Supplementary Information (SI) for Journal of Materials Chemistry C. This journal is © The Royal Society of Chemistry 2024

## **Supplementary Information**

## Highly stable nickel metal-modified black phosphorus-based photodetectors with enhanced magnetic field-assisted photoresponse

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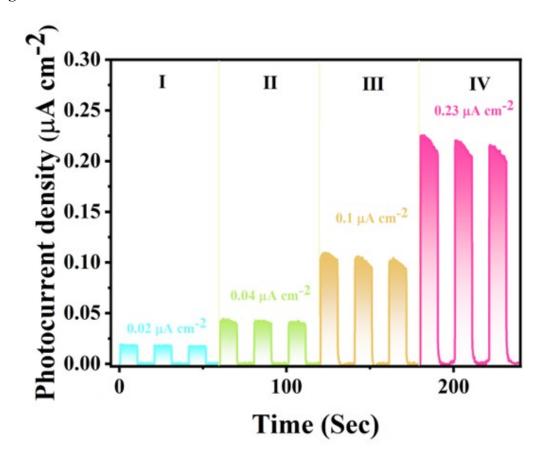
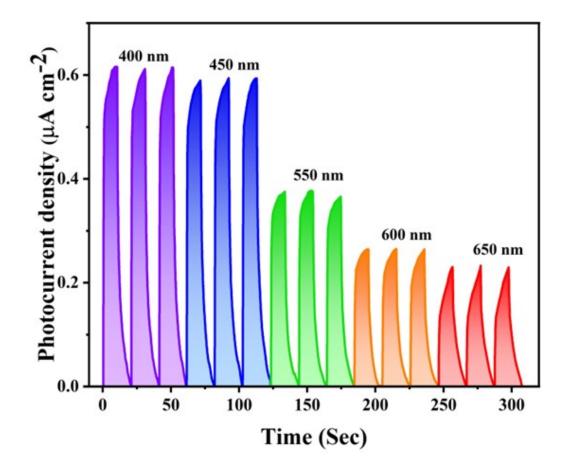
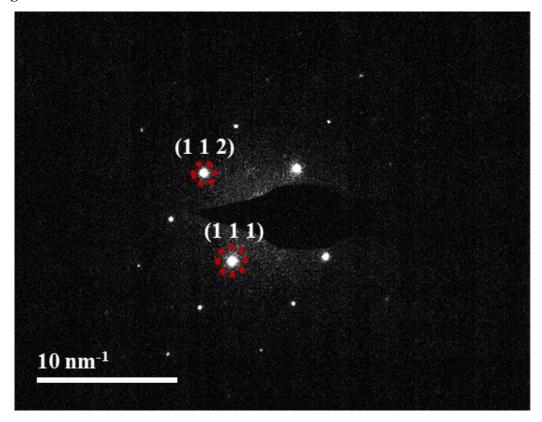


Figure S1. Figure of optical on/off behavior of sole BP nanosheets at 0-0.6 V.

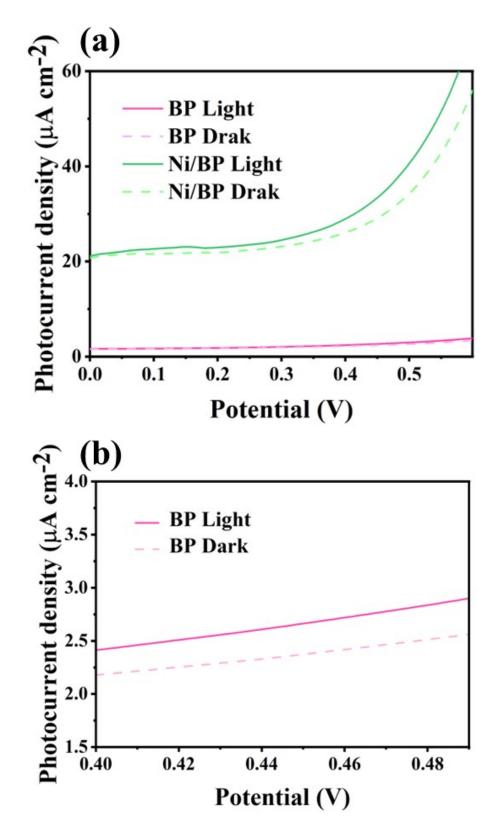


**Figure S2.** Light on/off behavior of Ni/BP at different wavelengths with a light intensity of 50 mW/cm<sup>2</sup>.

Figure S3



**Figure S3.** The SAED image of BP nanosheets.



**Figure S5.** (a-b) Linear cyclic voltammograms (LSV) of bare BP nanosheets and Ni/BP in light and dark conditions.

Figure S5

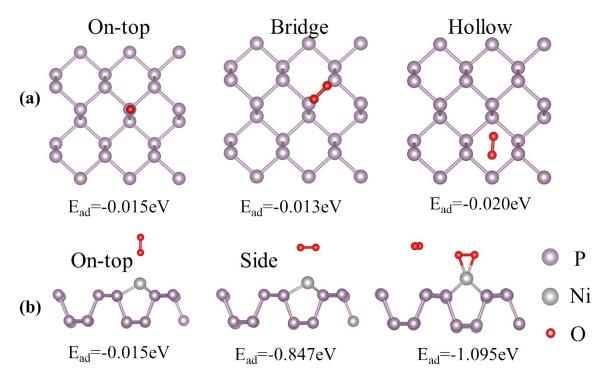


Figure S6. adsorption sites and adsorption energies on (a) BP and (b) Ni/BP.

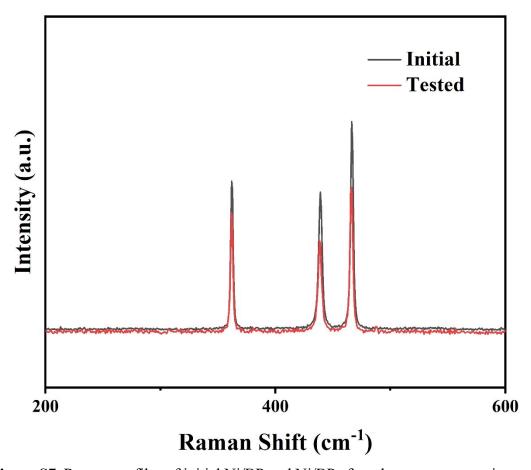


Figure S7. Raman profiles of initial Ni/BP and Ni/BP after photoresponse testing.