Supplementary Information

Unveiling the Transporting Mechanism of $(Ti_{0.2}Zr_{0.2}Nb_{0.2}Hf_{0.2}Ta_{0.2})C$ at Room Temperature

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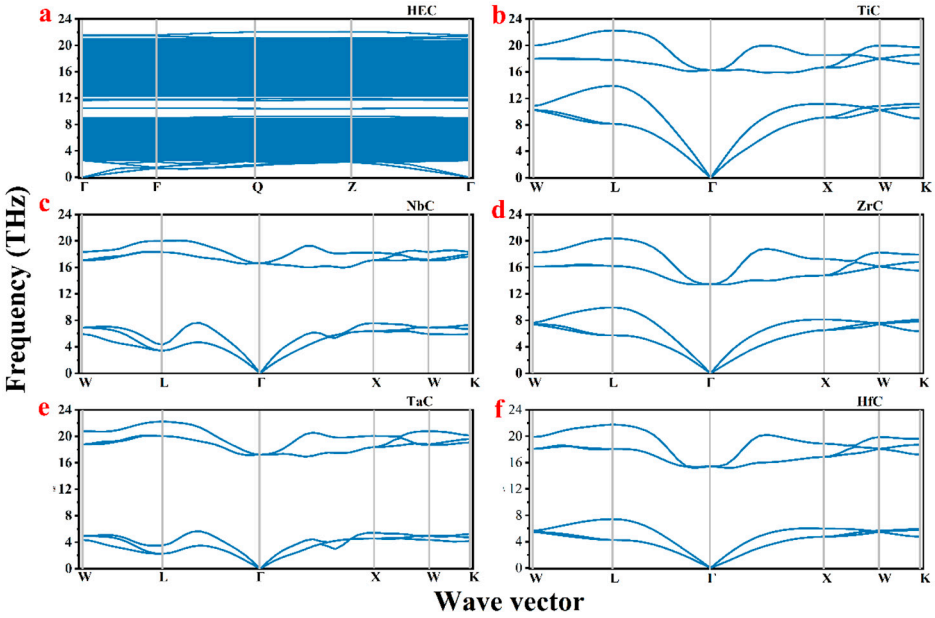

Figure S1. The phonon spectra of high-entropy carbides and individual carbides.

The phonon spectra along the high symmetry direction of the Brillouin zone are shown in Figure S1. Different with the individual carbides, the vibration of acoustic branch phonons in high-entropy carbides is below 2 THz. The Total-Density of state (TDOS) and Partial-Density of state (PDOS) of HEC and individual carbides were calculated in Figure S2, and The Fermi level was presented by red dashed line.

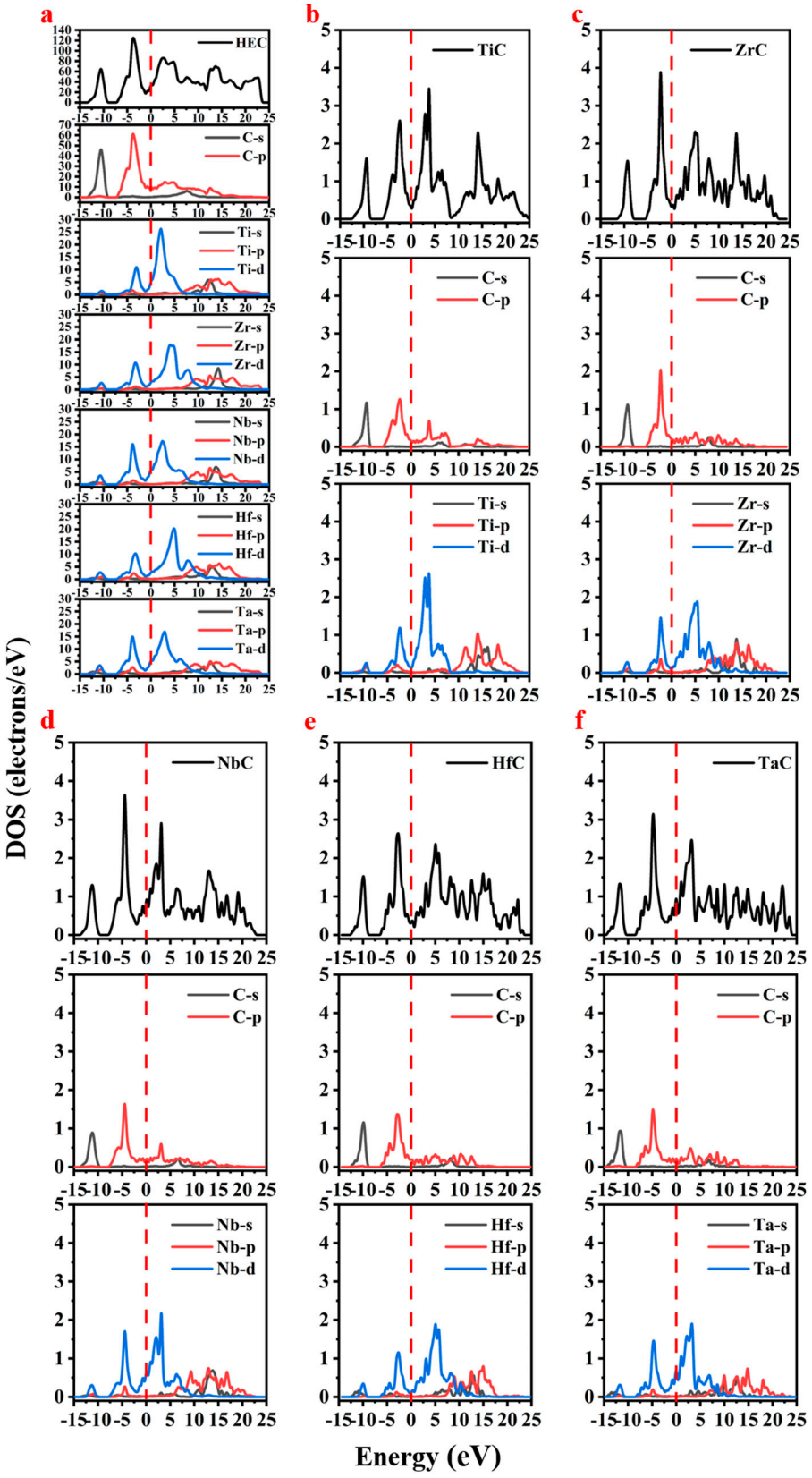

Figure S2. The Total-Density of states and Partial-Density of states of carbides and individual carbides.