

Support Information

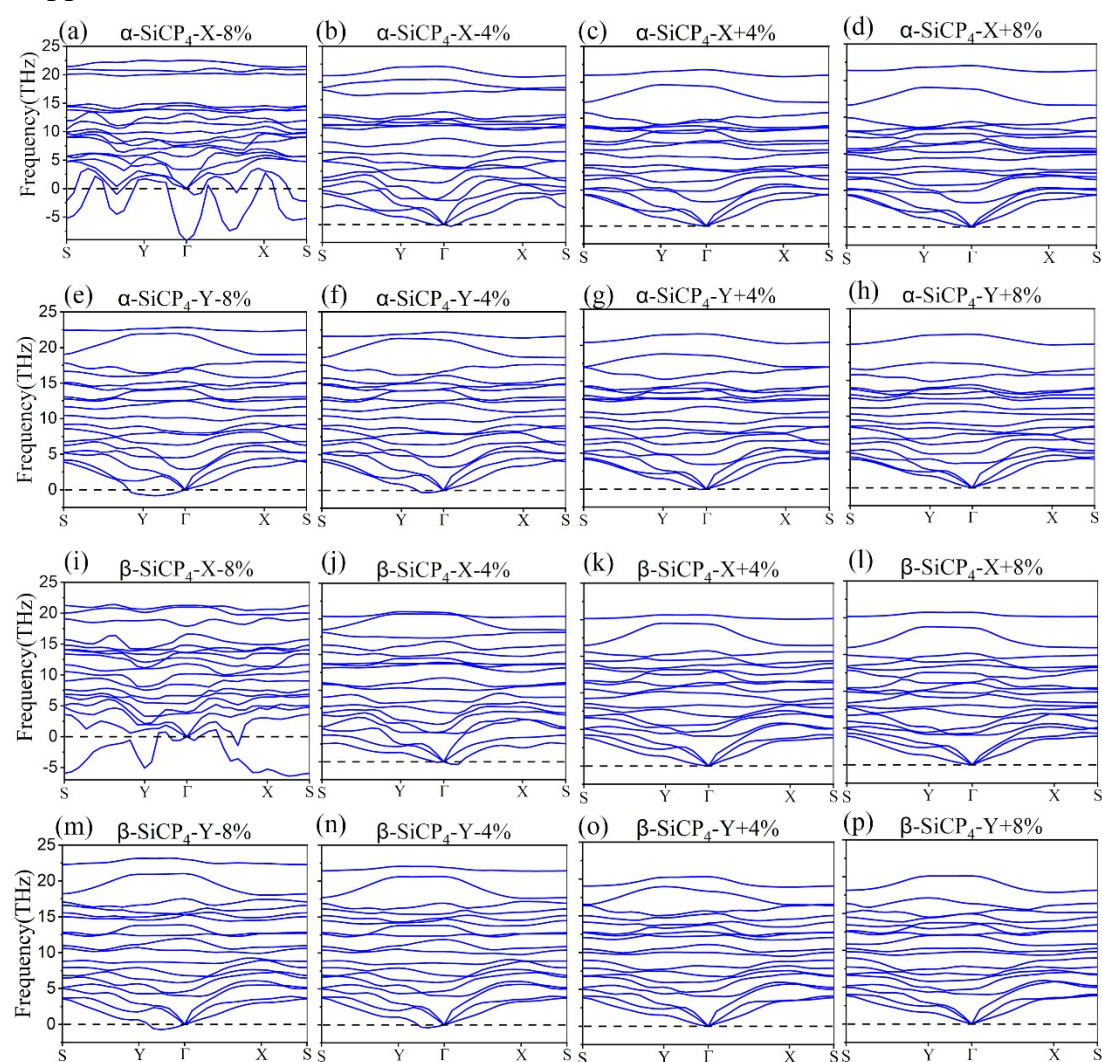


Fig.S1 (a) - (d) the phonon spectrum of monolayer α -SiCP₄ with X-direction strain for -8%, -4%, 4% and 8%. (e) - (h) the phonon spectrum of monolayer α -SiCP₄ with Y-direction strain for -8%, -4%, 4% and 8%. (i) - (l) the phonon spectrum of monolayer β -SiCP₄ with X-direction strain for -8%, -4%, 4% and 8%. (m) - (p) the phonon spectrum of monolayer β -SiCP₄ with Y-direction strain for -8%, -4%, 4% and 8%.

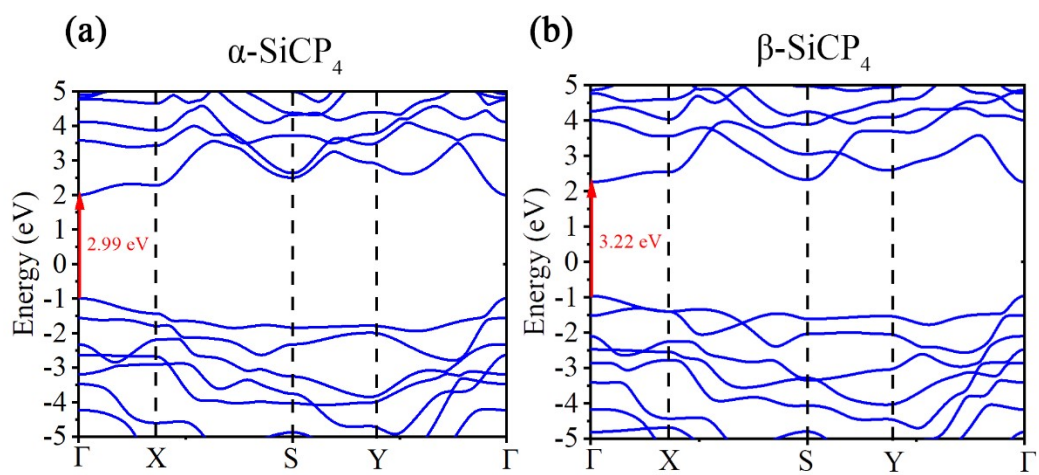


Fig.S2 (a) - (b) the quasi particle band structure of monolayer α - and β -SiCP₄.