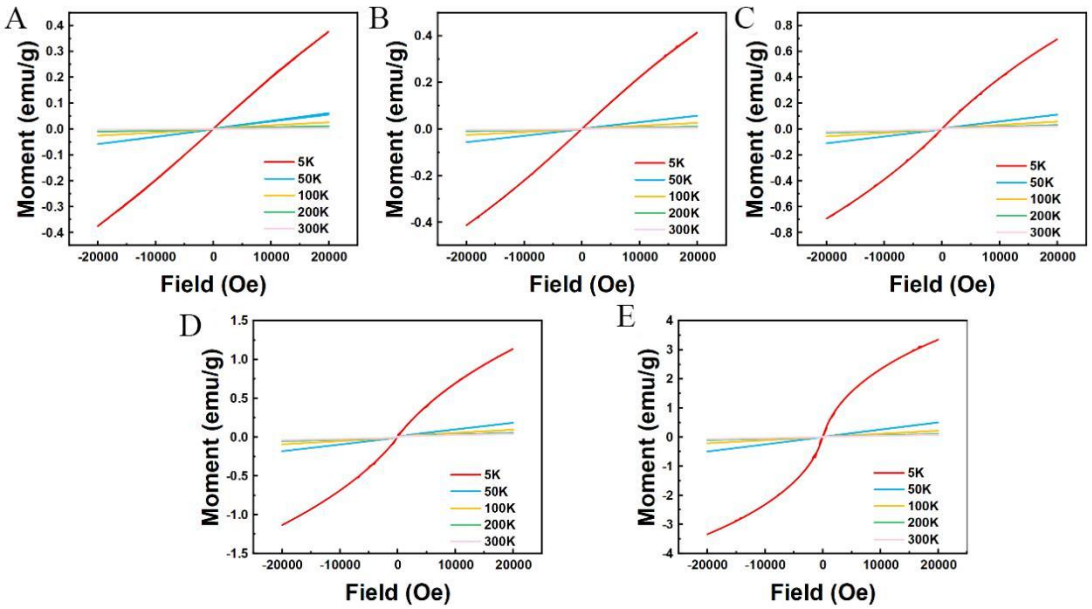
Supplementary Figure 1. SEM images of Ni-SAIs samples. (A) S1; (B) S2; (C) S5; (D) S10; (E) S20. SEM: Scanning electron microscope.



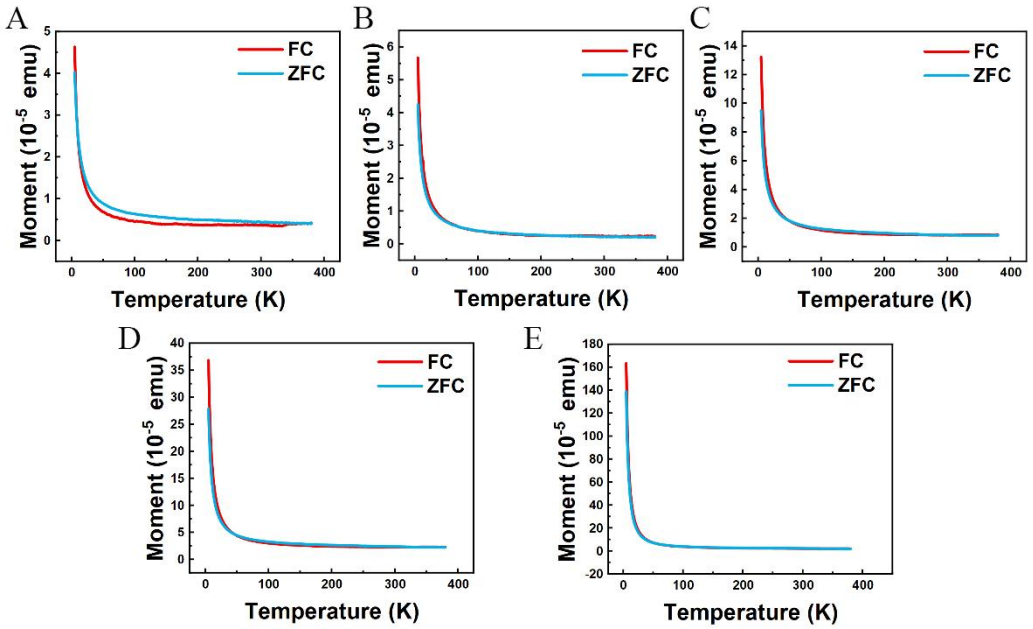
Supplementary Figure 2. The reliable FT is proved by good *k-q* matching. FT: Fourier-transform.



Supplementary Figure 3. M-H loop of pure MoS_2 nanosheets taken at room temperature.



Supplementary Figure 4. Hysteresis loops of Ni-MoS_2 samples at different temperatures. (A) S1; (B) S2; (C) S5; (D) S10; (E) S20.



Supplementary Figure 5. ZFC and FC curves of S1 (A), S2 (B), S5 (C), S10 (D) and S20 (E). ZFC: Zero field cooling; FC: field cooling.