Supporting information for

"Influence of Sr doping on the photoelectronic properties of $CsPbX_3$ (X=Cl, Br, or I): A DFT investigation"

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Table S1. Relating to the energy of formation, the enthalpy of formation of various compounds.

formula	Space group	The formation energy (eV)	formula	Space group	The formation energy (eV)	formula	Space group	The formation energy (eV)
CsI	P4/mbm	-5.411	CsBr	Pm-3m	-6.022	CsCl	Pm-3m	-6.538
PbI_2	P-3m1	-8.147	$PbBr_2$	Pnam	-9.673	$PbCl_2$	P42/mnm	-10.764
SrI_2	pnma	-9.815	$SrBr_2$	P4/n2	-11.325	$SrCl_2$	Fm-3m	-12.792
$CsPbI_3$	Pm-3m	-14.087	$CsPbBr_3$	Pm-3m	-15.940	$CsPbCl_3$	Pm-3m	-17.624
$CsPb_{0.875}Sr_{0.125}I_3$	Pm-3m	-14.225	$CsPb_{0.875}Sr_{0.125}Br_3$	Pm-3m	-16.128	$CsPb_{0.875}Sr_{0.125}Cl_3$	Pm-3m	-17.849

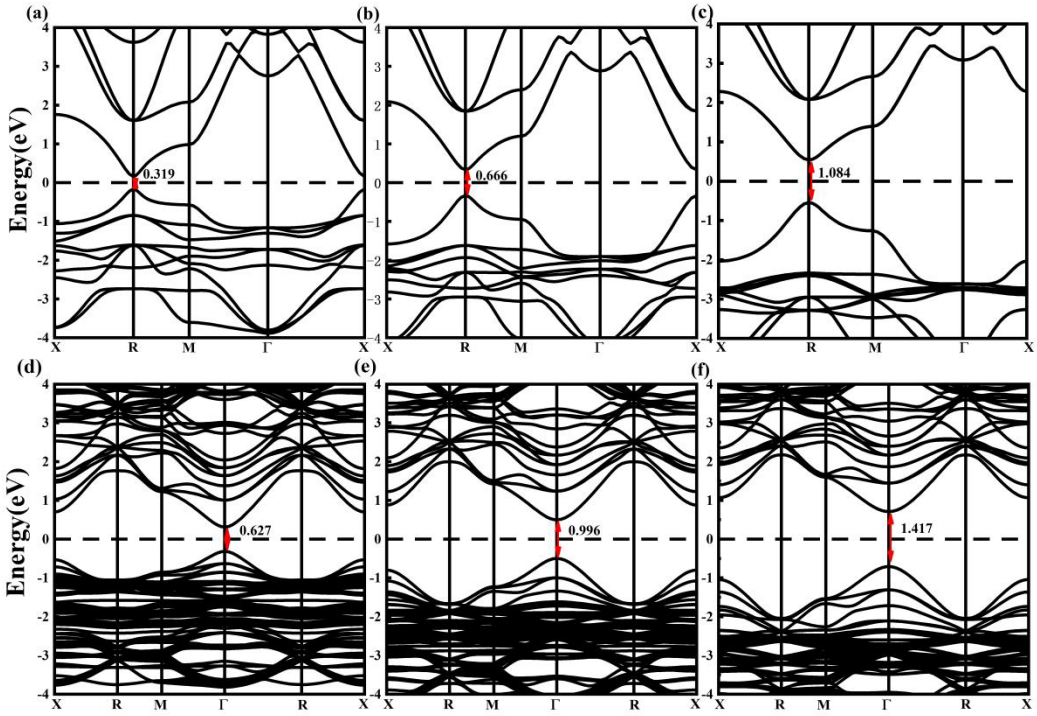

Fig S1. Energy band calculation with spin-orbit coupling, **(a)** $CsPbI_3$, **(b)** $CsPbBr_3$, **(c)** $CsPbCl_3$, **(d)** $CsPb_{0.875}Sr_{0.125}I_3$, **(e)** $CsPb_{0.875}Sr_{0.125}Br_3$, and **(f)** $CsPb_{0.875}Sr_{0.125}Cl_3$.

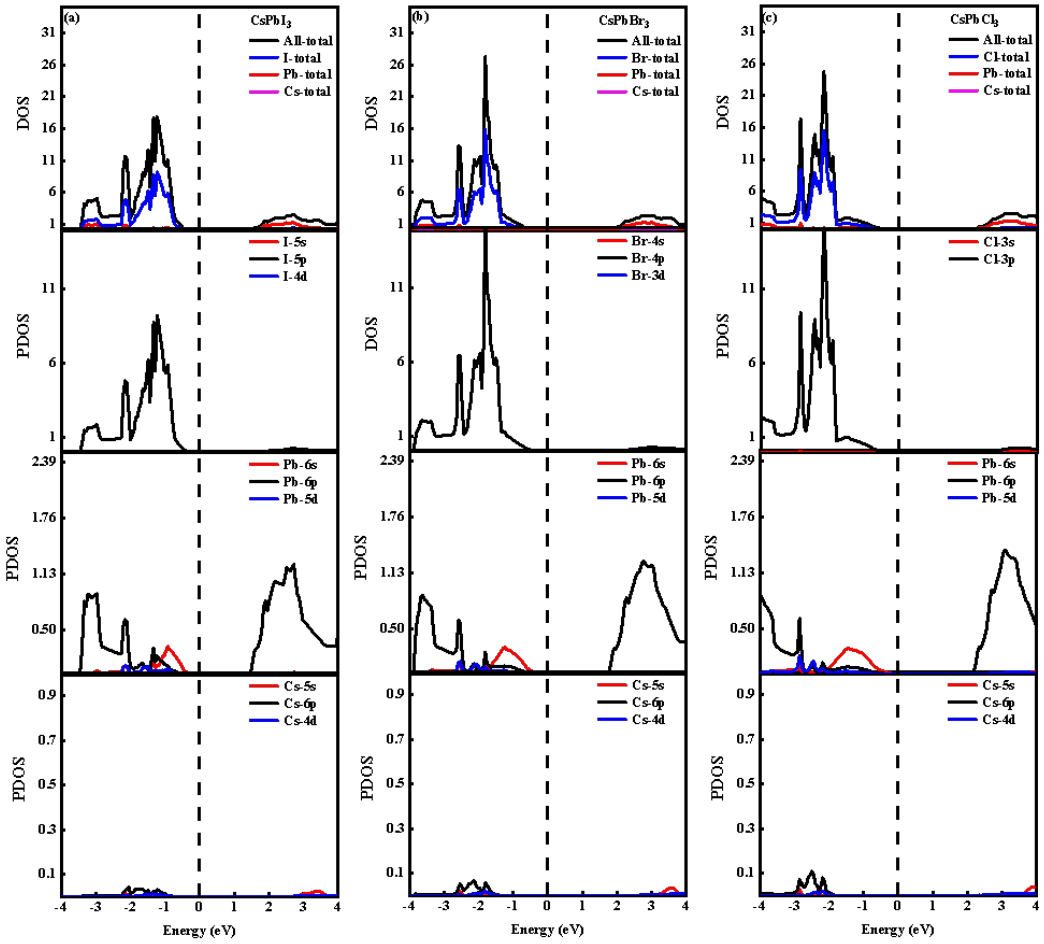

Fig S2. Density distribution of **(a)** $CsPbI_3$ **(b)** $CsPbBr_3$, and **(c)** $CsPbCl_3$