

Supplementary information

High-responsivity β -Ga₂O₃/GaN heterojunction UV photodetector with tunable multi-band detection capability

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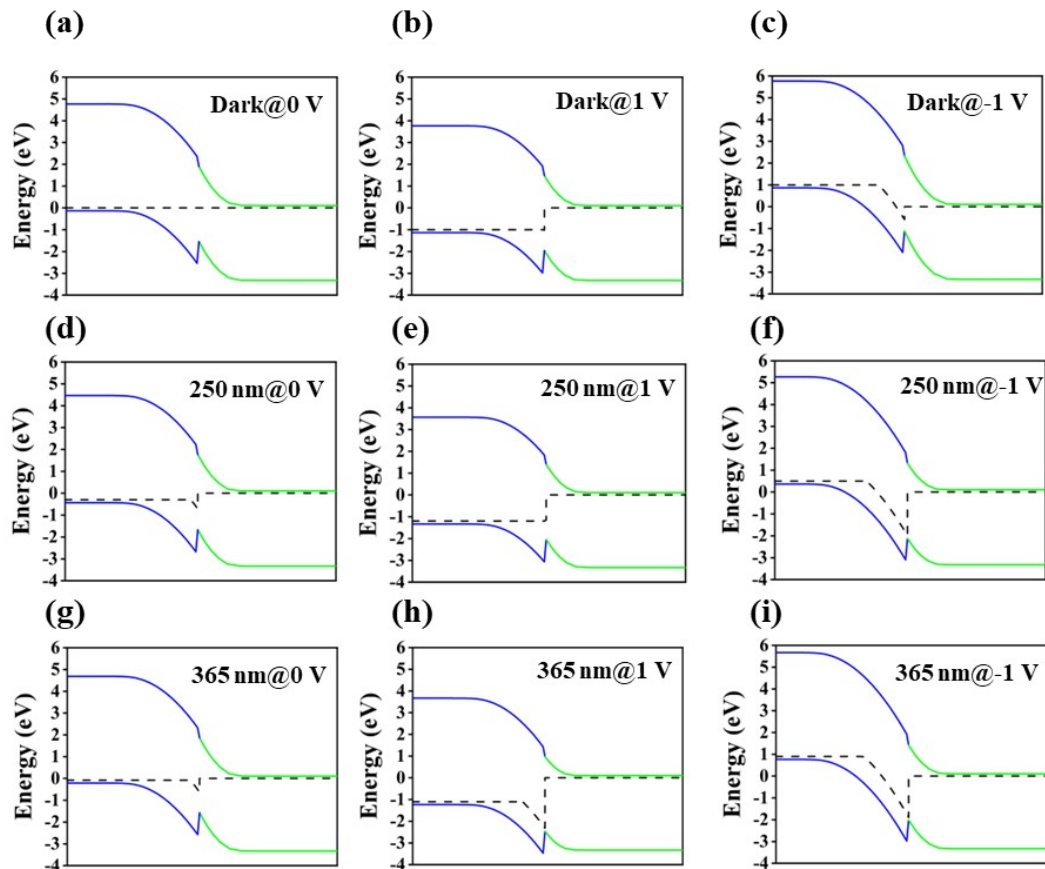


Fig. S1. Simulated energy band structures under dark conditions (after contact) at (a) 0 V, (b) 1 V and (c) -1 V. Under 250 nm illumination conditions (after contact) at (d) 0 V, (e) 1 V and (f) -1 V. Under 365 nm illumination conditions (after contact) at (g) 0 V, (h) 1 V and (i) -1 V.

It depicts the variations in the energy band structure of the β -Ga₂O₃/GaN heterojunction under different biases and illumination. Simulation results show that the direction of the bias voltage applied to the device affects the heterojunction energy band structure differently: a forward bias voltage decreases the energy levels of β -Ga₂O₃, and vice versa. When the device is under UV illumination, the energy level difference between β -Ga₂O₃ and GaN decreases.