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## Supplementary Materials for

### **Creation of skyrmions in van der Waals ferromagnet $\text{Fe}_3\text{GeTe}_2$ on $(\text{Co}/\text{Pd})_n$ superlattice**

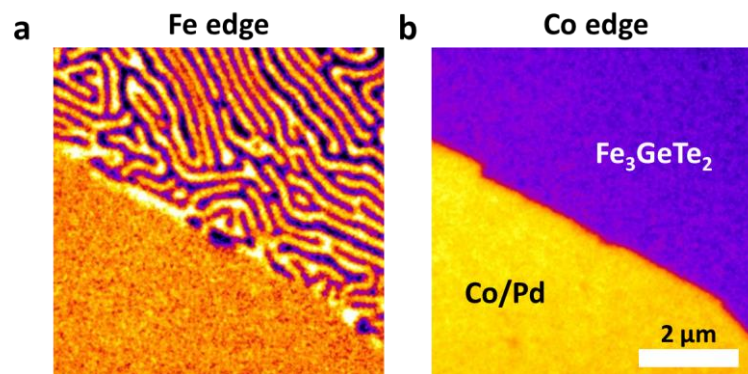
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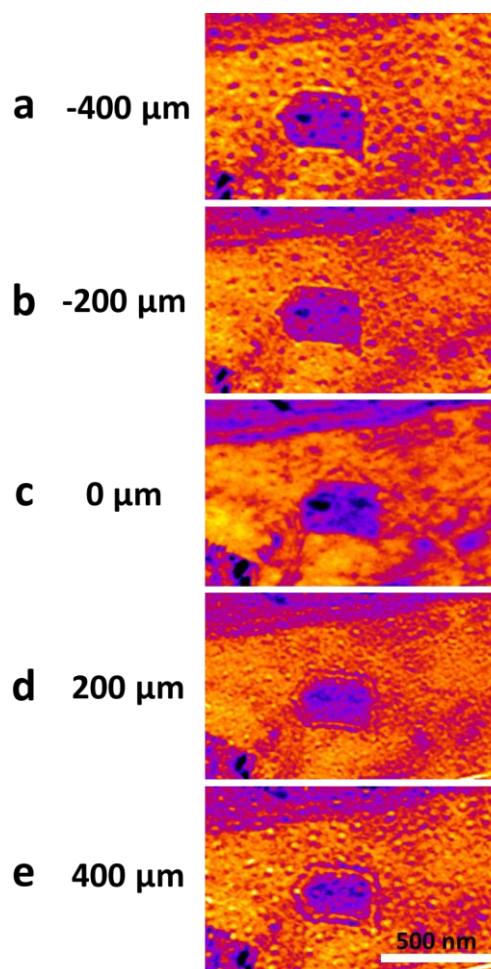
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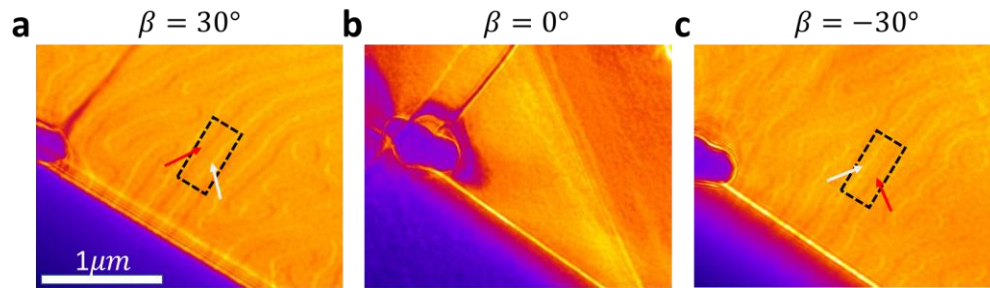
Figs. S1 to S3



**Fig. S1. Element-resolved domain images of  $\text{Fe}_3\text{GeTe}_2/\text{Pd}(8\text{ nm})/[\text{Co}/\text{Pd}]_{10}$  after magnetizing.** Photoemission electron microscopy (PEEM) images obtained with x-ray photon energy at a, Fe  $L_3$  edge (706.3 eV) and b, Co  $L_3$  edge (778.0 eV).  $\text{Fe}_3\text{GeTe}_2$  (upper right) showed stripe domains and the Co/Pd multilayer (lower left) showed single domain at 110 K after magnetizing.



**Fig. S2. Lorentz Transmission electron microscopy (LTEM) images from under focus to over focus.** Selected LTEM images at sample tilting angle of  $30^\circ$  with defocus values at a,  $-400 \mu\text{m}$ , b,  $-200 \mu\text{m}$ , c,  $0 \mu\text{m}$ , d,  $200 \mu\text{m}$ , and e,  $400 \mu\text{m}$ . Dark/bright contrasts only showed up at defocused modes. Under-focus and over-focus LTEM images showed reversed contrast.



**Fig. S3. Lorentz Transmission electron microscopy (LTEM) images of Néel-type domain wall in the Fe<sub>3</sub>GeTe<sub>2</sub> flake.** Selected LTEM images of stripe domains at sample tilting angle of a) 30°, b) 0° and c) -30° with defocus values at -800  $\mu m$ . The zero contrast at 0° tilting angle and the reversed contrasts at opposite tilting angles indicate the Néel-type domain wall of magnetic stripes in Fe<sub>3</sub>GeTe<sub>2</sub>. As a guide to the eye, the dashed lines in a) and c) mark the same area, where reversed contrast shows up as pointed by the red and white arrows.