## Tri-layered Si/Co<sub>3</sub>O<sub>4</sub>/ZnO heterojunction for high-performance visible photodetection

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**Fig. S1**. Optical properties of the  $Co_3O_4$  deposited on glass substrate. a) Transmittance spectrum versus wavelength and (b)  $(\alpha h v)^2$  versus incident photon energy plot. Optical band gaps were determined via the linear extrapolation in Tauc method.