

Suppressing the Dynamic Precipitation and Lowering the Thermal Conductivity for Stable and High Thermoelectric Performance in BaCu₂Te₂ Based Materials

Kai Guo,^{†a} Jianwei Lin,^{†a} Yang Li,^a Yifan Zhu,^{b,c} Xin Li,^b Xinxin Yang,^a Juanjuan Xing,^a Jiong Yang,^{*b}

Jun Luo ^{*a,b} and Jing-Tai Zhao ^{d,e}

^a School of Materials Science and Engineering, Shanghai University, 99 Shangda Road, Shanghai 200444, China

^b Materials Genome Institute, Shanghai University, 99 Shangda Road, Shanghai 200444, China

^c State Key Laboratory of High Performance Ceramics and Superfine Microstructure, Shanghai Institute of Ceramics, Chinese Academy of Science, 1295 Dingxi Road, Shanghai 200444, China

^d School of Materials Science and Engineering, Guilin University of Electronic Technology, Guilin 541004, China

^e Guangxi Key Laboratory of Information Materials, Guilin University of Electronic Technology, Guilin 541004, China

[†] These authors contributed equally to this work.

* Corresponding author. E-mail: jiongy@t.shu.edu.cn (J. Yang); junluo@shu.edu.cn (J. Luo)

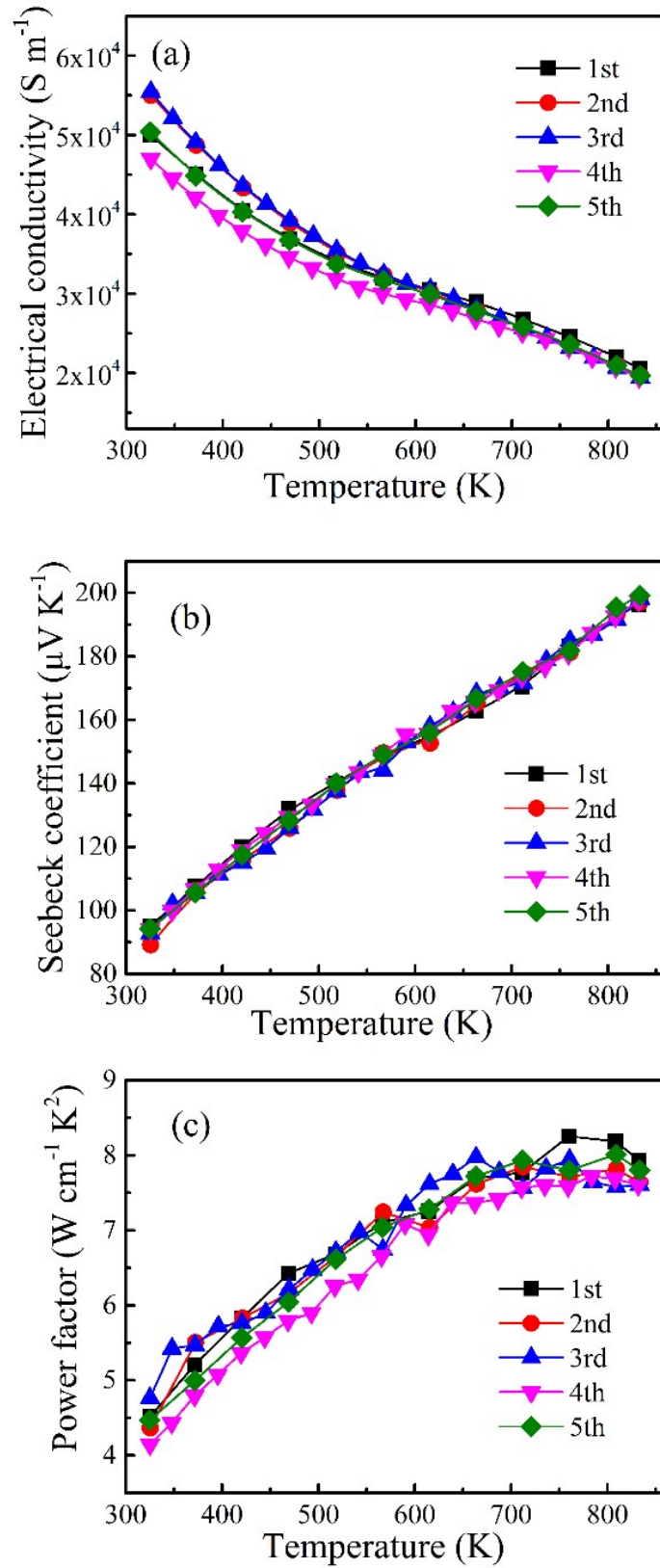


Figure S1. The repeated measurements of electrical conductivity (a), Seebeck coefficient (b) and power factor (c) for the high-performance $BaCu_{2.04}Te_2$ sample, indicating a good thermal stability.

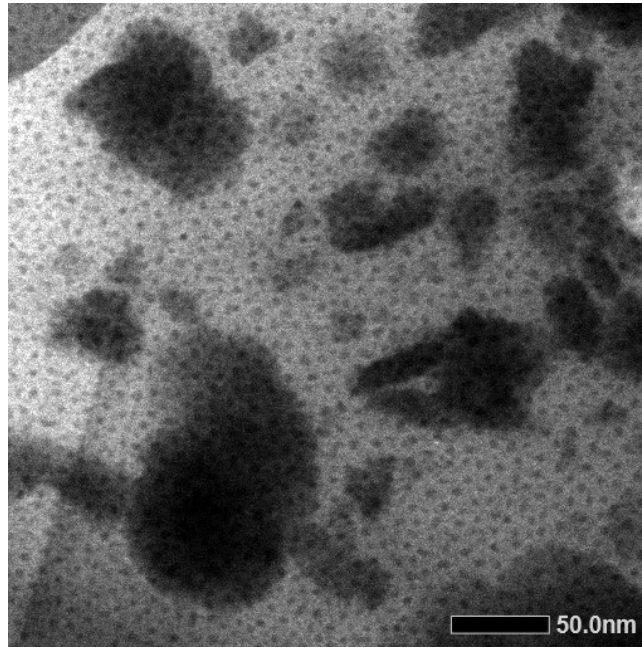


Figure S2. The selected area for EDS mapping.

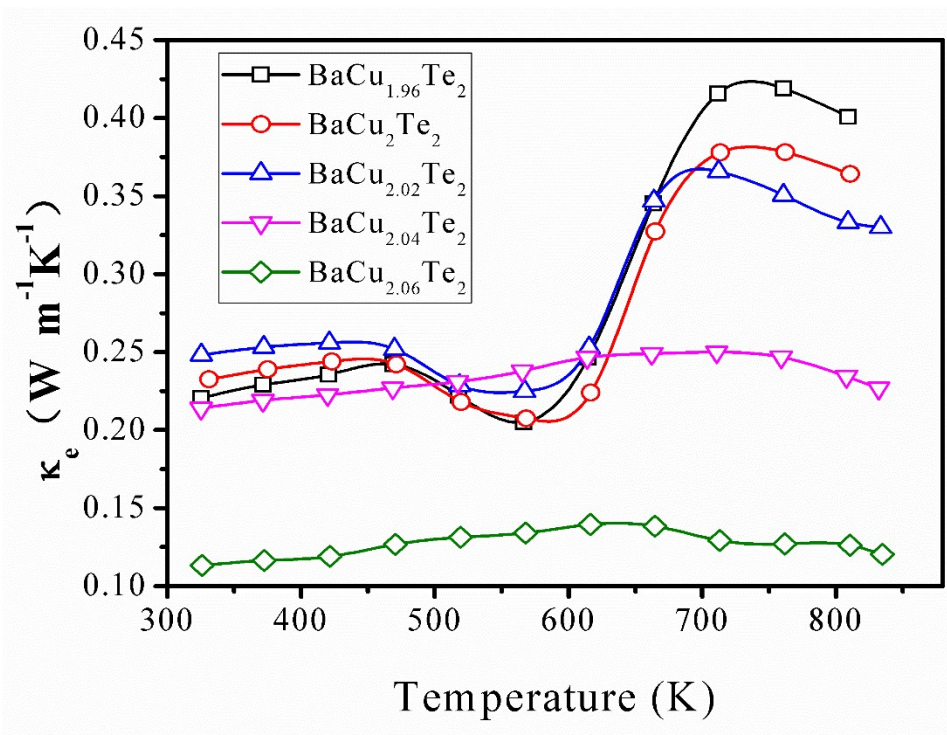


Figure S3. The temperature dependences of the electronic thermal conductivities for BaCu_{2+x}Te₂ samples ($x = -0.04, 0, 0.02, 0.04, 0.06$ and 0.08).