Electronic Supplementary Material (ESI) for RSC Advances.

Enhanced power factor in promising thermoelectric material $SnPb_xTe$ prepared via zone-melting

Jun He[a,b], Jingtao Xu[*a], Guoqiang Liu[a], Xiaojian Tan[a], Hezhu Shao[a], Zhu Liu[a], Jiaqiang Xu[†b], Jun Jiang[a], Haochuan Jiang[a]

[a]*Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences, Ningbo 315201, China.*

[b]*NEST Lab, Department of Chemistry, College of Sciences, Shanghai University, Shanghai 200444, China*

Table S1. Room temperature densities for the $SnPb_xTe$ samples in this study.

Compositions		Theoretical density(g/cm^3)	Measured density(g/cm^3)	Relative density(%)
$SnPb_xTe$	$x = 0$	6.50	6.36	97.8
	$x = 0.02$	6.51	6.43	98.8
	$x = 0.04$	6.53	6.43	98.5
	$x = 0.06$	6.56	6.44	98.2

* Author to whom correspondence should be addressed. Electronic mail: xujingtao@nimte.ac.cn.

† Author to whom correspondence should be addressed. Electronic mail: xujiaqiang@shu.edu.cn.

Figure S1. (a) Thermal diffusivity λ and (b) Lorenz number L as a function of temperature for $SnPb_xTe$.

Figure S2. Thermoelectric properties as a function of temperature, for three different pieces of three samples of SnTe. (a) Electrical conductivity, (b) Seebeck coefficient.

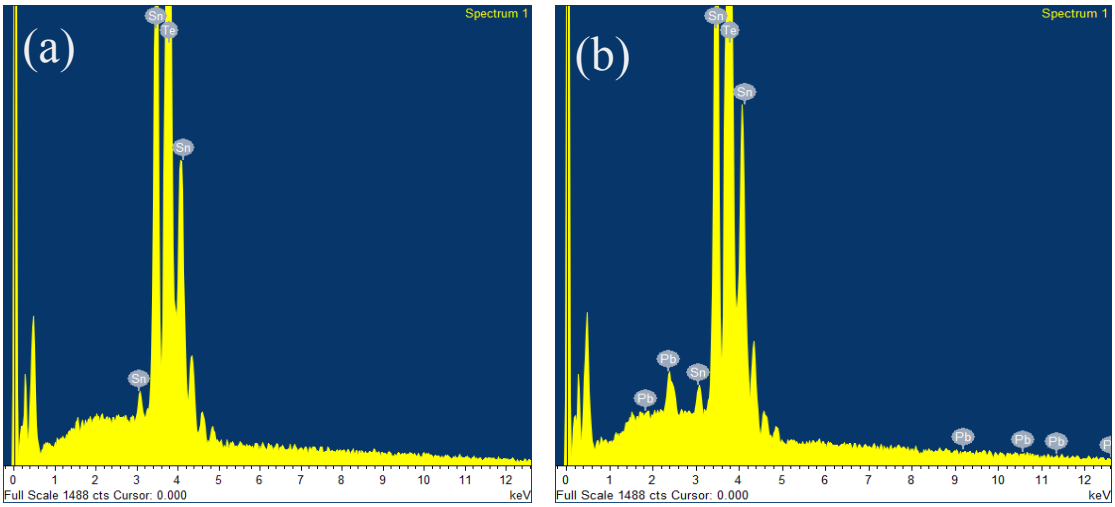

Figure S3 The EDS results for (a) SnTe and (b) $SnPb_{0.02}Te$. The peak for Pb is clearly observed in (b). (c) Composition distribution of ten different parts of $SnPb_{0.02}Te$.