Supporting Information

## Improving power factor and figure of merit of p-type CuSbSe2 via

## introducing Sb vacancies

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CuSb1-xSe2	<i>d</i> (g cm <sup>3</sup> )	<i>d</i> r (%)
x=0	5.71	97.1
x=0.03	5.85	99.4
x=0.06	5.86	99.6
x=0.09	5.84	99.3
x=0.12	5.85	99.4

1. The density(d) and the relative density( $d_r$ ) of CuSb<sub>1-x</sub>Se<sub>2</sub>(x=0-0.12)

Table S1. The density(d) and the relative density(d<sub>r</sub>) of CuSb<sub>1-x</sub>Se<sub>2</sub>(x=0-0.12)

2. The temperature dependence of  $C_p$  for  $CuSb_{1-x}Se_2$  (x=0-0.12) samples.



Figure S1. The temperature dependence of  $C_p$  for  $CuSb_{1-x}Se_2$  (x=0-0.12) samples.

## 3. EDAX measurement for all samples of CuSb<sub>1-x</sub>Se<sub>2</sub> (x=0, 0.03, 0.06, 0.09 and 0.12).

	Cu (At%)	Sb (At%)	Se (At%)
CuSbSe <sub>2</sub>	27.5	26.3	46.2
CuSb <sub>0.97</sub> Se <sub>2</sub>	27.6	26.1	46.3
CuSb <sub>0.94</sub> Se <sub>2</sub>	28.0	25.7	46.4
CuSb <sub>0.91</sub> Se <sub>2</sub>	28.6	25.6	45.8
CuSb <sub>0.88</sub> Se <sub>2</sub>	29.1	24.5	46.4

Table S2 Compositions of all samples measured with EDAX.