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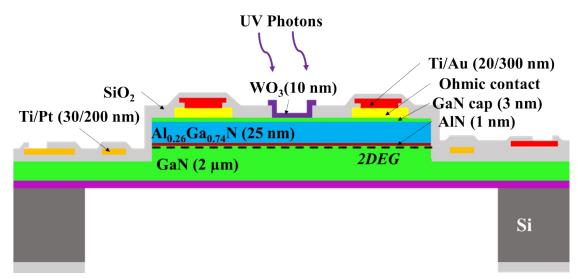


Figure S1 The cross-section schematic drawing of the detector.

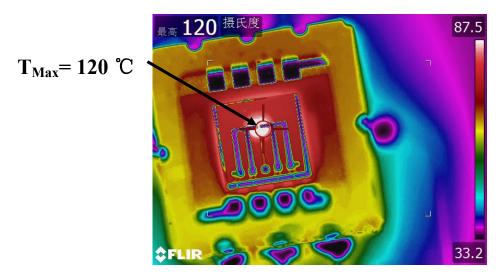
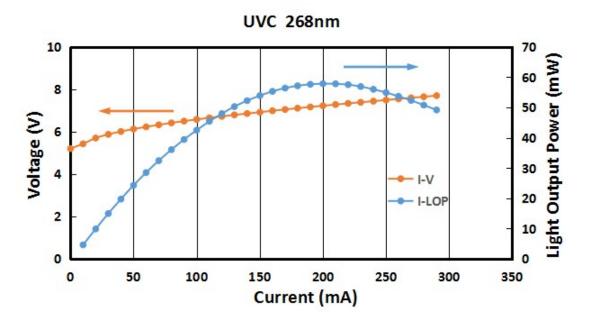


Figure S2 The thermal distribution of the detector surface when V_H =3.7 V.



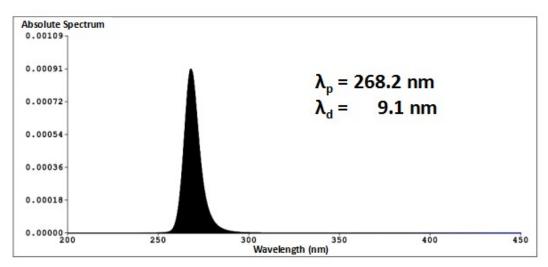
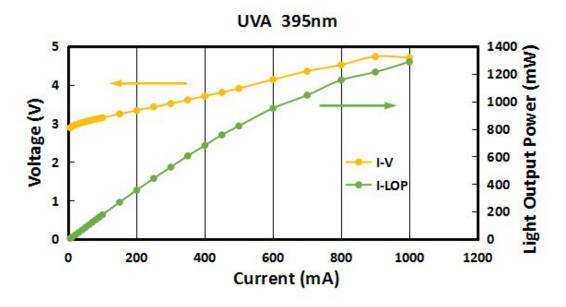


Figure S3 UVC light source: I-V, I-LOP curve and light spectrum.



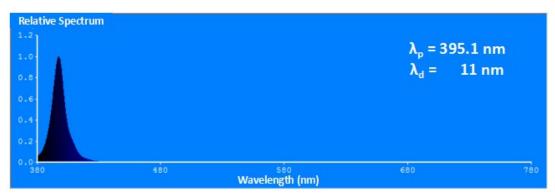


Figure S4 UVA light source: I-V, I-LOP curve and light spectrum.

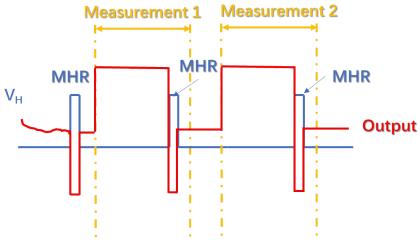


Figure S5 An example illuminates the MHR process before and in measurement.