Supporting Information

Synthesis, Redox Exfoliation, and Magnetic Nanoparticle Decoration of VSe_2 and $SnSe_2$ Nanosheets

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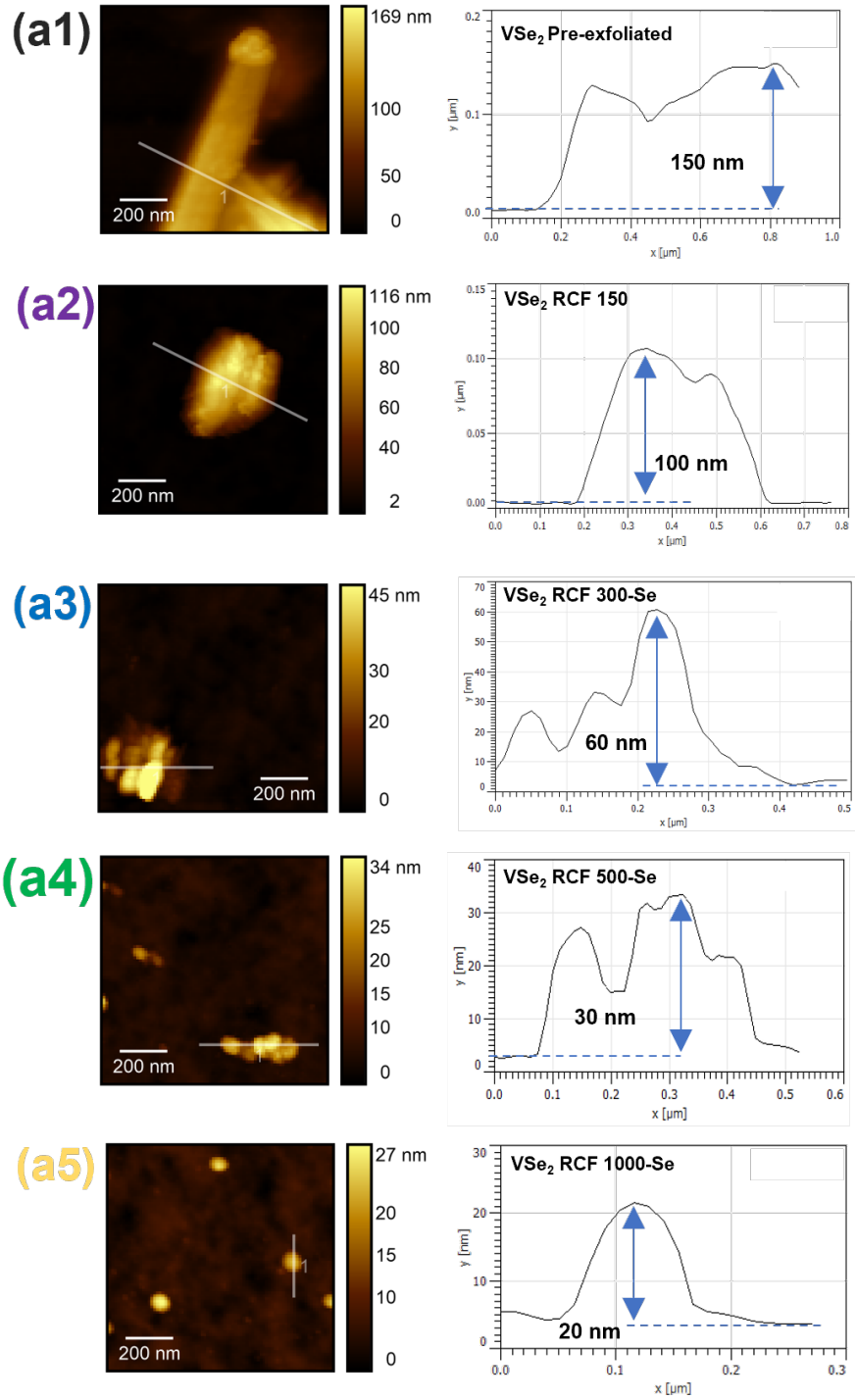

Figure S1. AFM images of VSe_2 (panel a1-a5) and corresponding height profiles.

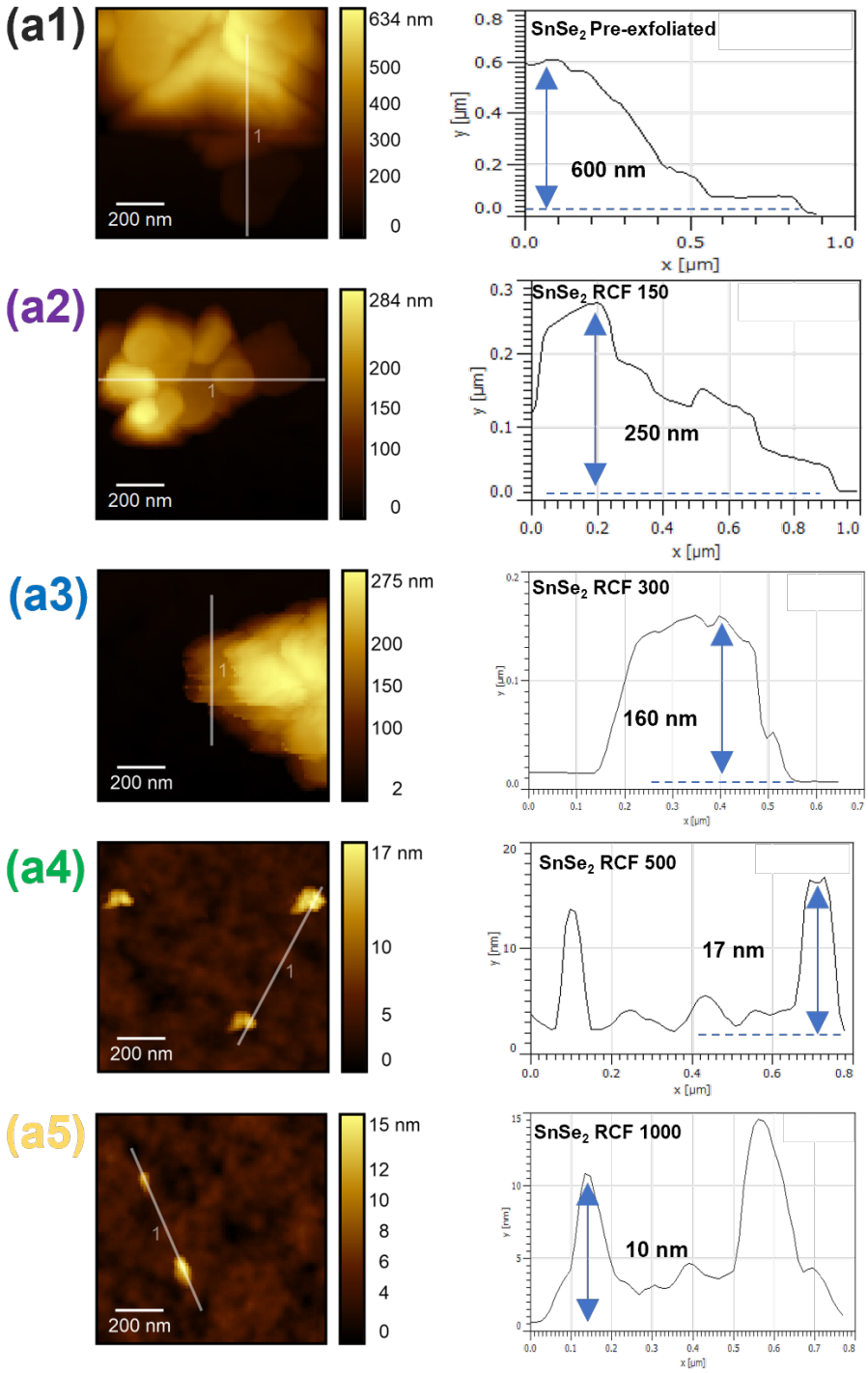

Figure S2. AFM images of $SnSe_2$ (panel a1-a5) and corresponding height profiles.

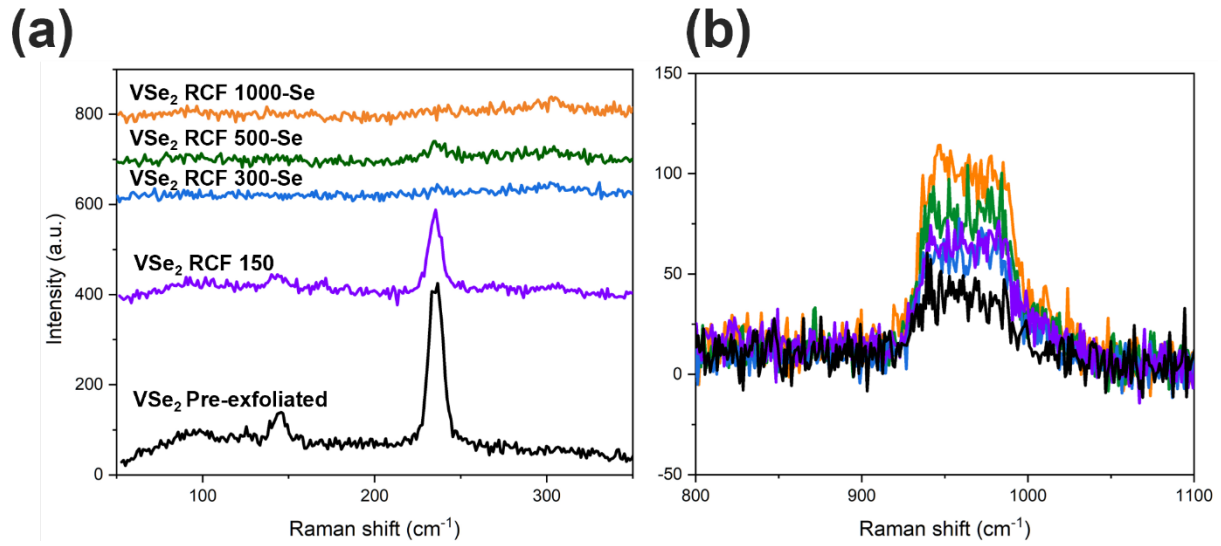

Figure S3. Zoomed-in Raman spectra of various RCF of VSe_2 showing the Raman shift between a) 0 cm^{-1} to 350 cm^{-1} and b) 800 cm^{-1} to 1100 cm^{-1}.

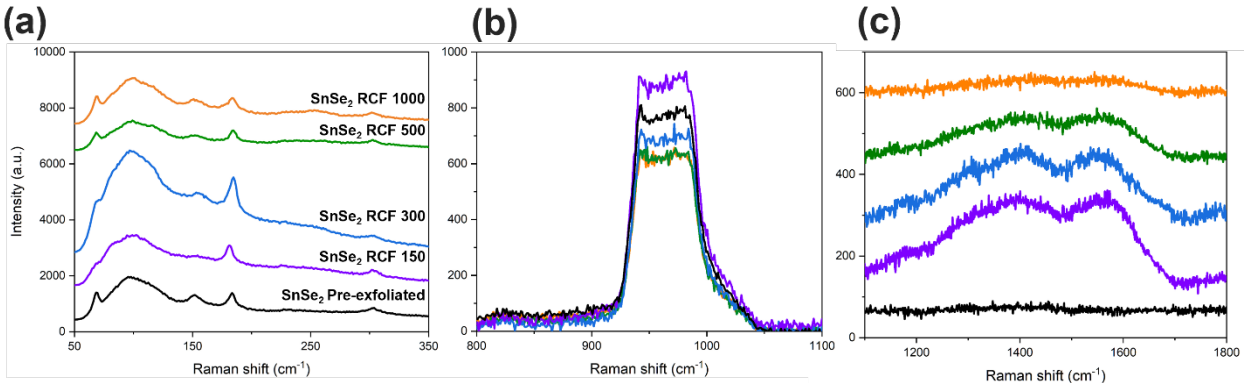

Figure S4. Zoomed-in Raman spectra of various RCF of $SnSe_2$ showing the Raman shift between a) 0 cm^{-1} to 350 cm^{-1}, b) 800 cm^{-1} to 1100 cm^{-1} and c) 1100 cm^{-1} to 1800 cm^{-1}.

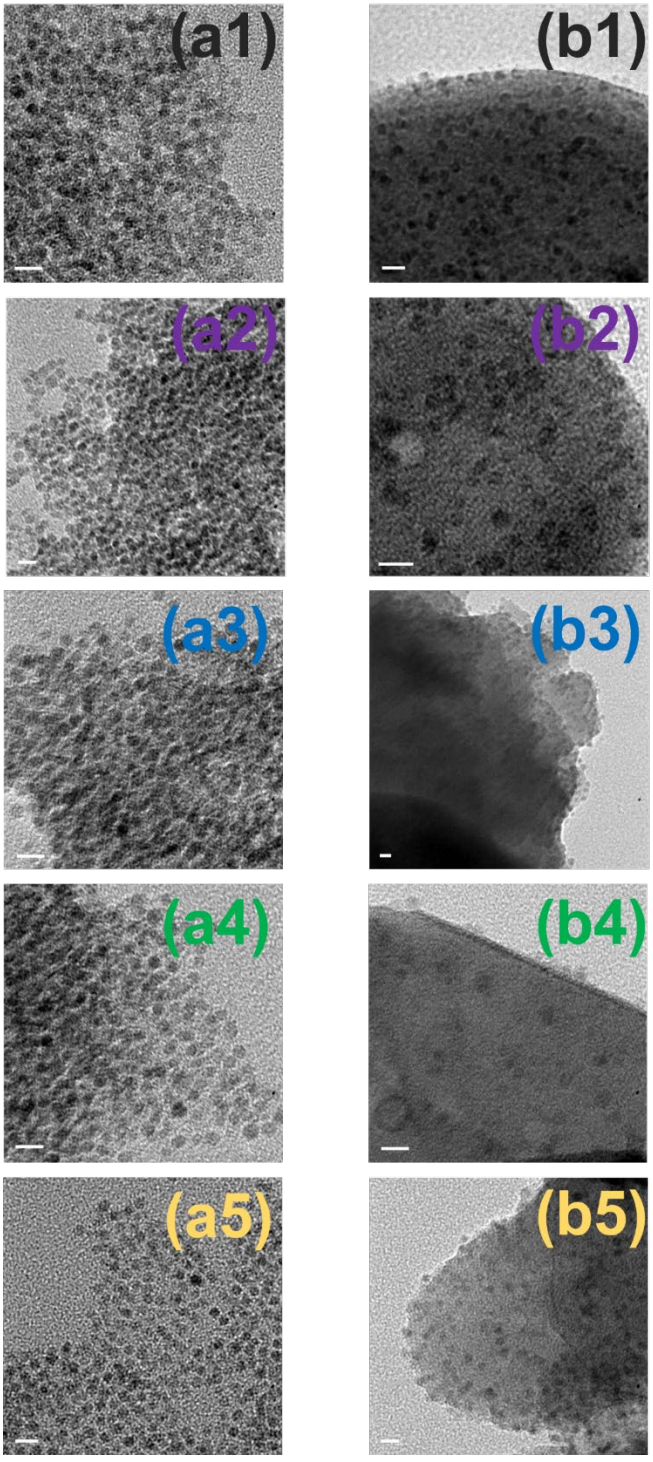

Figure S5. HRTEM images of Fe_xO_y decorated on layer surfaces with different RCF of a1)-a5) VSe_2 and b1)-b5) $SnSe_2$. The scale bar is 10 nm.

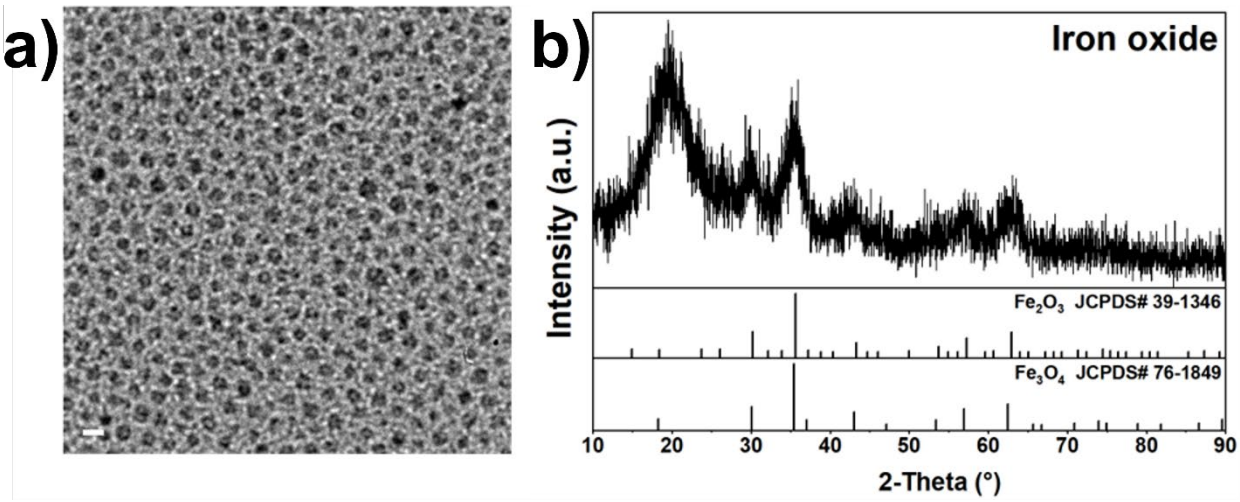

Figure S6. (a) TEM image and (b) XRD pattern for iron oxide. The scale bar is 5 nm.

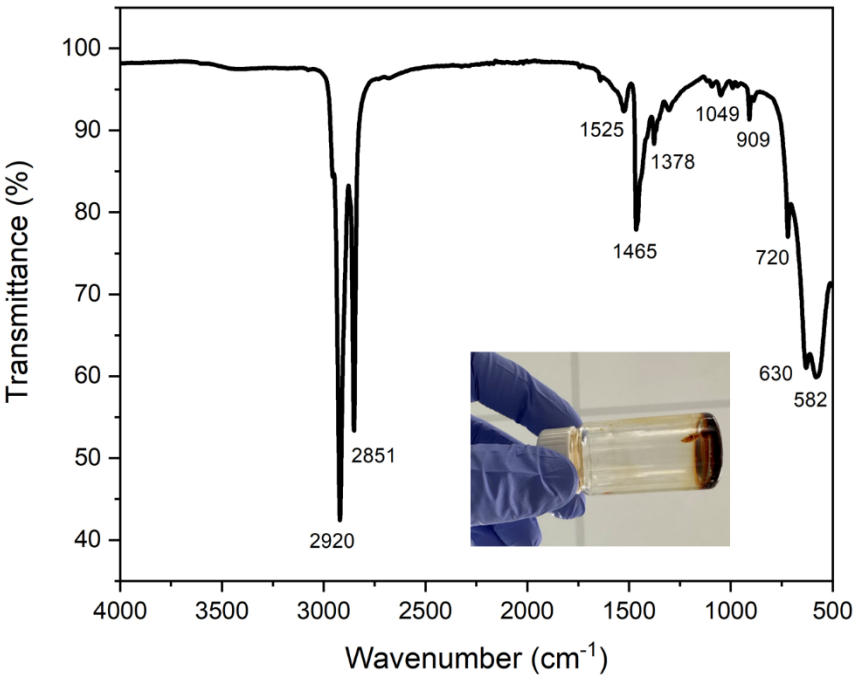

Figure S7. FTIR spectrum from myristic acid-coated iron oxide dots. Inset photo shows the physical state of the sample.

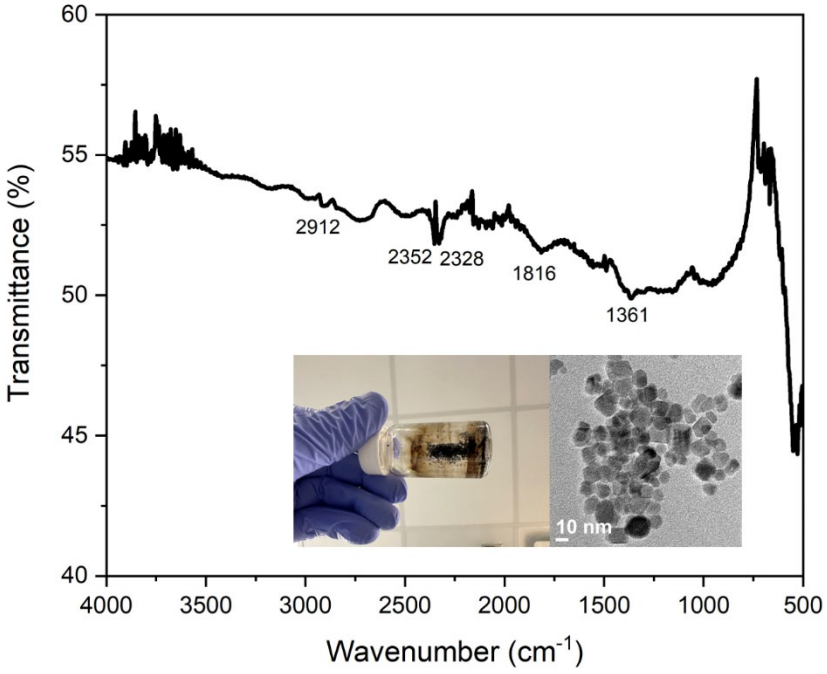

Figure S8. FTIR spectrum from an iron oxide sample synthesized without myristic acid. Inset photo shows the physical state of the sample and a TEM image showing the size of the iron oxide in this case.

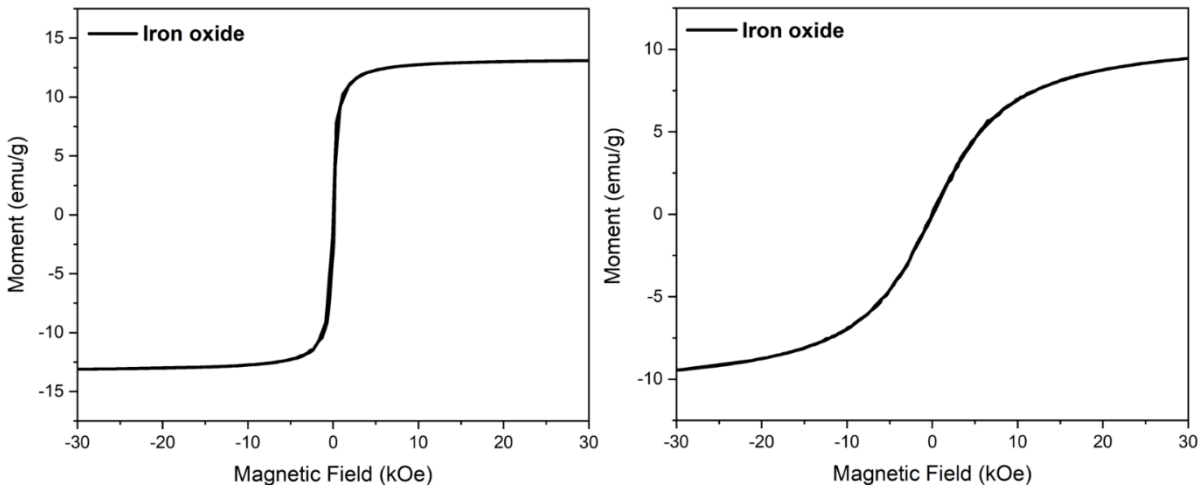

Figure S9. Magnetic hysteresis for iron oxide dots measured at 8 K(left) and 300 K(right).

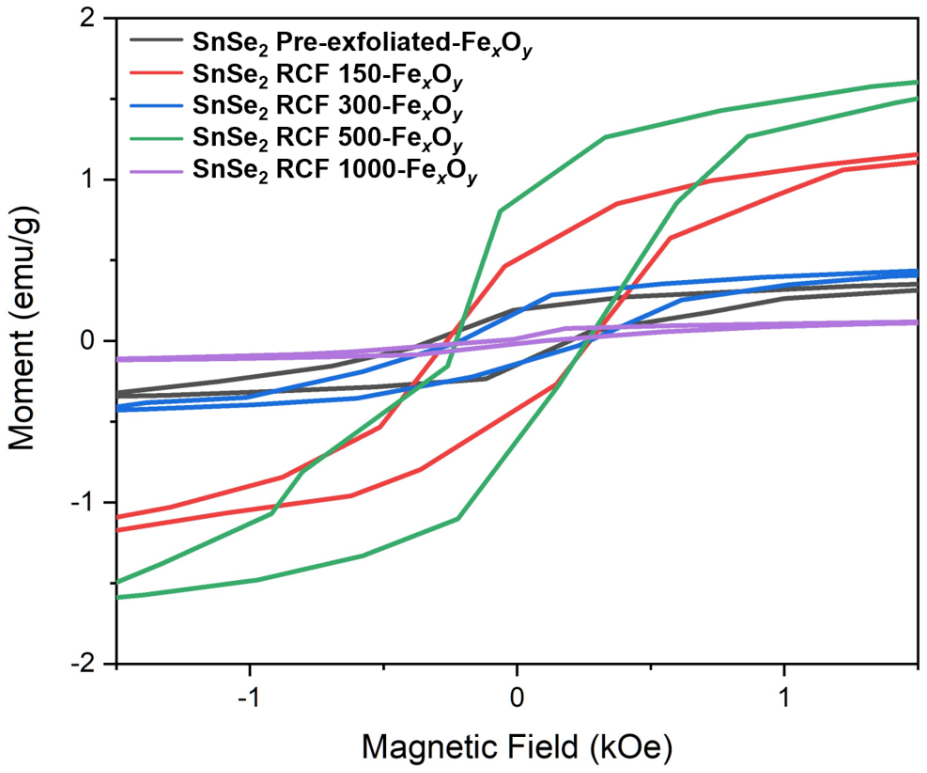

Figure S10. Zoomed-in magnetization curve of various RCF of $SnSe_2$ decorated with Fe_xO_y for coercivity observation.

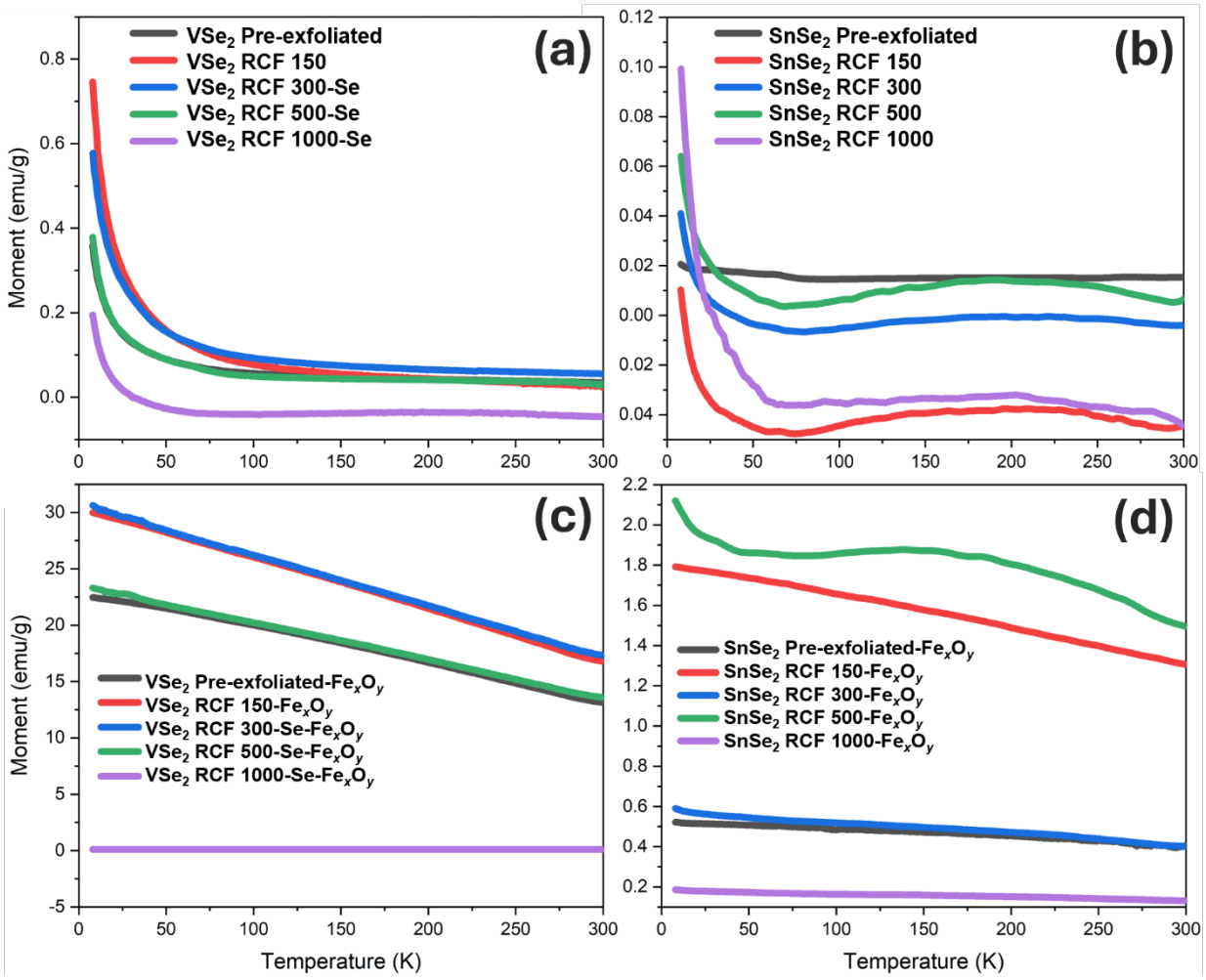

Fig S11. Temperature-dependent magnetization (MT) curves measured under a magnetic field of 10 kOe for (a) VSe_2, (b) $SnSe_2$, (c) VSe_2 decorated with Fe_xO_y and (d) $SnSe_2$ decorated with Fe_xO_y.

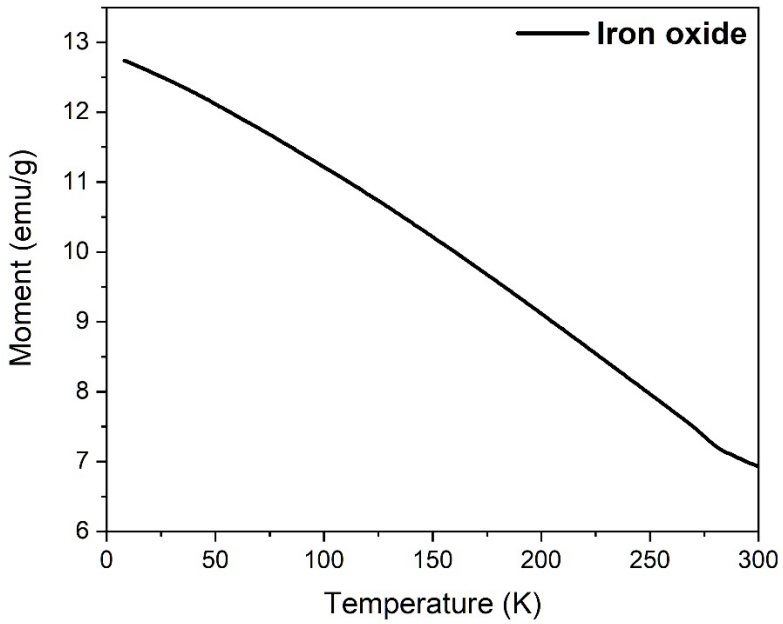

Fig S12. Temperature-dependent magnetization (MT) curve measured under a magnetic field of 10 kOe for iron oxide dots.

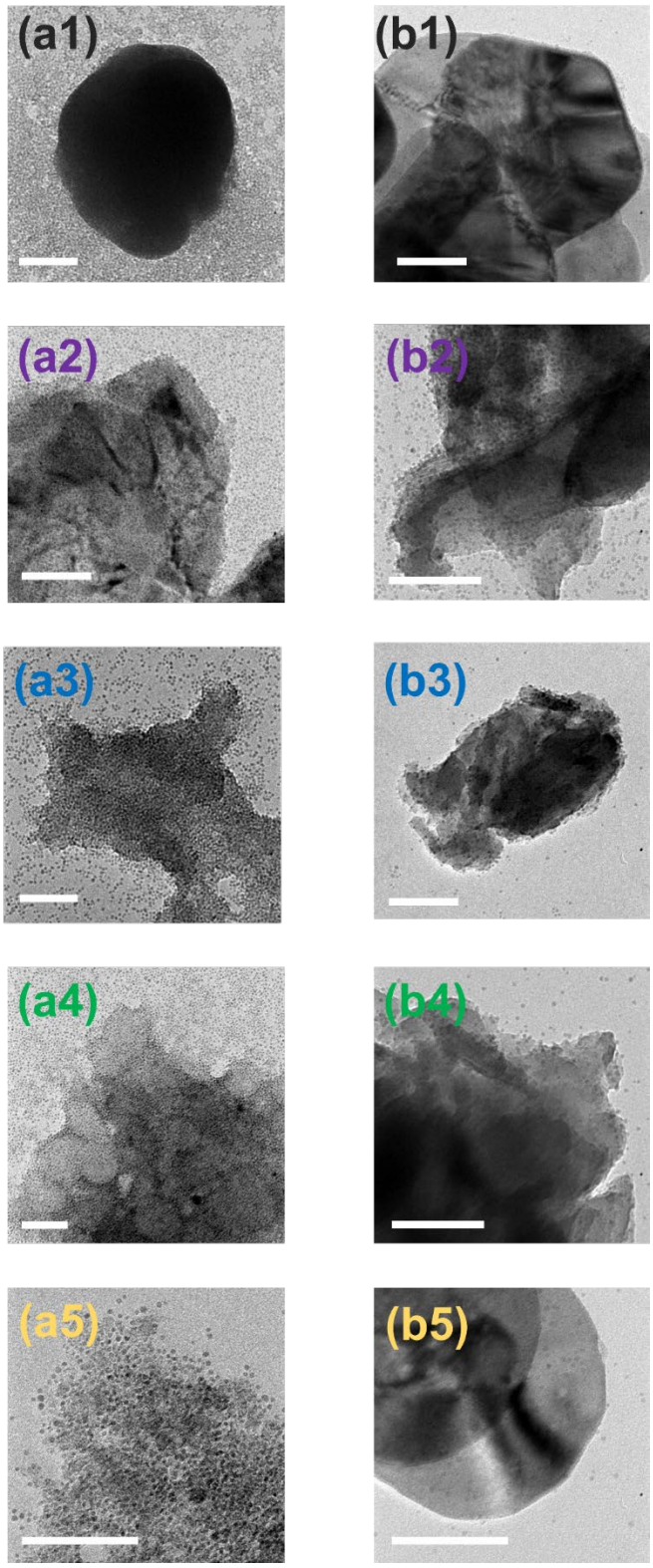

Figure S13. Panel a1-a5 and panel b1-b5 are representative TEM images for different levels of exfoliation of VSe_2 and $SnSe_2$ decorated with iron oxide without washing to remove excess iron oxide. The scale bar is 100 nm.