## CdS nanoparticles grown in situ on oxygen deficiency-rich $WO_{3-x}$ nanosheets: direct Z-Scheme heterojunction towards enhancing visible light-driven hydrogen evolution

Qi Ran, <sup>1, a</sup> Tao zhong, <sup>1, a</sup> Fengyuan Li,<sup>a</sup> Zebin Yu,<sup>\*,a</sup> Yanping Hou,<sup>a</sup> Lun Qian,<sup>a</sup> Jun Huang,<sup>b</sup> Ronghua Jiang,<sup>c</sup> Heqing Zhang,<sup>a</sup> and Qianqian Sun<sup>a</sup>

<sup>a</sup> School of Resources, Environment and Materials, Guangxi University, Nanning 530004, PR China

<sup>b</sup> College of Civil Engineering, Guangxi University, Nanning 530004, PR China

<sup>c</sup> School of Chemical and Environmental Engineering, Shaoguan University, Shaoguan 512005,

PR China

<sup>1</sup> Joint first authors

\*Corresponding author: Tel.: + 8613877108420;

E-mail: xxzx7514@hotmail.com (Z. Yu)

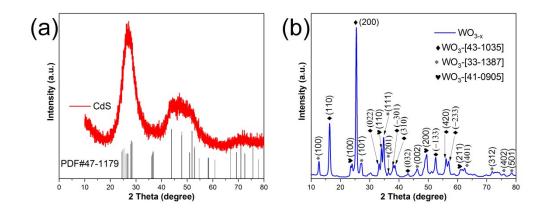


Fig. S1. XRD patterns of (a) CdS and (b) WO<sub>3-x</sub>.