Supplement Information

Enhanced Thermoelectric Properties of Phosphorene by Quantum Size Effect and Relaxation Time Tuning

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Table S1. Calculated carrier effective mass (m^*), in-plane elastic modulus (C^{2D}), deformation potential constant (E_l), and electron relaxation time (τ) of phosphorene under tensile strain along the armchair direction at 300 K.

Materials	*Carrier type*	$m^*(m_e)$	$C^{2D}(J/m^2)$	$\|E_l\|(eV)$	$\tau(fs)$
BP(1.5%)	e (armchair)	0.179	11.77	1.46	250.41
	h (armchair)	0.168	11.77	2.29	107.80
BP(3%)	e (armchair)	0.178	11.43	1.64	193.38
	h (armchair)	0.168	11.43	1.93	146.85
BP(4.5%)	e (armchair)	0.175	11.01	1.61	195.01
	h (armchair)	0.168	11.01	1.55	220.98

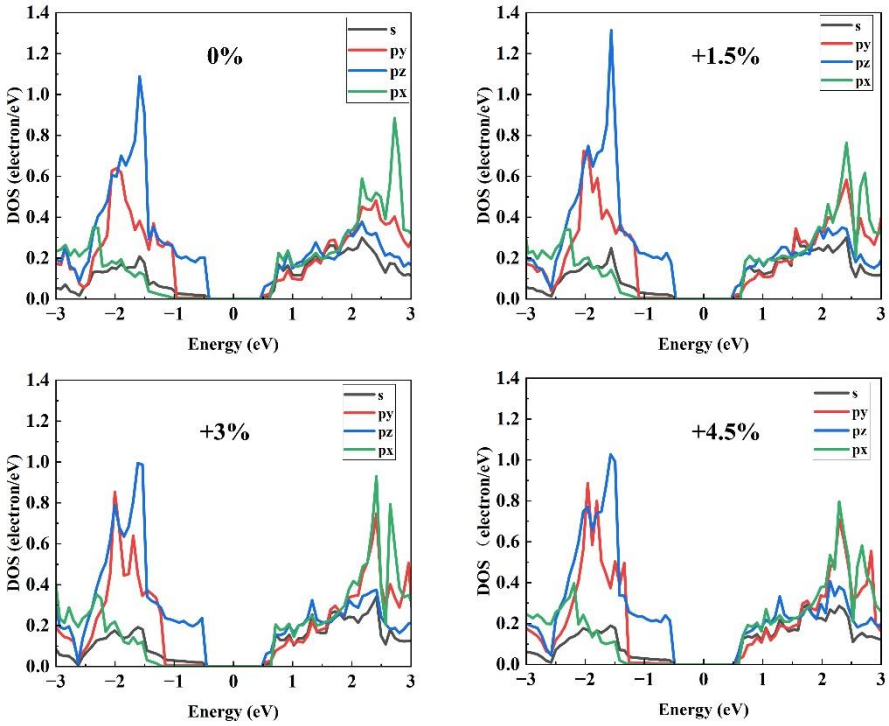


Figure S1. Calculated partial DOS of phosphorene with and without tensile strain.