Supporting Information

Self-powered Infrared Detection Using a Graphene Oxide Film

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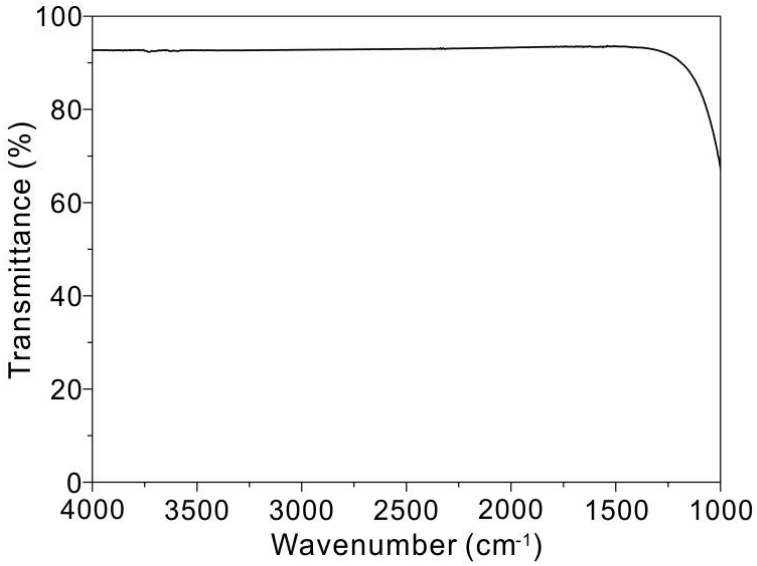

Fig. S1. FTIR transmittance spectrum of the CaF_2 window.

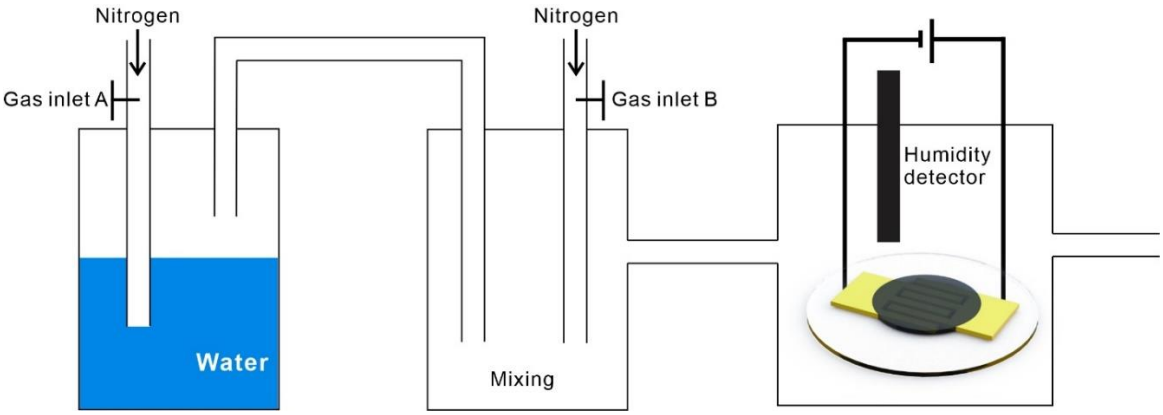

Fig. S2. Schematic of experimental set-up for preparing the g-GOF.

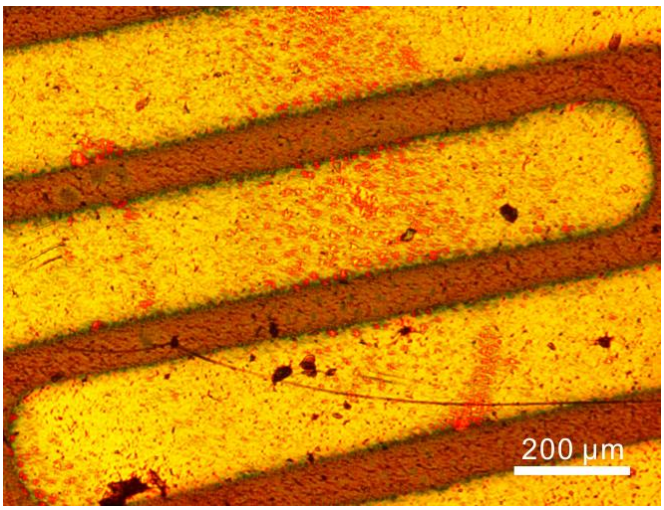

Fig. S3. Optical image of interdigitated Au electrodes (bright yellow) covered with a GOF.

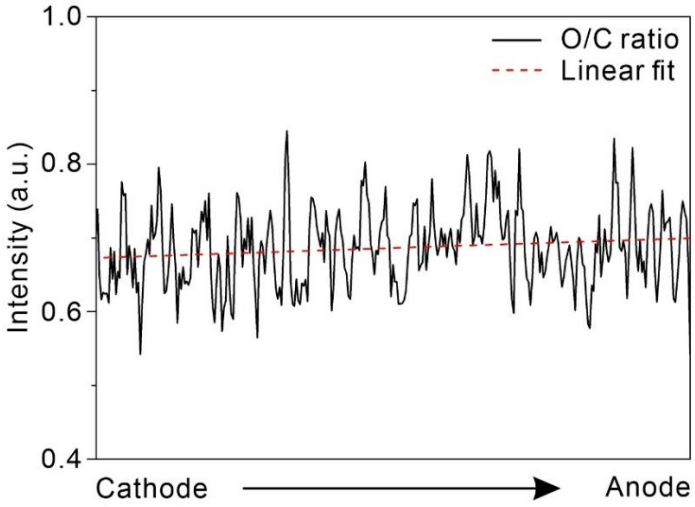

Fig. S4. Line scan EDS spectra of O/C atomic ratio of the GOF between two Au electrodes.

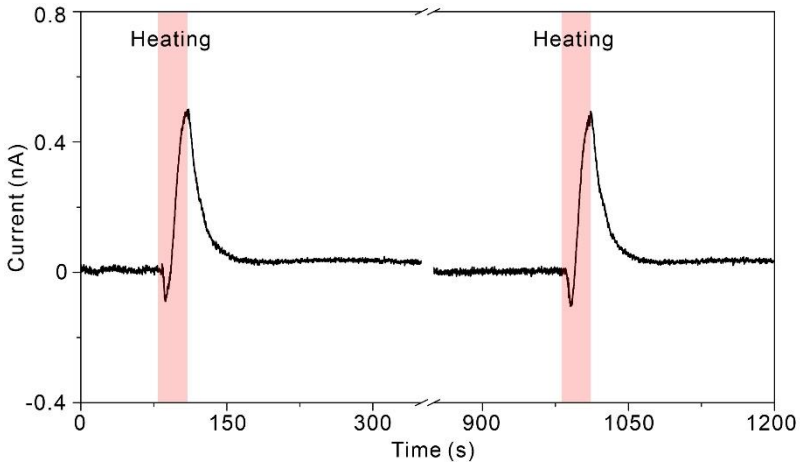

Fig. S5. Electric response of the device to a resistance heater.

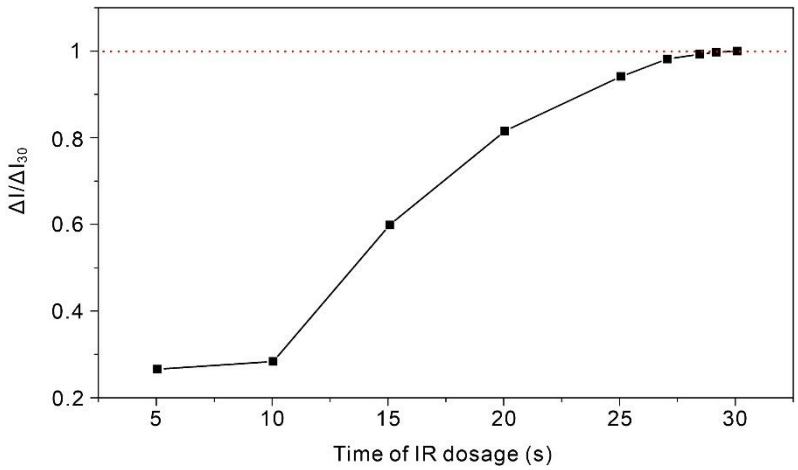

Fig. S6. Relative current change vs time of IR dosage. ΔI_{30} is the current change corresponding to 30-s IR dosage.

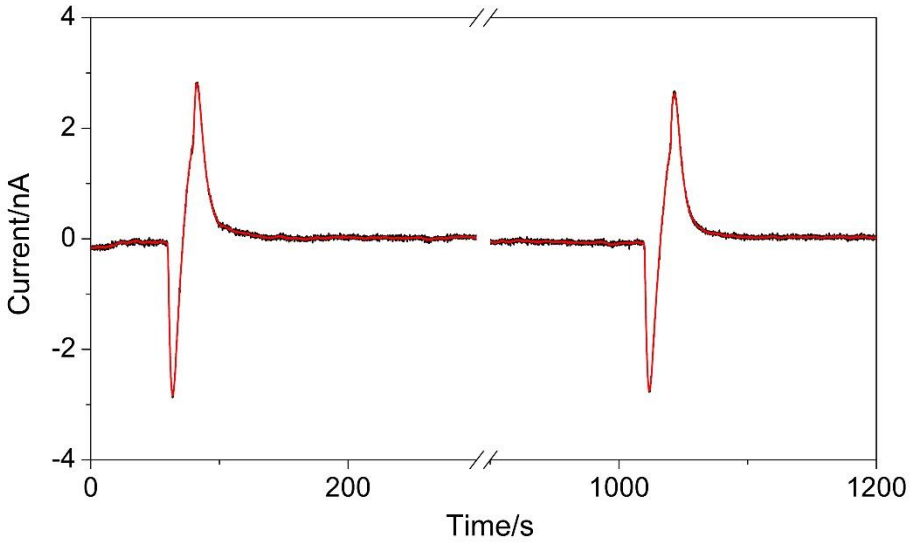

Fig. S7. Noise reduction of the electric response of the g-GOF under water vapor to IR using the adjacent-averaging method. The black line and red line are the original current and the current after noise reduction using the adjacent-averaging method with a moving average of 5 points, respectively.

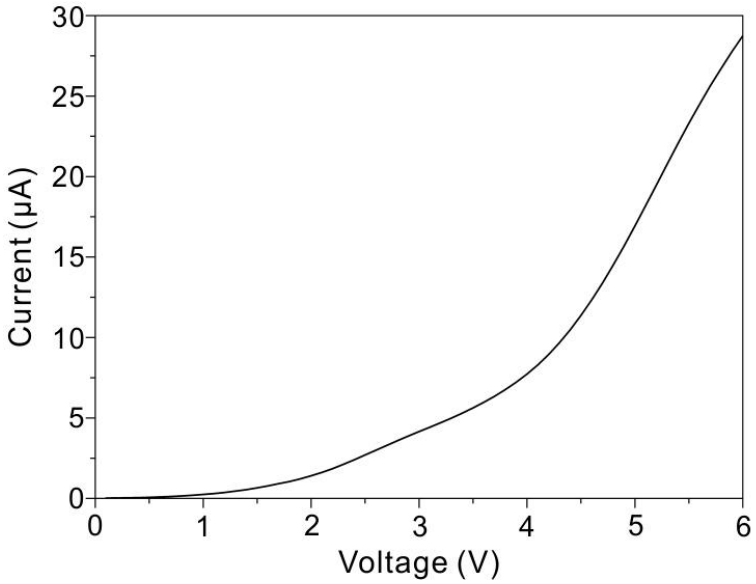

Fig. S8. I-V curve of the GOF under a RH of ~83%.

Table S1. Performance of IR detectors reported in literature

Literature	Current responsivity (nA/W)	Response wavelength (μm)
This work	1500	1.5 - 7
[33]	88.5	1.064
[34]	78	9.26
[35]	≈400	1.3

[33] H. Fang, C. Xu, J. Ding, Q. Li, J.-L. Sun, J.-Y. Dai, T.-L. Ren and Q. Yan, *ACS Appl. Mater. Interfaces*, 2016, **8**, 32934-32939.
[34] M. Badioli, A. Woessner, K.-J. Tielrooij, S. Nanot, G. Navickaite, T. Stauber, F. García de Abajo and F. H. Koppens, *Nano Lett.*, 2014, **14**, 6374-6381.
[35] B. Pradhan, K. Setyowati, H. Liu, D. H. Waldeck and J. Chen, *Nano Lett.*, 2008, **8**, 1142-1146.