

Supplementary Information for

Real-space study of monolayer hBN encapsulated bilayer MoTe₂ devices

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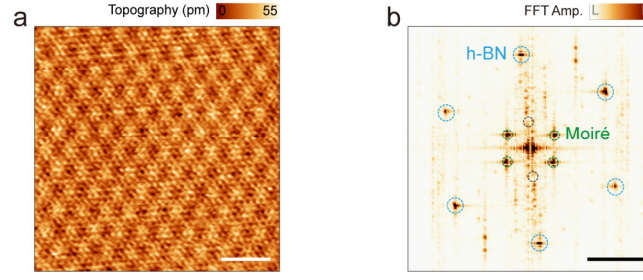


Fig. S1. STM image of bilayer MoTe₂ device. **a**, Zoomed-in STM images ($V_{\text{bias}} = 2.5$ V and $I = 100$ pA). **b**, Corresponding Fast Fourier Transform images in **a**. Scale bar: 2 nm and 2.5 nm^{-1} .

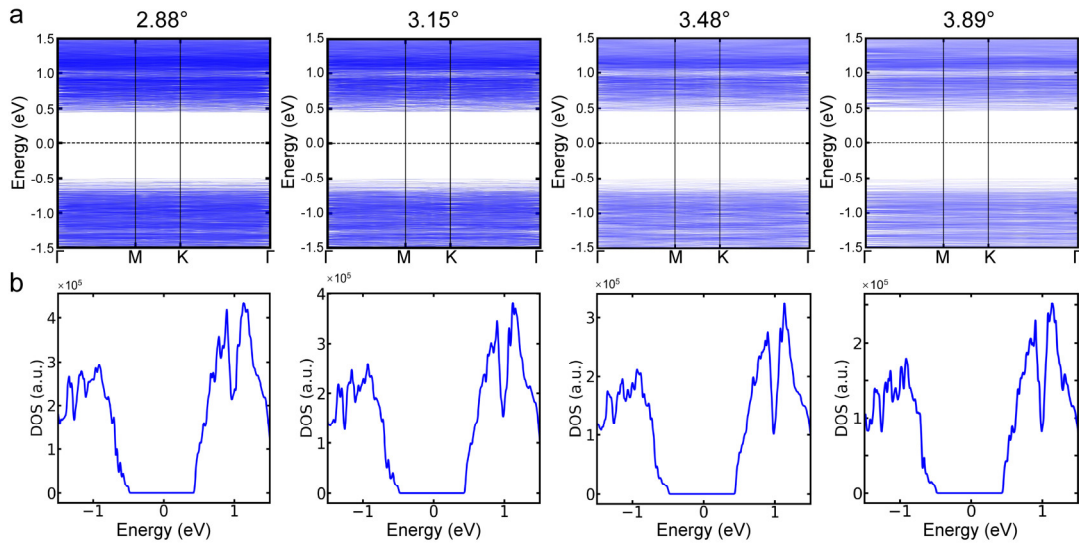


Fig. S2. DFT calculated band structures and DOS spectra of tMoTe₂. **a**, DFT calculated band structures of tMoTe₂ with varied twist angles using plane-wave basis. **b**, Corresponding DOS spectra.

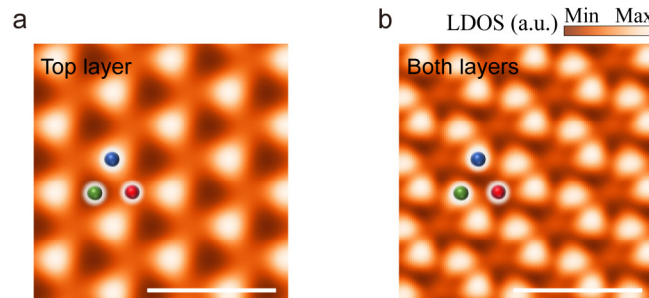


Fig. S3. DFT calculated DOS mapping of tMoTe₂. **a,b**, DFT-calculated valance top band DOS maps of the top layer (**a**) and both layers (**b**) of 2.65° tMoTe₂. Scale bars: 10 nm.