# Journal of Materials Chemistry A
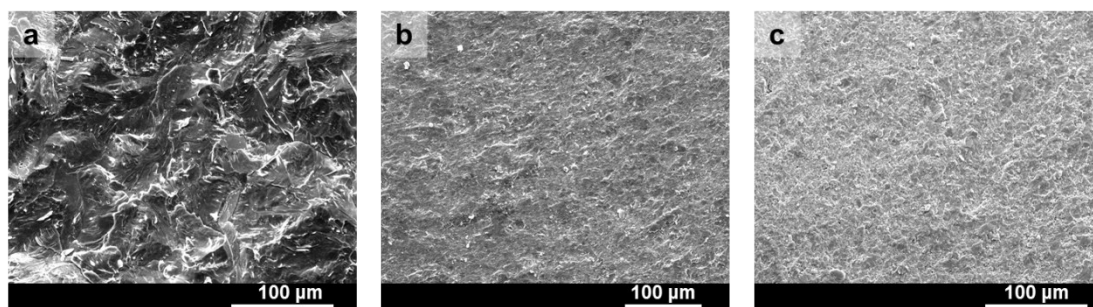
## ELECTRONIC SUPPLEMENTARY INFORMATION

## Simultaneous enhancement in power factor and thermoelectric performance of copper sulfide by In$_2$S$_3$ doping

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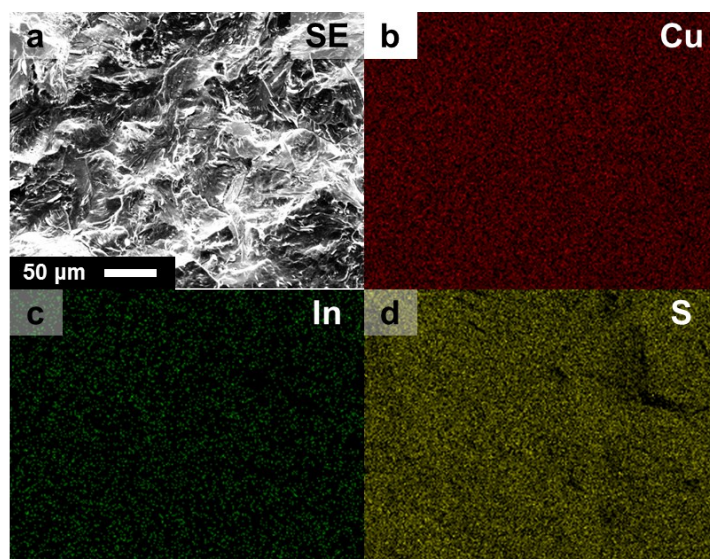
**Supplementary Figure S1.** SEM images of Cu$_2$S-x%In$_2$S$_3$ (x=1, 5 and 10). **a.** Cu$_2$S-1%In$_2$S$_3$. **b.** Cu$_2$S-5%In$_2$S$_3$. **c.** Cu$_2$S-10%In$_2$S$_3$.

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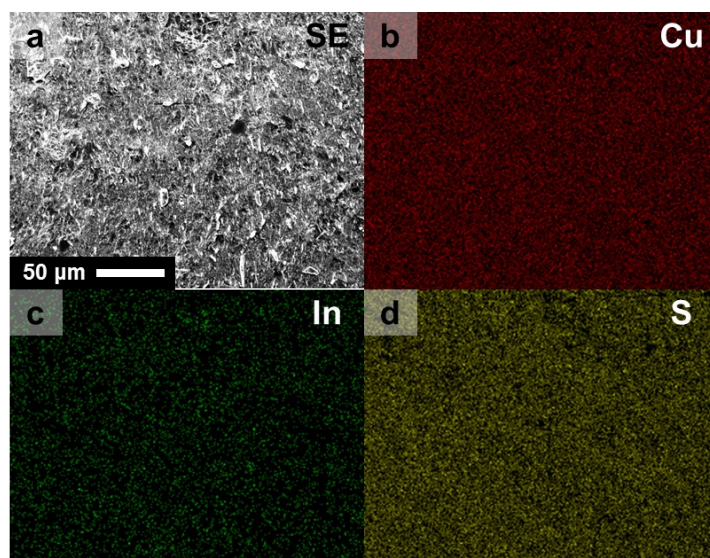
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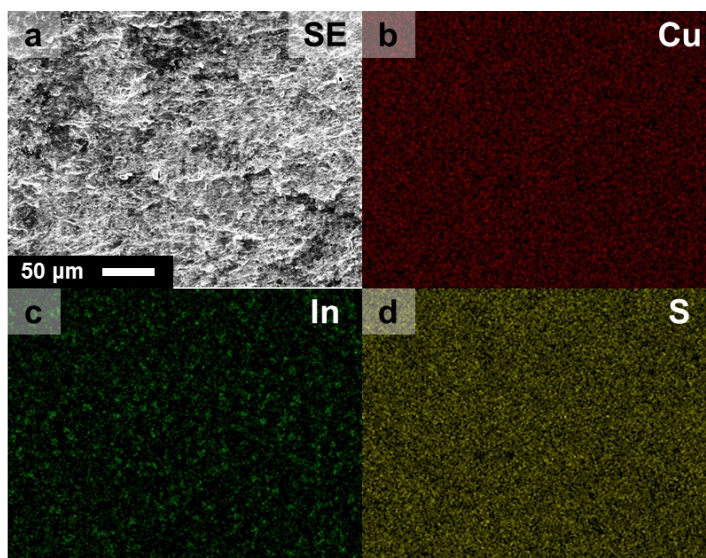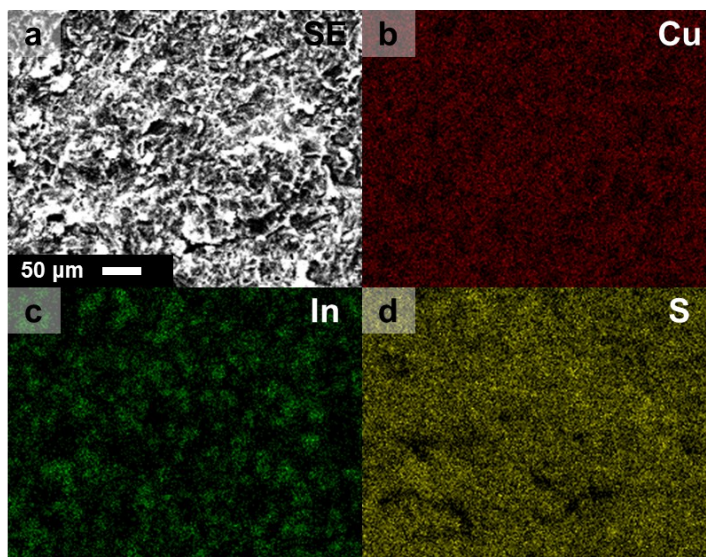
[‡] These authors contribute equally.

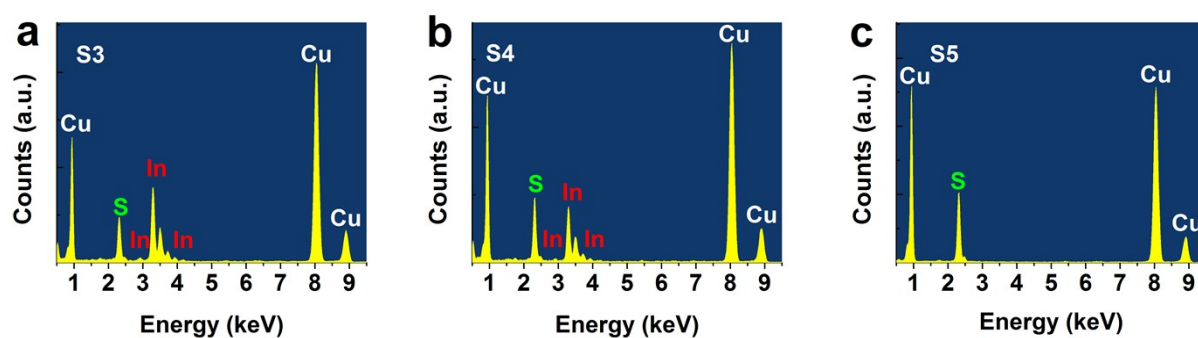**Supplementary Figure S2.** EDX elemental maps of $Cu_2S$-1%$In_2S_3$. **a.** SE. **b.** Cu. **c.** In. **d.** S.



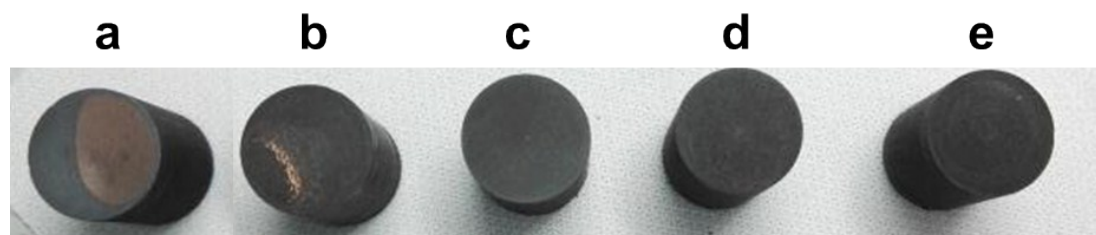**Supplementary Figure S3.** EDX elemental maps of $Cu_2S$-2%$In_2S_3$. **a.** SE. **b.** Cu. **c.** In **d.** S.

**Supplementary Figure S4.** EDX elemental maps of $Cu_2S$-5%$In_2S_3$. **a.** SE. **b.** Cu. **c.** In. **d.** S.



**Supplementary Figure S5.** EDX elemental maps of $Cu_2S$-10%$In_2S_3$. **a.** SE. **b.** Cu. **c.** In. **d.** S.

**Supplementary Figure S6.** EDX spectra of $Cu_2S$-2%$In_2S_3$ for different spots. **a.** Spot3 (S3). **b.** Spot4 (S4). **c.** Spot5 (S5).



**Supplementary Figure S7.** Images of sintered $Cu_2S$-x%$In_2S_3$ (x=0, 1, 2, 5 and 10) columns by SPS. **a.** $Cu_2S$. **b.** $Cu_2S$-1%$In_2S_3$. **c.** $Cu_2S$-2%$In_2S_3$. **d.** $Cu_2S$-5%$In_2S_3$. **e.** $Cu_2S$-10%$In_2S_3$.