Electronic Supplementary Material (ESI) for Journal of Materials Chemistry A.

Supporting Information

Enhanced thermoelectric properties of *p*-type Ag_2Te by Cu substitution

Hangtian Zhu, Jun Luo , Huaizhou Zhao and Jingkui Liang*

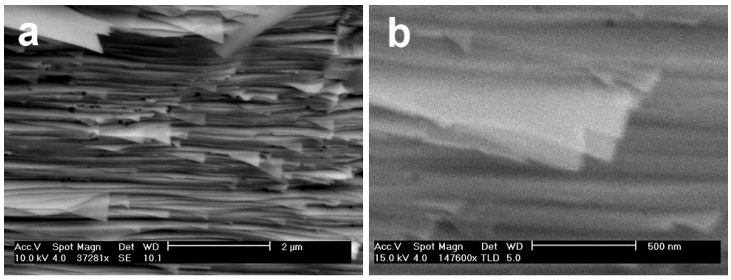

Fig. S1 SEM images of SPS treated $(Ag_{0.985-x}Cu_x)_2Te$ sample with x = 0.3.

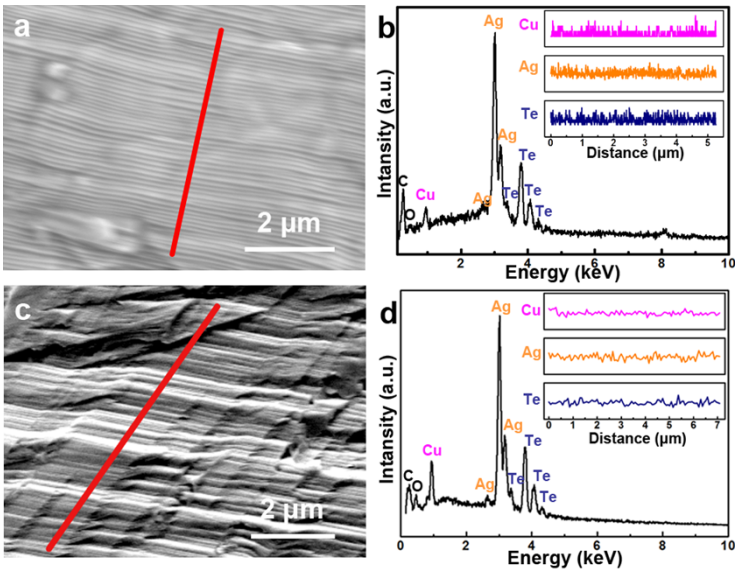

Fig. S2 EDX analysis of the $(Ag_{0.985-x}Cu_x)_2Te$ sample with x = 0.3. (a, c) SEM images of the ingot surface and fracture surface where the EDX spectrum and EDX line scanning were carried out. (b, c) EDX spectrum of ingot surface and fracture surface, the inset is EDX line scanning results along the red line marked in the SEM images. The average atomic ratios of Ag, Cu and Te are 55.38 : 15.73 : 28.89 and 54.97 : 12.48 : 32.55 for ingot surface and fracture surface, respectively.

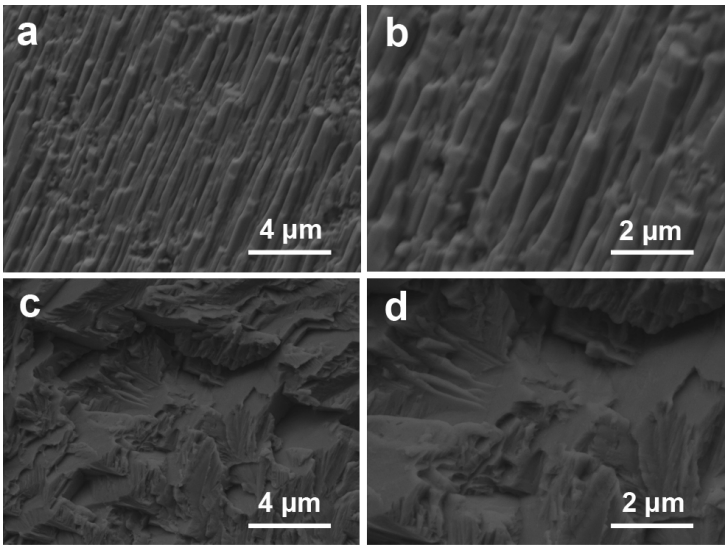

Fig. S3 SEM images of obtained $(Ag_{0.985-x}Cu_x)_2Te$ sample with x = 0. General overview and high magnification images of (a, b) ingot surface and (c, d) fracture surface.

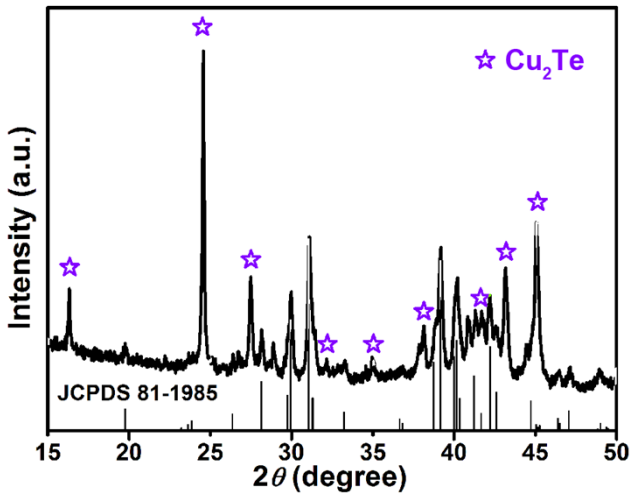

Fig. S4 The XRD pattern of $(Ag_{0.985-x}Cu_x)_2Te$ sample with x = 0.3 which have been reheated to 573 K, held at this temperature for 1 hour, and then cooled down to room temperature.

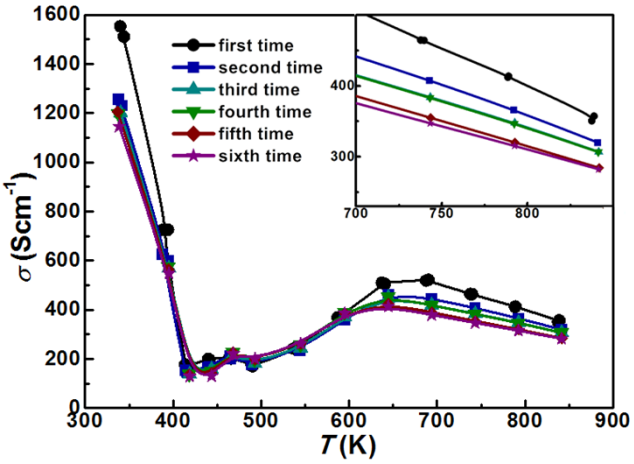

Fig. S5 Repeated measurements of electrical conductivity for $(Ag_{0.985-x}Cu_x)_2Te$ with x = 0.3.

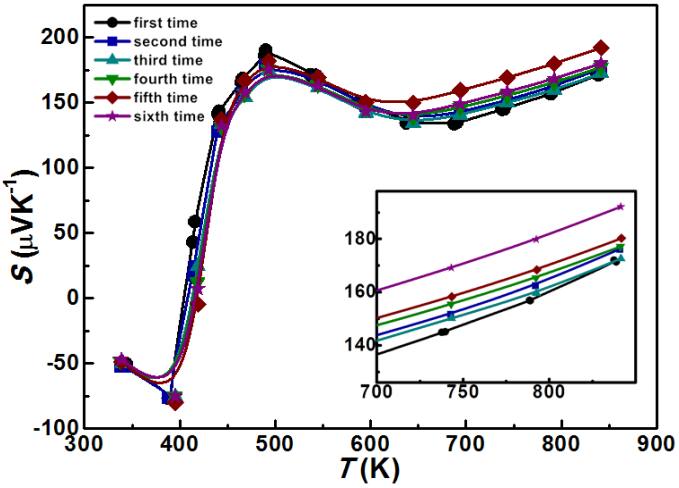

Fig. S6 Repeated measurements of Seebeck coefficient for $(Ag_{0.985-x}Cu_x)_2Te$ with x = 0.3.

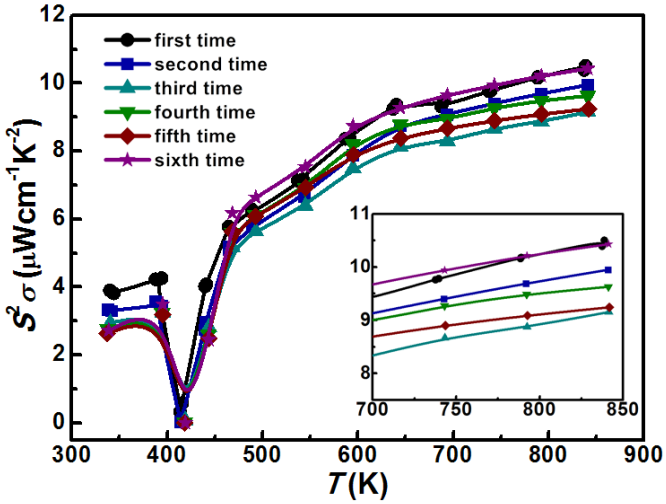

Fig. S7 Dependence of power factor on the repeat measurement times for $(Ag_{0.985-x}Cu_x)_2Te$ with x = 0.3.

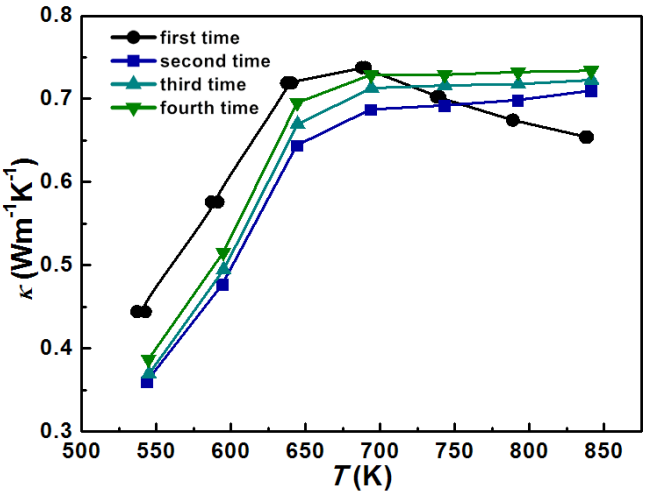

Fig. S8 Repeated measurements of thermal conductivity for $(Ag_{0.985-x}Cu_x)_2Te$ with x = 0.3.

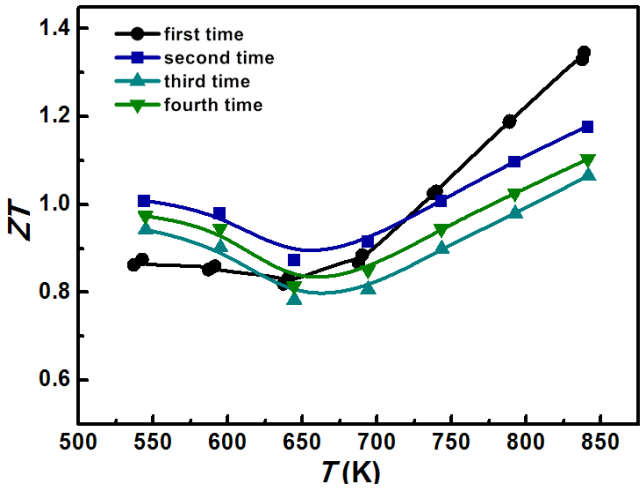

Fig. S9 Dependence of ZT value on the repeat measurement times for $(Ag_{0.985-x}Cu_x)_2Te$ with x = 0.3.