Supplemental information

Electrical switching properties and structural characteristics of GeSe-GeTe films

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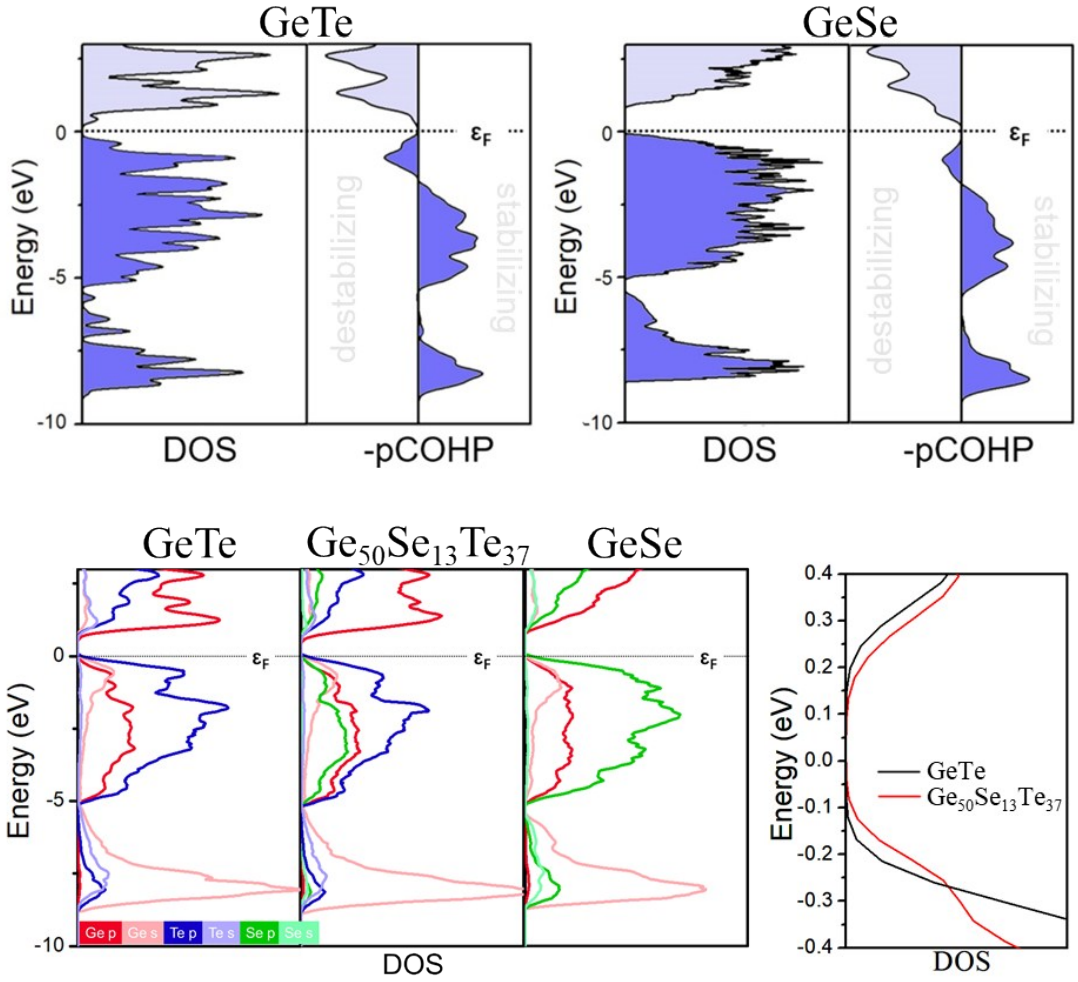

Figure S1. (a) *Densities of states (DOS) and projected COHP analysis for Ge-Te bonds in rhombohedral GeTe. The band gap for GeTe and GeSe are 0.27 eV and 0.95 eV, respectively. The left and right part of -pCOHP indicates the destabilization interaction (antibonding) and stabilization interaction (bonding), respectively.* (b) *DOS and projected COHP analysis for Ge-Se bonds in orthorhombic GeSe. Same COHP analysis as GeTe, but for GeSe. (c) The partial DOS of Ge, Te, and Se atoms in rhombohedral GeTe, $Ge_{50}Se_{13}Te_{37}$ and orthorhombic GeSe, projected onto their outmost s and p orbits. (d) DOS of GeTe and $Ge_{50}Se_{13}Te_{37}$ near* Fermi level (ε_F). Band-tail states exists in $Ge_{50}Se_{13}Te_{37}$, which narrows the band gap.