

## Supplementary Information

### Self-assembling Epitaxial Growth of Single Crystalline $\text{CoFe}_2\text{O}_4$ Nanopillar Array via Dual-Target Pulsed Laser Deposition

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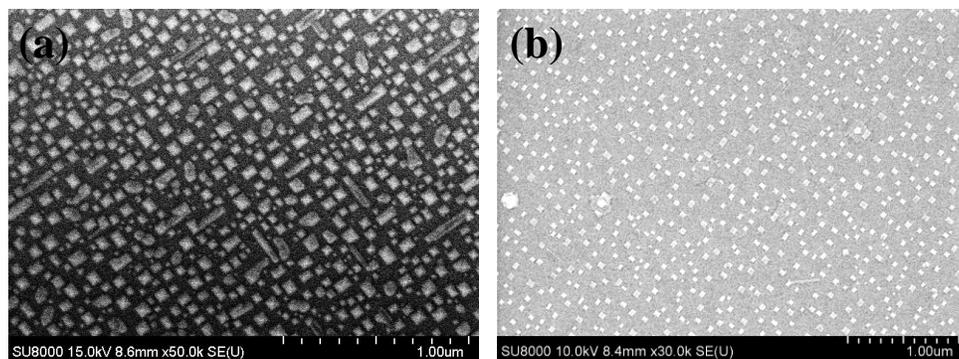
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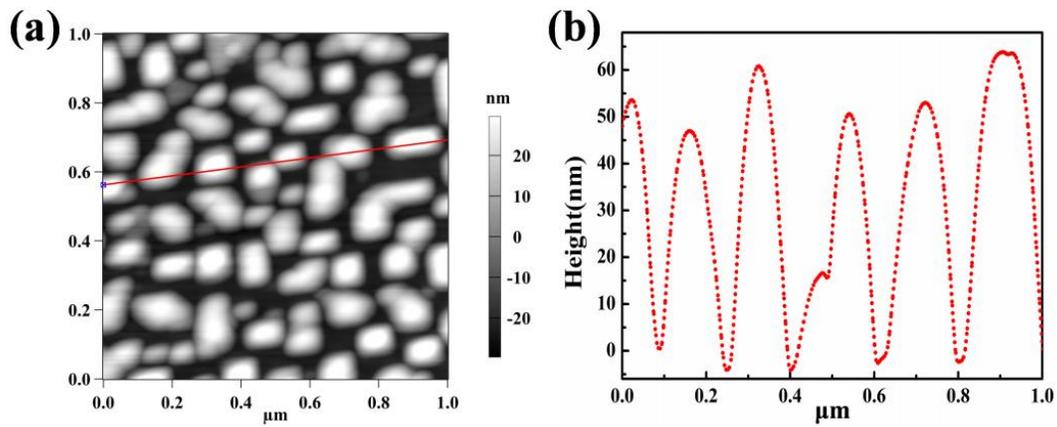
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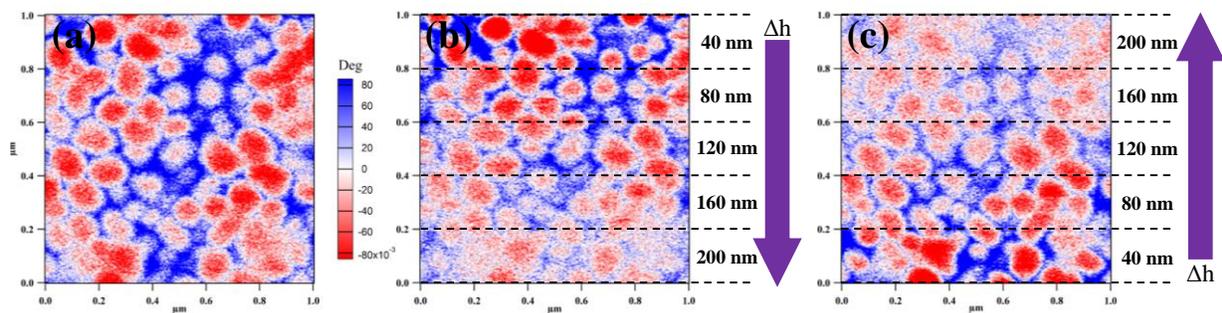
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**Fig. S1** (a,b) Planar SEM images of CFO nanopillars on (a) STO and (b) SRO-buffered STO substrate.



**Fig. S2** (a) Surface topography of CFO nanopillars; (b) sectional analysis along the line drawn in (a).



**Fig. S3** (a) Phase mapping of MFM over CFO nanopillars. MFM images when scan tip-sample surface distance (b) increase and (c) decrease.