## **Supporting Information**

## Light-driven charge storage enhancement in NiSSe nanoparticles for high-performance photo-supercapacitors

Kamran Shahzad, <sup>abc</sup> Muhammad Arif, <sup>c</sup> Hafiz Zahid Shafi, \*<sup>b</sup>

Muhammad Rahim, <sup>a</sup> and Ting Zhu \*<sup>c</sup>

- <sup>a</sup> Department of Physics, Faculty of Sciences, International Islamic University
  Islamabad, 44000, Pakistan
- <sup>b</sup> National Institute of Lasers and Optronics College, Pakistan Institute of Engineering and Applied Sciences, Nilore, Islamabad 45650, Pakistan
- <sup>c</sup> School of Physics and Electronic Information, Yunnan Normal University, 768, Juxian Street, Kunming 650500, Yunnan, China

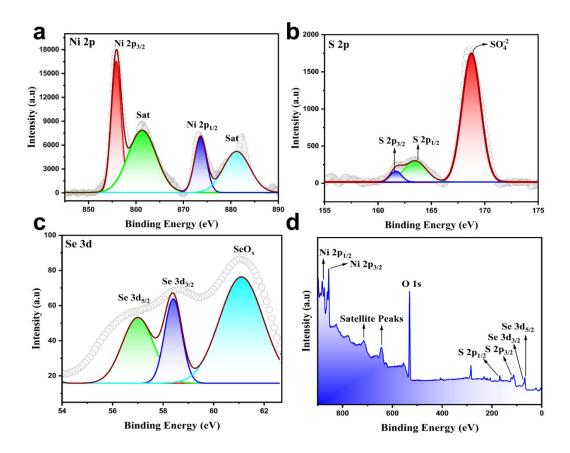
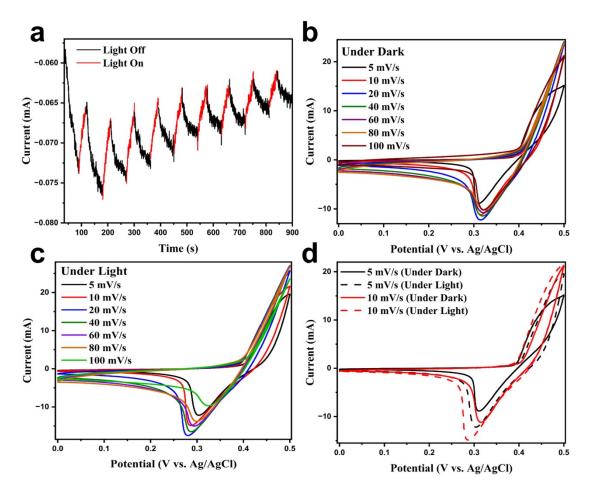


Fig. S1. XPS spectra of (a) Ni 2p, (b) S 2p, (c) Se 3d, and (d) XPS overview.



**Fig. S2.** (a) Photocurrent delivered under light on and off with time intervals of 20 s, CV curves obtained (b) under dark and (c) under light, and (d) comparison of CV curves under light and dark at scan rates of 5 and 10 mV s<sup>-1</sup>, respectively.