## **Supplementary Information**

Two-dimensional Weyl Semi-half-metallic  $NiCS_3$  with band structure controllable by direction of magnetization

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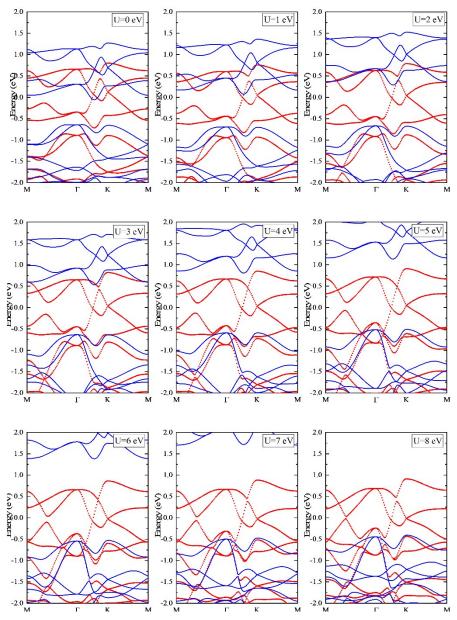


Figure S1. The band structures of NiCS<sub>3</sub> calculated at PBE+U level, with different value of U.

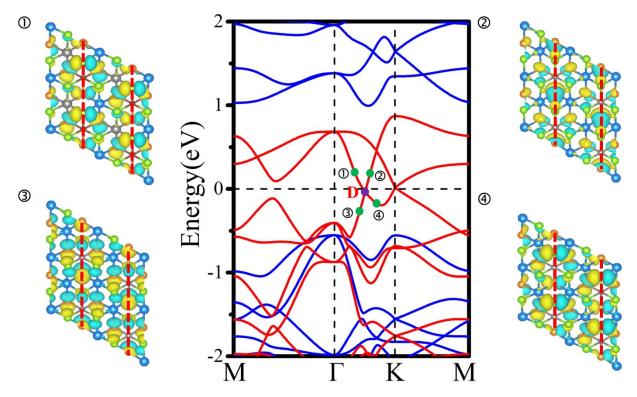


Figure S2. The real space Kohn-Sham wave function in the spin-up channel near the crossing point D.

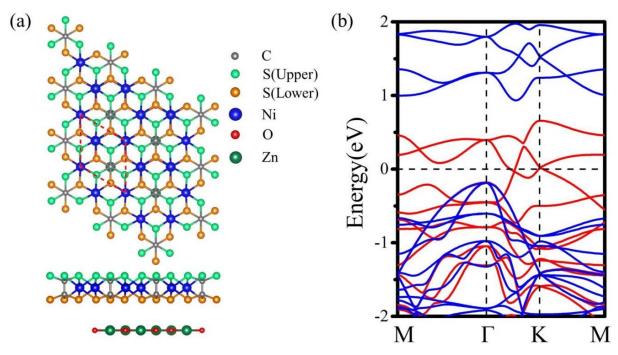


Figure S3. (a) The configuration and (b) band structure of NiCS<sub>3</sub> on top of 2D ZnO film.