

Supplementary Information

Magnetism arising from Mexican-hat like band dispersion in the WSe₂/SnS₂ heterostructure via interlayer strain

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Table S1. The lattice parameters and thickness ($Se_{up}-Se_{dw}$) of the WSe_2 layer under different interlayer strains.

ε	0%	5%	10%	15%	20%
$Se_{up}-Se_{dw}$ (Å)	3.39	3.38	3.36	3.32	3.30
Lattice parameter (Å)	6.567	6.580	6.607	6.652	6.718

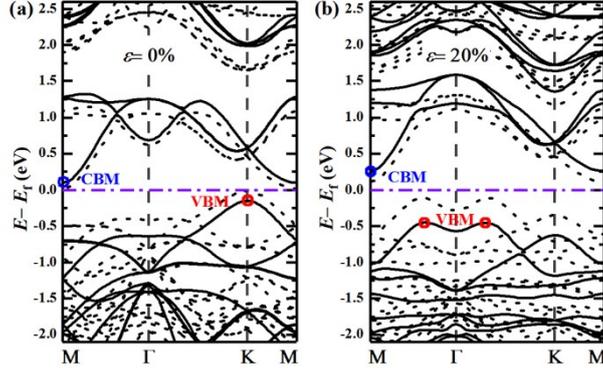


Fig. S1. Band structures of WSe_2/SnS_2 heterostructure calculated by PBE and HSE06 functionals, under different interlayer strains (a) $\varepsilon=0\%$ and (b) $\varepsilon=20\%$, respectively. The dotted lines show the mapping bands of PBE, while the solid lines show the mapping bands of HSE06. All the Fermi levels are set to zero.

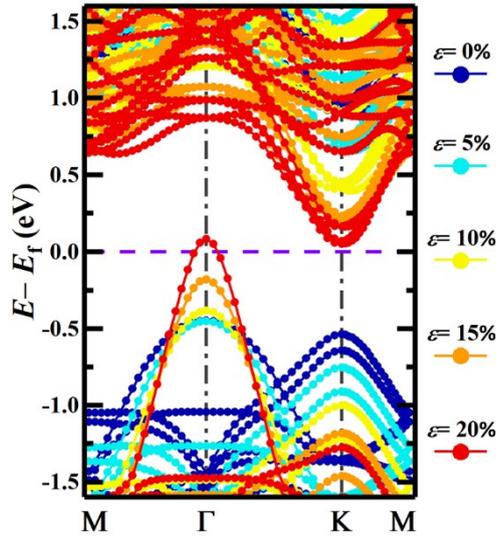


Fig. S2. Band structures of bilayer WSe_2 under different interlayer strains, with the Fermi level being set to zero.