

# Supporting information for

## **Origin of efficient catalytic thermal decomposition of ammonium perchlorate over (2-1-10) facets of ZnO nanosheets: surface lattice oxygen**

*Haitao Li <sup>a,b</sup>, Kun Zhao <sup>a,c</sup>, Shouqin Tian <sup>d</sup>, Dawen Zeng <sup>a,b,\*</sup>, Aimin Pang <sup>e</sup>, Xiaoxia Wang <sup>a</sup>, Changsheng Xie <sup>a</sup>*

<sup>a</sup> State Key Laboratory of Materials Processing and Die & Mould Technology, Nanomaterials and Smart Sensors Research Lab (NSSRL), Department of Materials Science and Engineering, Huazhong University of Science and Technology (HUST), No. 1037, Luoyu Road, Wuhan 430074, People's Republic of China

<sup>b</sup> Hubei Collaborative Innovation Center for Advanced Organic Chemical Materials, Hubei University, Wuhan 430062, People's Republic of China

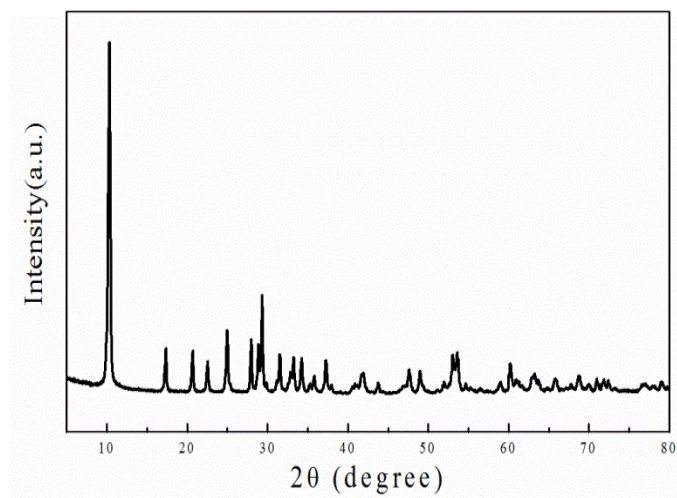
<sup>c</sup> College of Chemical Engineering and Food Science, Hubei Key Laboratory of Low Dimensional Optoelectronic Materials and Devices, Hubei University of Arts and Science, Xiang Yang 441053, People's Republic of China

<sup>d</sup> State Key Laboratory of Silicate Materials for Architectures, Wuhan University of Technology, No. 122, Luoshi Road, Wuhan 430070, PR China

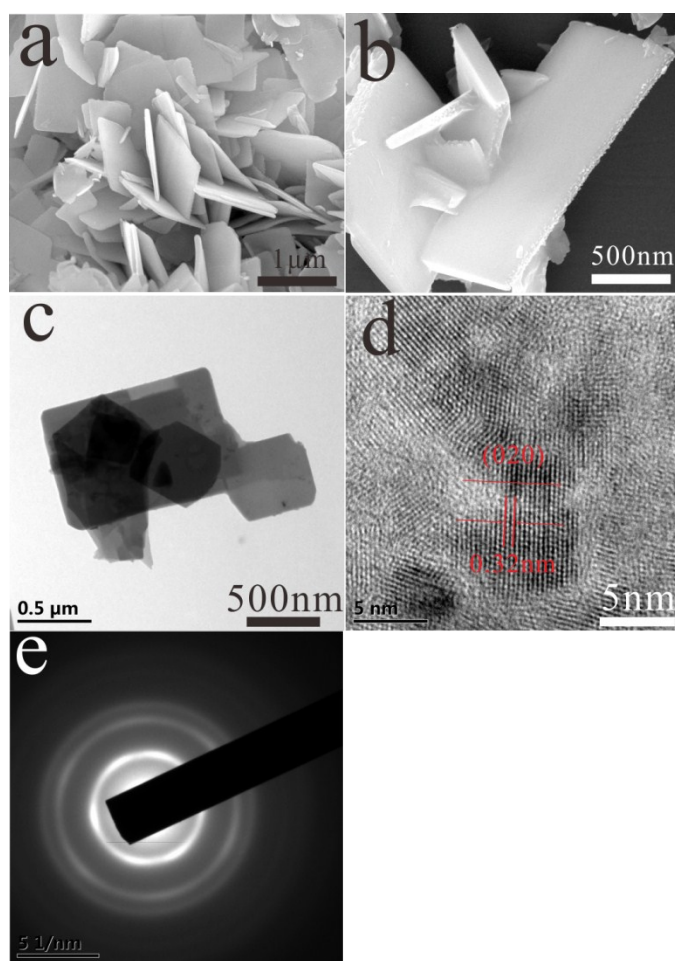
<sup>e</sup> Hubei Institute of Aerospace Chemotechnology, Xiangyang 441003, Hubei, People's Republic of China

Corresponding Author: \*E-mail address: dwzeng@mail.hust.edu.cn (D. Zeng).

**Catalyst characterizations:**



**Figure S1.** XRD pattern of precursor  $\text{ZnS(en)}_{0.5}$ .



**Figure S2.** (a) Low- and (b) high-magnification SEM images, (c) TEM and (d) HRTEM images, (e) SAED pattern of  $\text{ZnS(en)}_{0.5}$  precursor.