Supporting Information:

Article

High-Performance Self-Powered Ultraviolet Photodetector Based on Nano-Porous GaN and CoPc $p$–$n$ Vertical Heterojunction

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Received: 31 July 2019; Accepted: 21 August 2019; Published: date

Figure S1. The chemical structure of CoPc.

Figure S2. SEM images of pure flat-GaN.
**Figure S3.** Time-dependent on/off switching of the device at day one and after 3 months under 365 nm light illumination, the light intensity is 0.009 mW/cm² and bias potential is 0 V.

**Figure S4.** (a) Schematic of a PD device based on CoPc/flat-GaN p-n vertical heterojunction. (b) I-V curves of the PD under 365 nm light with different power density illumination. (c) Time-dependent on/off switching of the device under 365 nm light illumination, the light intensity is 1.4 mW/cm² and bias potential is 0 V. (d) The enlarged portion of one response and the recovery process.