

Hidden spin polarization in antiferromagnets with inversion-symmetric alternating magnetic sectors

San-Dong Guo^{*}

School of Electronic Engineering, Xi'an University of Posts and Telecommunications, Xi'an 710121, China

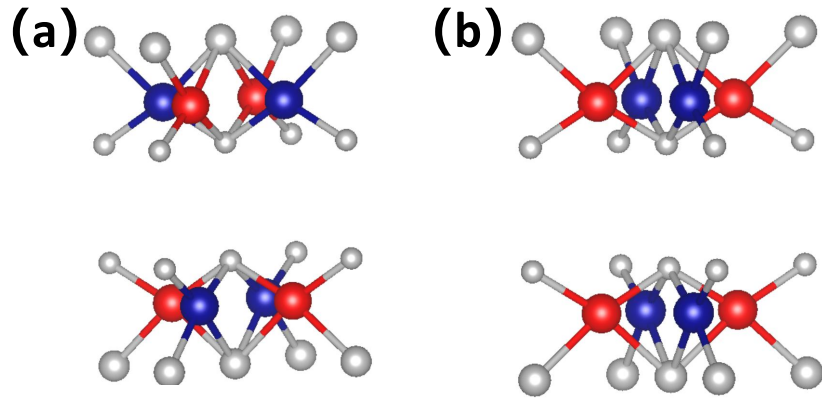


FIG. S1. (Color online) Two magnetic configurations with side view of crystal structure: AFM1 (a) and AFM2 (b) configurations. The blue (red) balls represent the spin-up (spin-down) Cr atoms, and the gray balls represent O and S atoms.

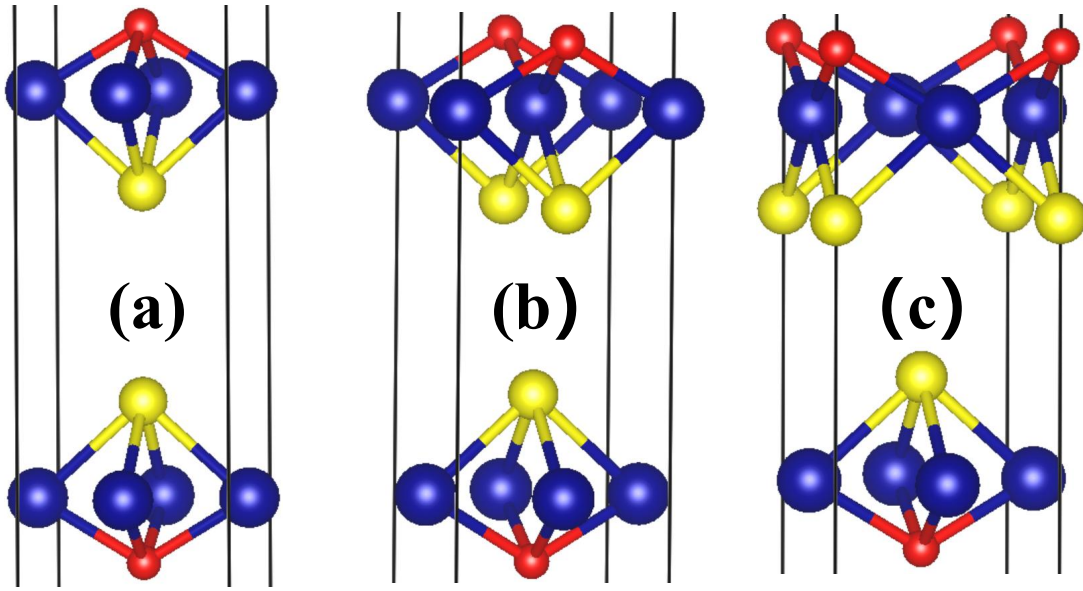


FIG. S2. (Color online) For O-terminal bilayer Cr₂SO, the A1 (a), A2 (b) and A3 (c) stackings. In (a, b, c), the blue, yellow and red balls represent Cr, S and O atoms, respectively.

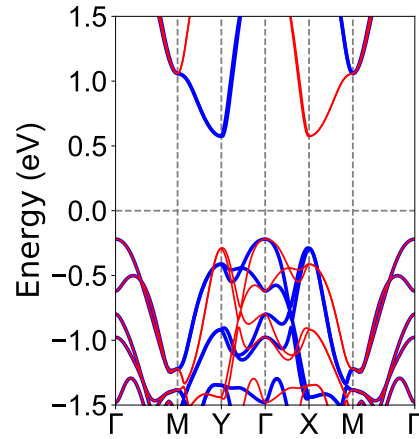


FIG. S3. (Color online) For O-terminal bilayer Cr₂SO with A3 stacking, the energy band structures with AFM2 ordering at $E=0.00$ V/Å. The blue (red) represents spin-up (spin-down) characters.

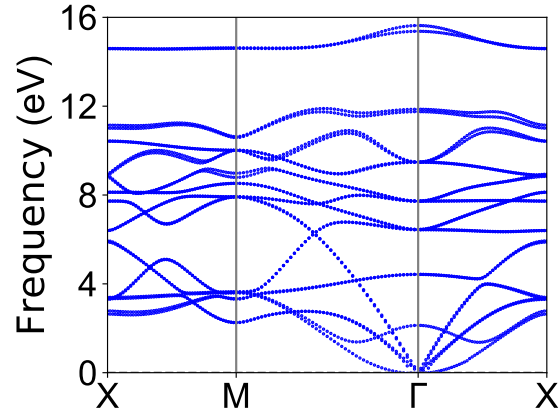


FIG. S4. (Color online) For O-terminal bilayer Cr_2SO with A1 stacking, the phonon dispersion with AFM1 ordering.

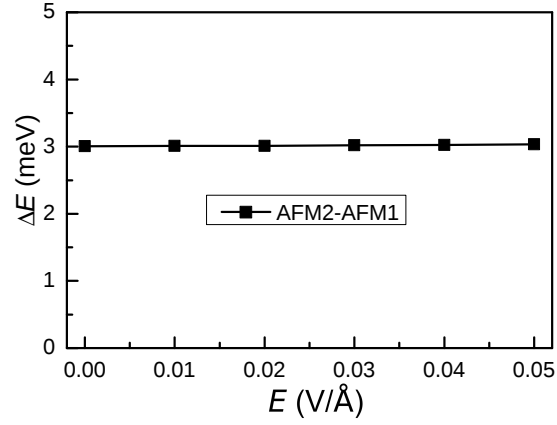


FIG. S5. (Color online) For O-terminal bilayer Cr_2SO , the energy difference between AFM2 and AFM1 configurations as a function of E .

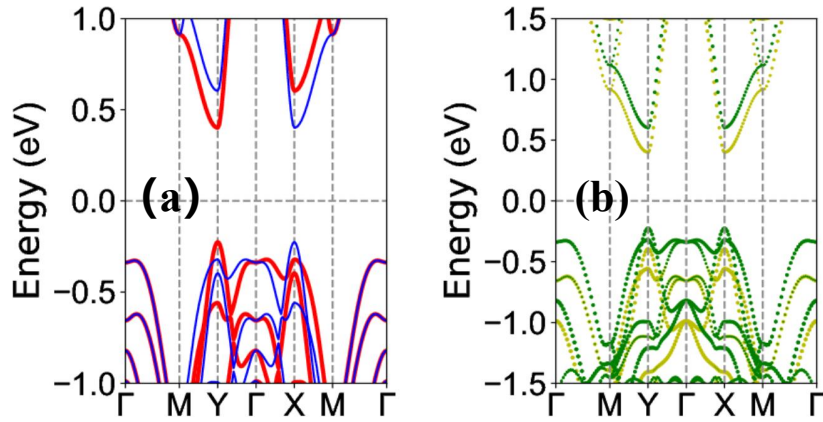


FIG. S6. (Color online) For O-terminal bilayer Cr_2SO , the energy band structures (a) with layer-characteristic projection (b) at representative $E = -0.03 \text{ V}/\text{\AA}$. In (a), the blue (red) represents spin-up (spin-down) characters. In (b), the yellow (green) represents lower (upper)-layer characters.

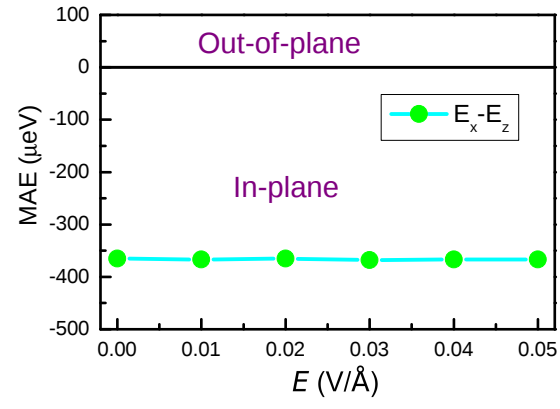


FIG. S7. (Color online) For O-terminal bilayer Cr_2SO , the MAE as a function of E .