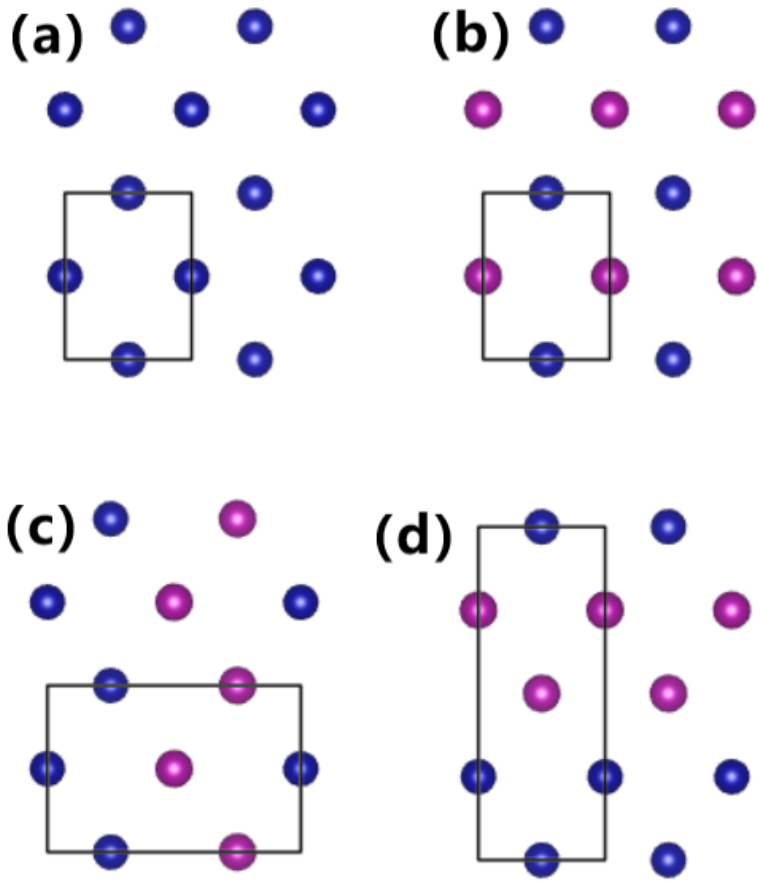

FIG. 1. (Color online)The FM (a) and three AFM configurations (AFM (b), AFM-x (c) and AFM-y (d)).

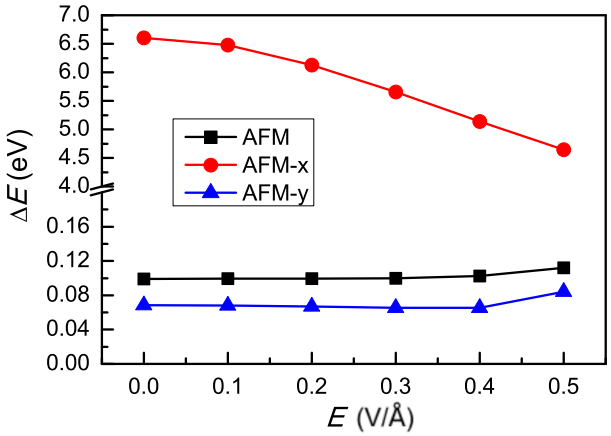

FIG. 2. (Color online)For monolayer CrSBr, the energy differences per formula unit between AFM/AFM-x/AFM-y and FM ordering as a function of electric field E.

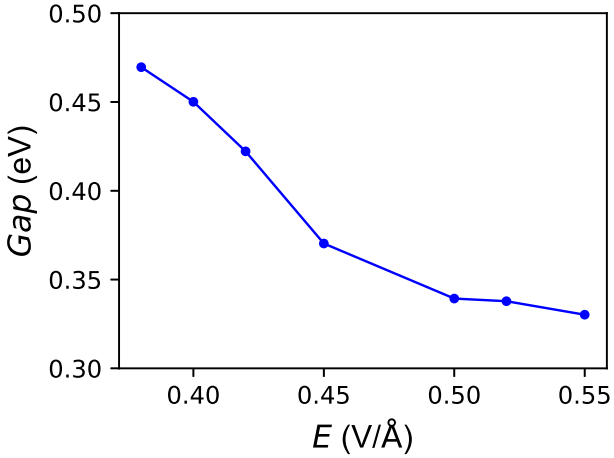

FIG. 3. (Color online)For monolayer CrSBr, the half-metallic gap as a function of electric field E.

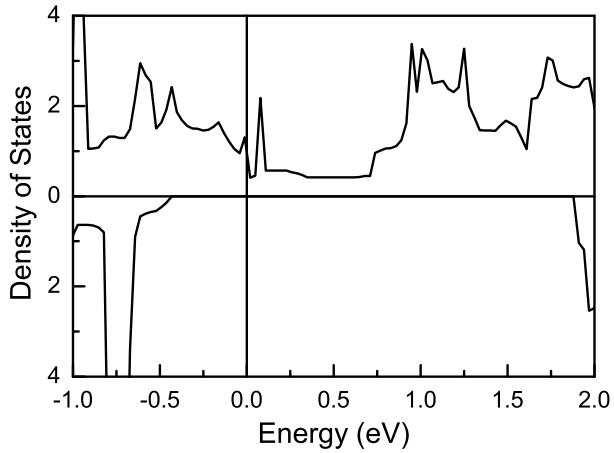

FIG. 4. (Color online)For monolayer CrSBr, the total density of states at E=0.42 V/Å.

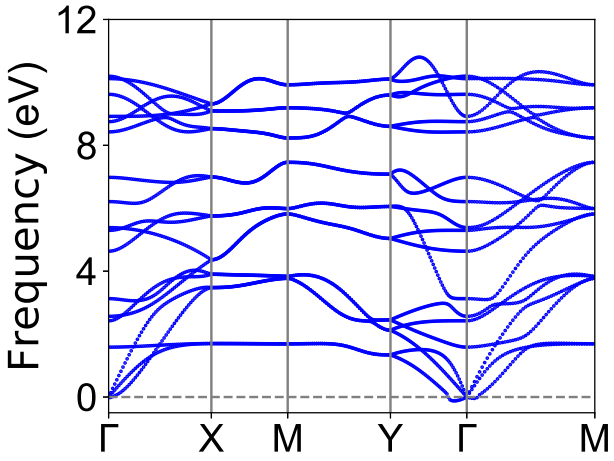

FIG. 5. (Color online)For monolayer CrSBr, the phonon dispersions at E=0.40 V/Å.

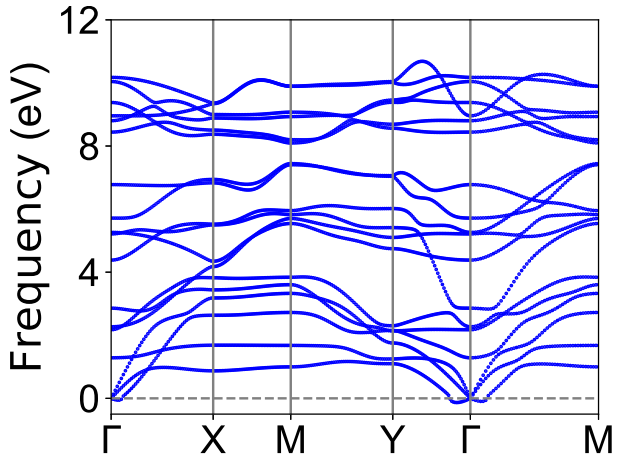

FIG. 6. (Color online)For monolayer Cr_2S_2BrI, the phonon dispersions.

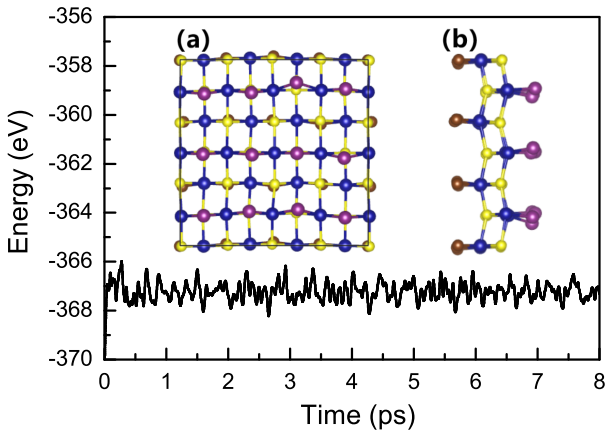

FIG. 7. (Color online)For monolayer Cr_2S_2BrI, the variation of free energy during the 8 ps AIMD simulation at 300 K. Insets show the final structures (top view (a) and side view (b)) after 8 ps at 300 K.

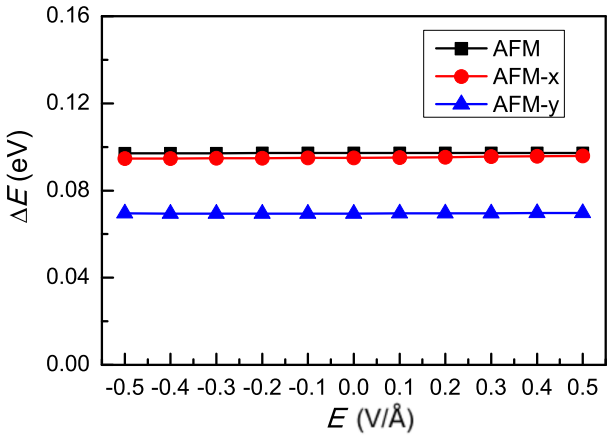

FIG. 8. (Color online)For monolayer Cr_2S_2BrI, the energy differences per formula unit between AFM/AFM-x/AFM-y and FM ordering as a function of electric field E.