

Supplementary

## Influence of Yb doping and sintering conditions on magnetocaloric and mechanical properties of EuS

Liang Li <sup>1,2,3,\*</sup>, Yuqi Chen <sup>4</sup>, Junbao He <sup>1</sup>, and Aiguo Zhou <sup>3,\*</sup>

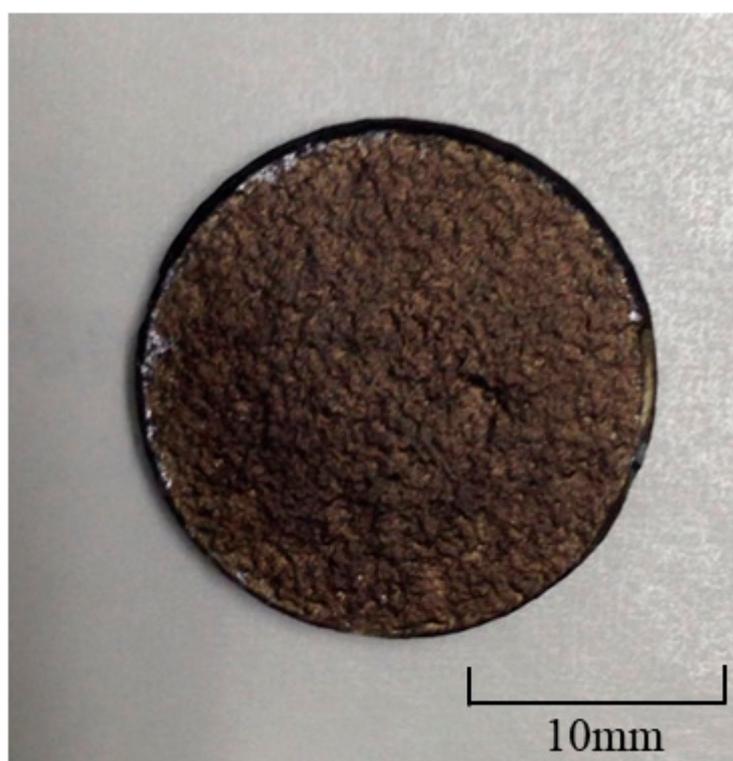
<sup>1</sup> School of Mechanical and Electrical Engineering, Nanyang Normal University, Nanyang 473061, China

<sup>2</sup> Jinguan Electric Co., Ltd., Nanyang 473000, China

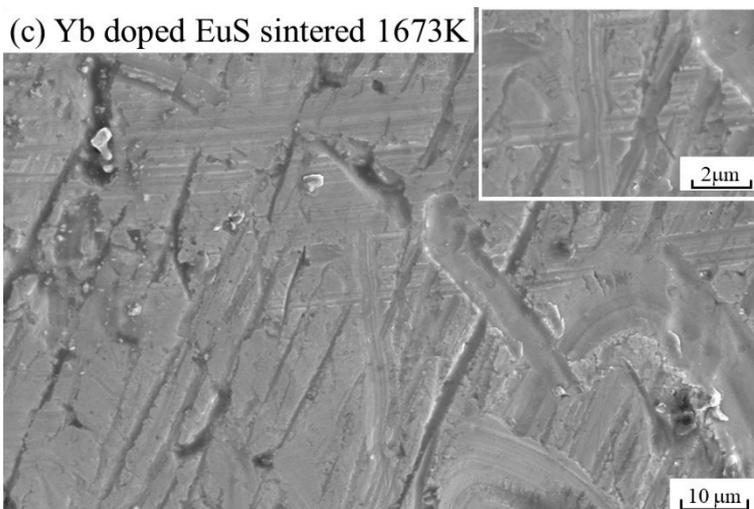
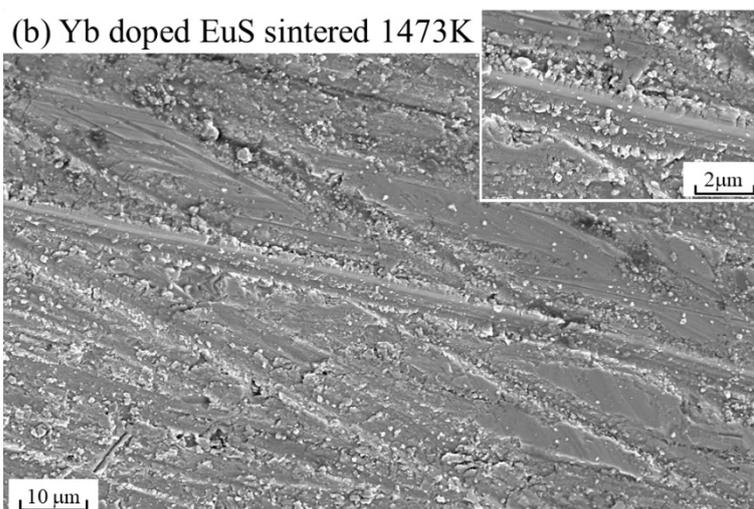
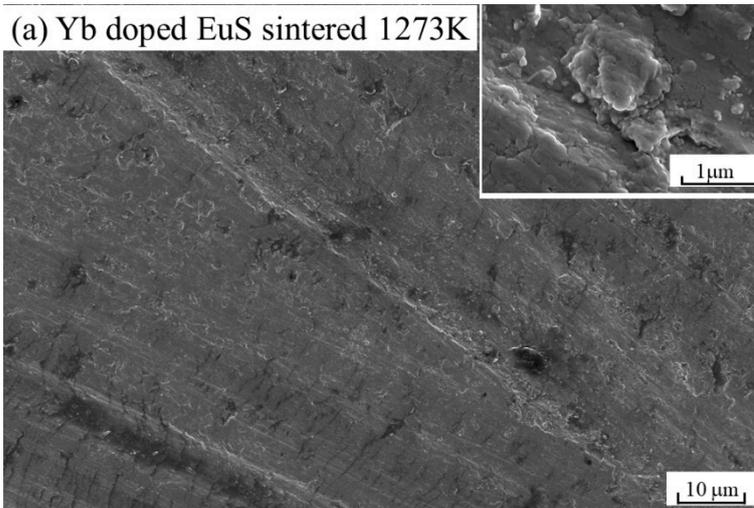
<sup>3</sup> Henan Key Laboratory of Materials on Deep-Earth Engineering, School of Materials Science and Engineering, Henan Polytechnic University, Jiaozuo 454003, China

<sup>4</sup> School of Materials Science and Engineering, Shanghai Dian Ji University, Shanghai 201306, China

\* Correspondence: liliangjdc@nynu.edu.cn; zhouag@hpu.edu.cn; Tel.: (+86-037763513077)



**Figure S1.** The optical photograph of EuS.



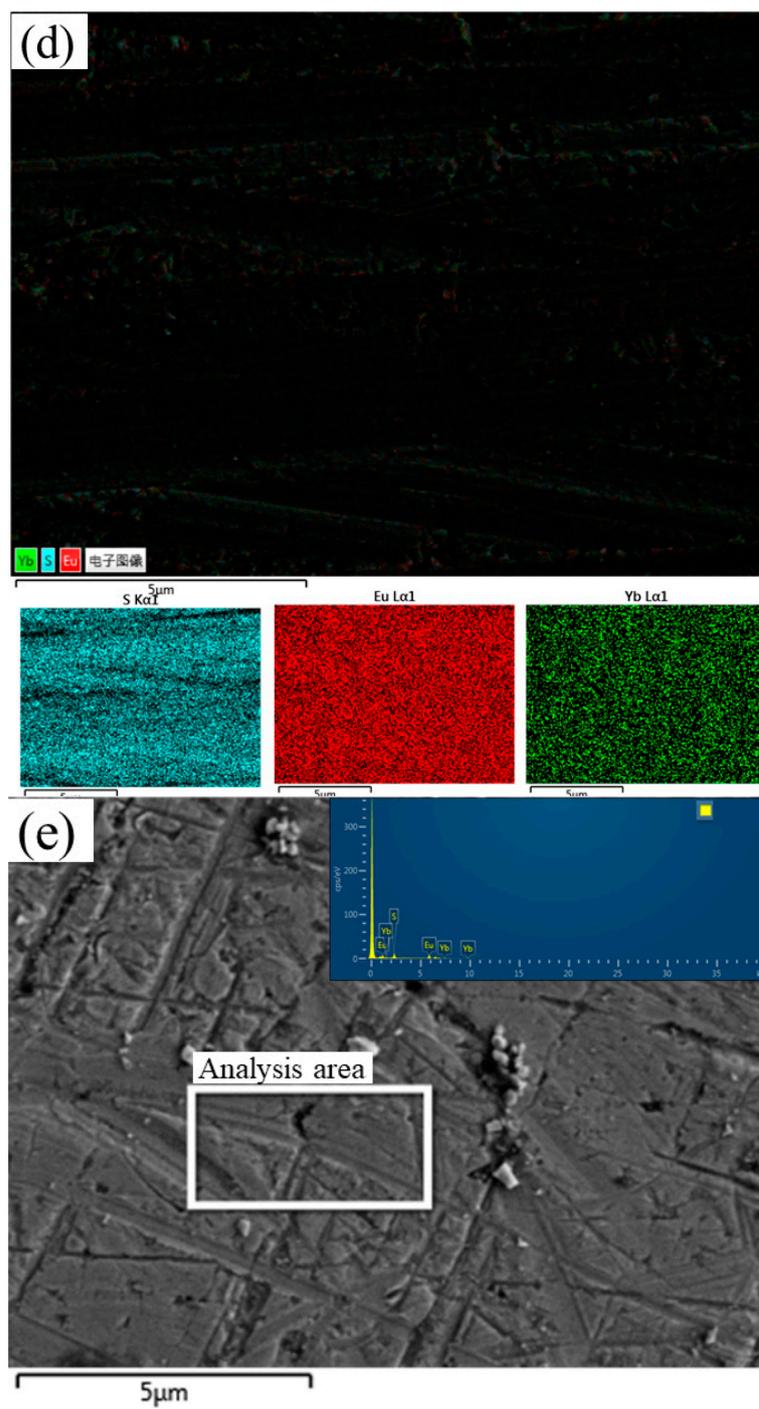
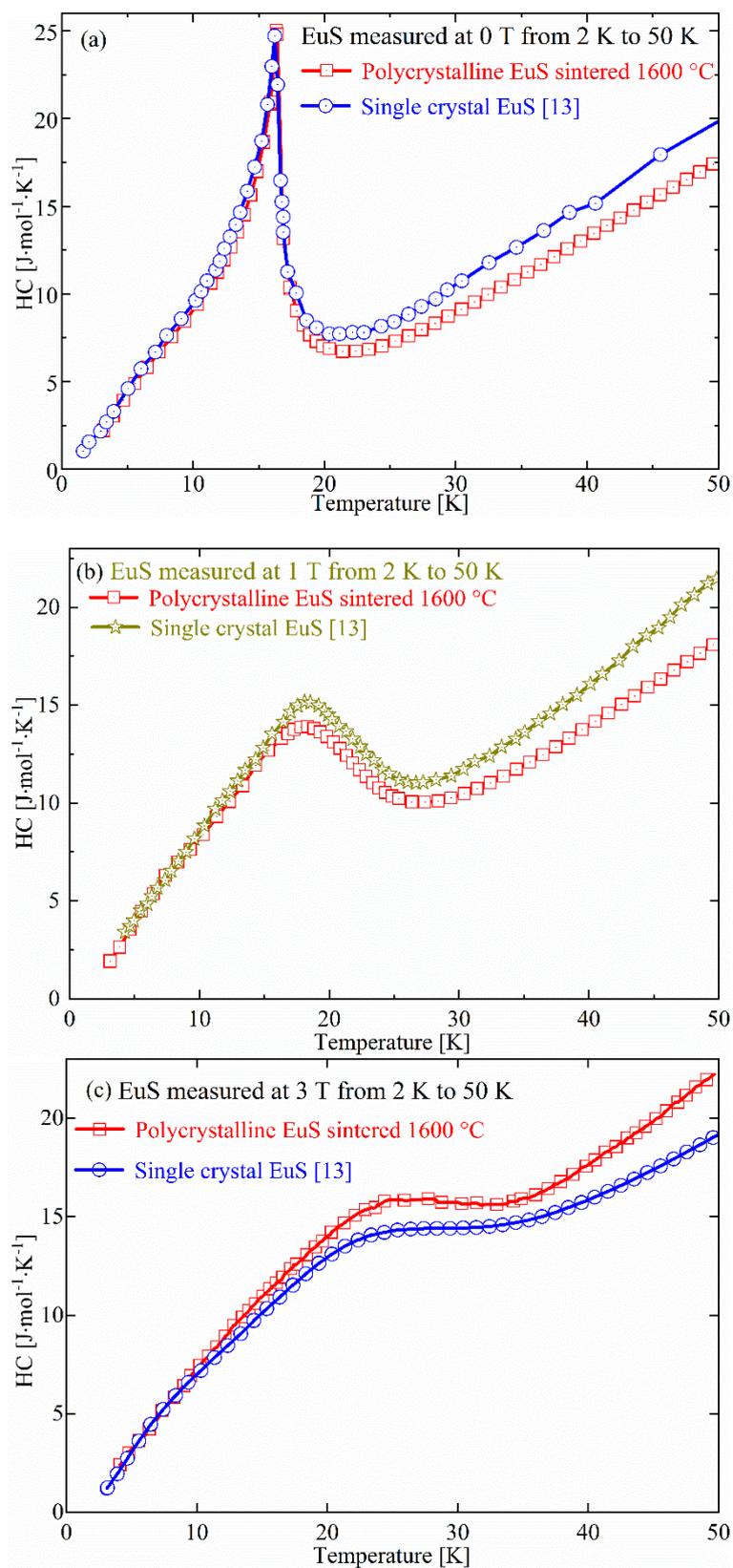
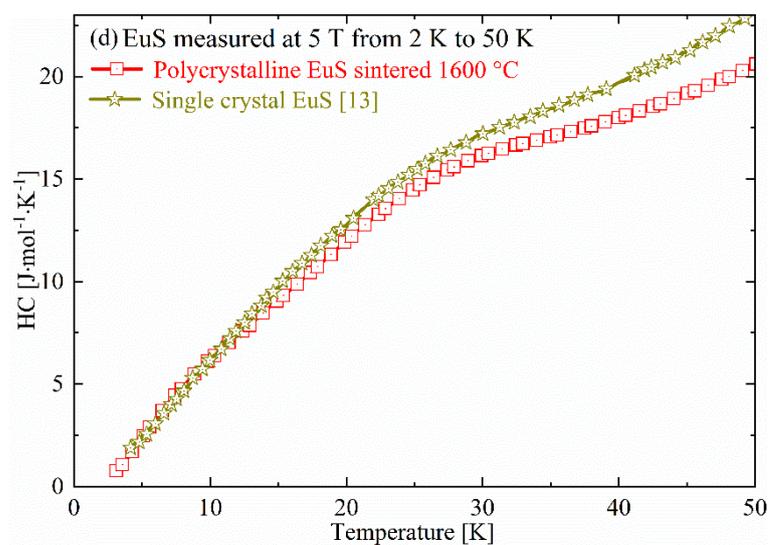


Figure S2. SEM images and EDS analysis of Yb doped EuS.





**Figure S3.** Comparison of heat capacity for polycrystalline and single crystal EuS under zero field (a); 1T (b); 3 T (c); and 5 T (d); the heat capacity data of single-crystal EuS [13] were added to compare the difference between single-crystal and polycrystalline EuS.