



Figure S1. (a) Phonon dispersion of CoAsS along the high-symmetry paths. (b) The enlarged phonon dispersion around the 9.5 THz frequency. (c) Phonon dispersion of Na₂CuP along the high-symmetry paths. (b) The enlarged phonon dispersions around the frequency of 5.8 THz. In (a)-(d), the SOC is considered.