

Supporting Information

Room temperature DMMP gas sensing based on cobalt phthalocyanine derivative/graphene quantum dot hybrid materials

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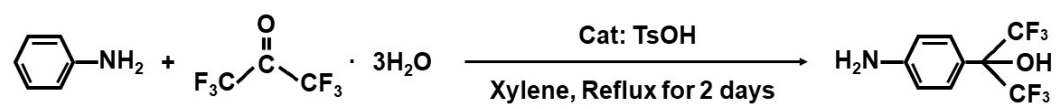


Figure S1. The synthesis route for P-aminophenyl hexafluoroisopropanol (HFIPA).

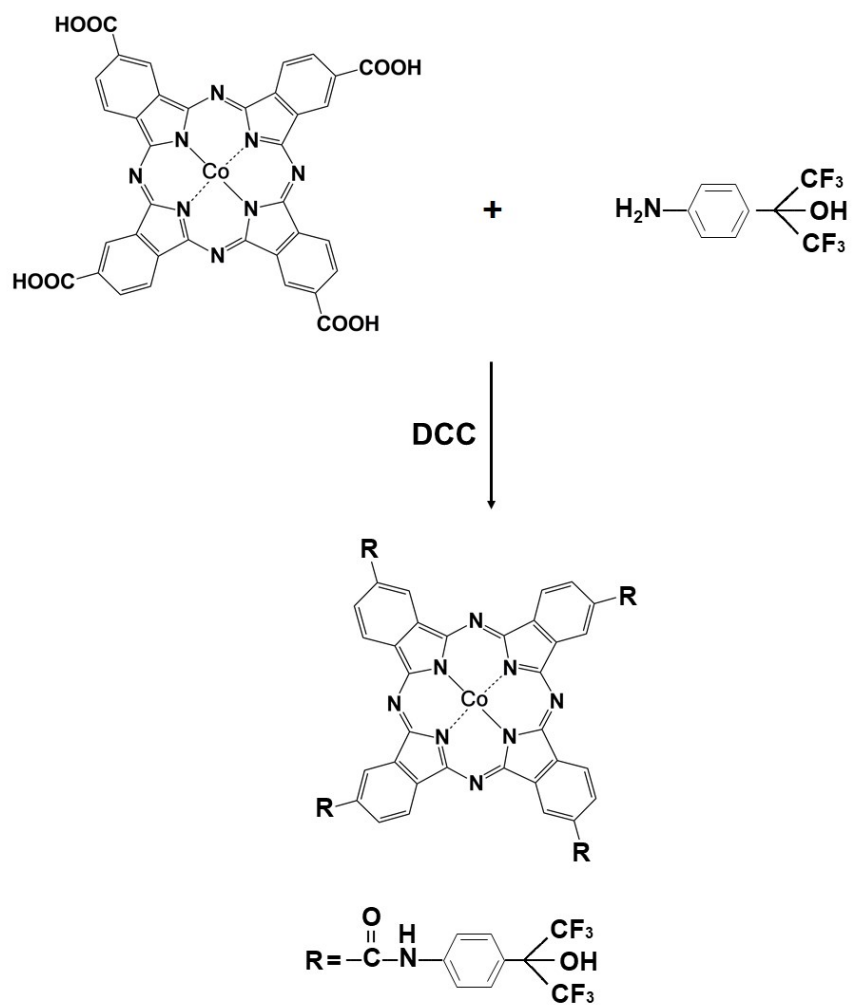


Figure S2. The outline of the synthesis of CoPc-HFIP.

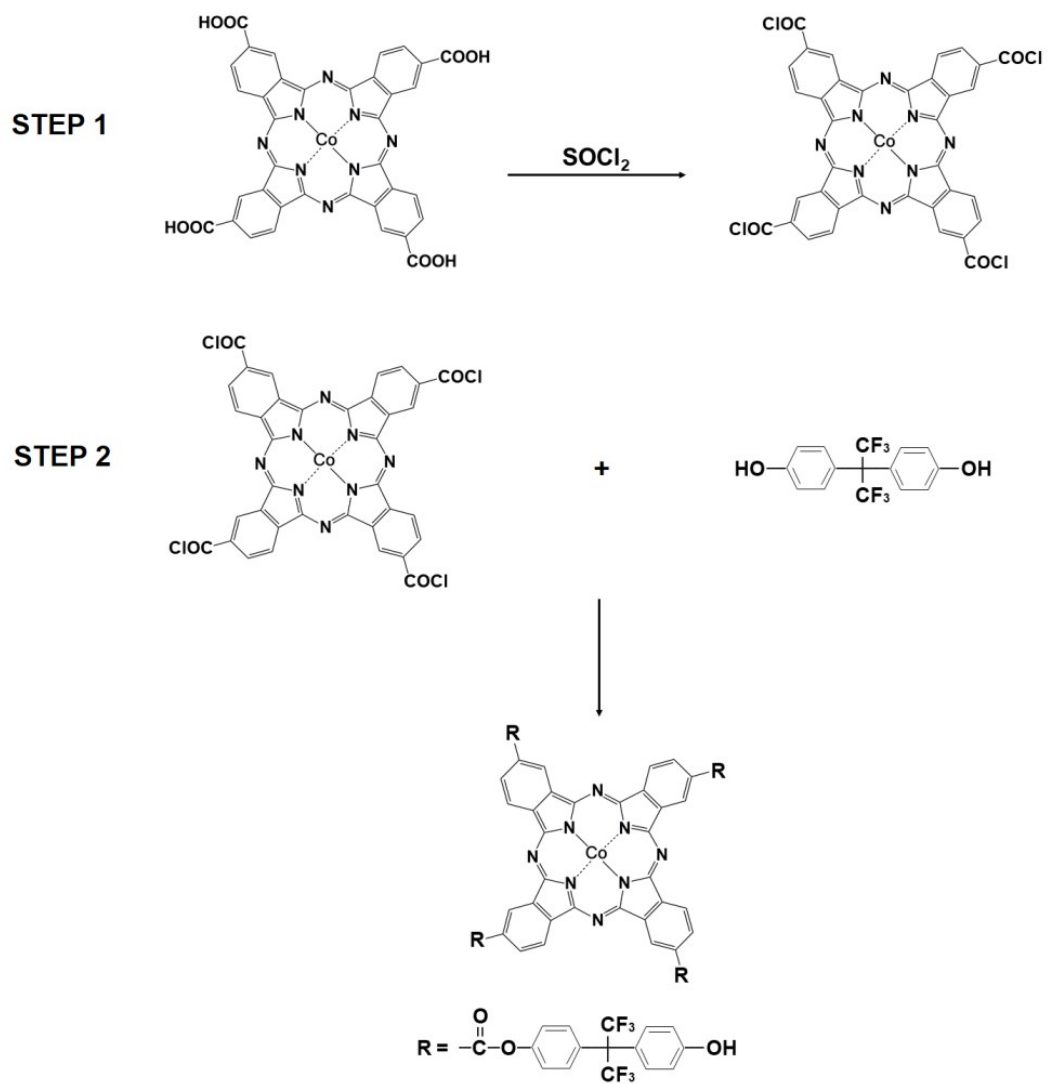


Figure S3. The outline of the synthesis of CoPc-6FBPA.

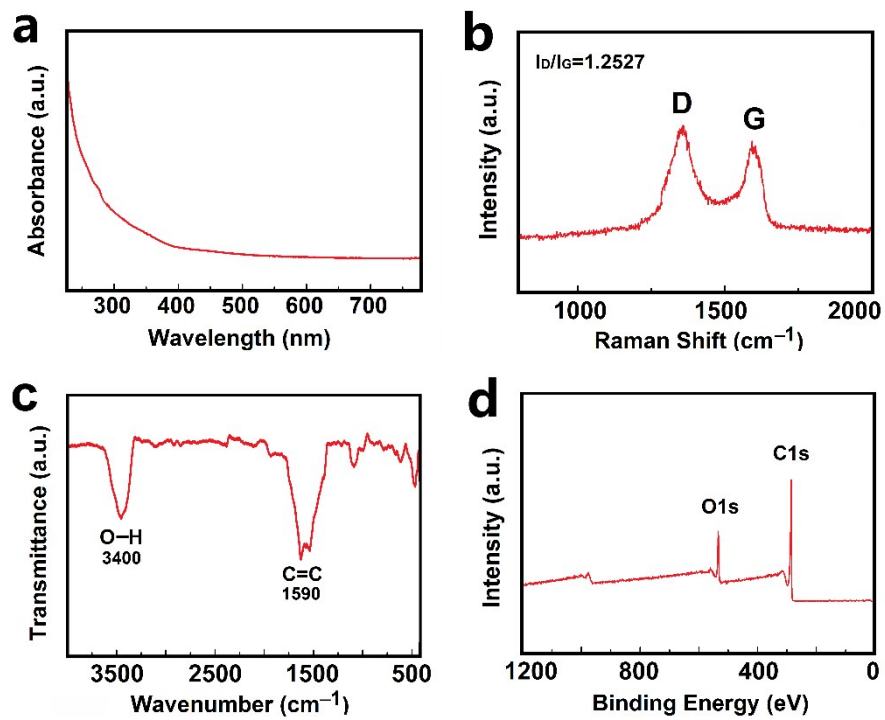


Figure S4. (a) The UV-Vis absorption spectrum, (b) Raman spectrum, (c) FT-IR spectrum (d) XPS

survey scan spectrum of GQDs.

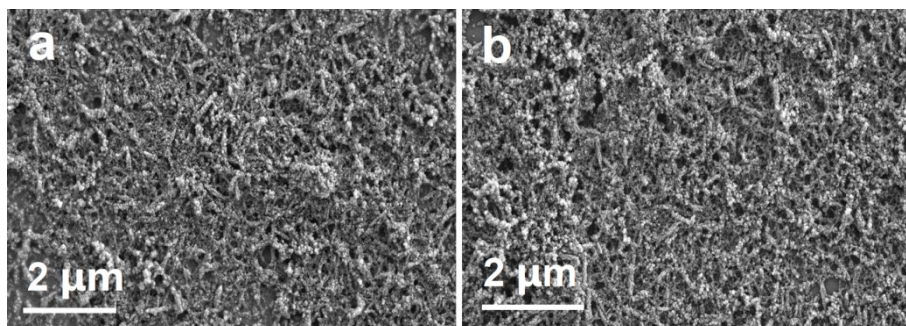


Figure S5. SEM images of (a) CoPc-HFIP and (b) CoPc-6FBPA.

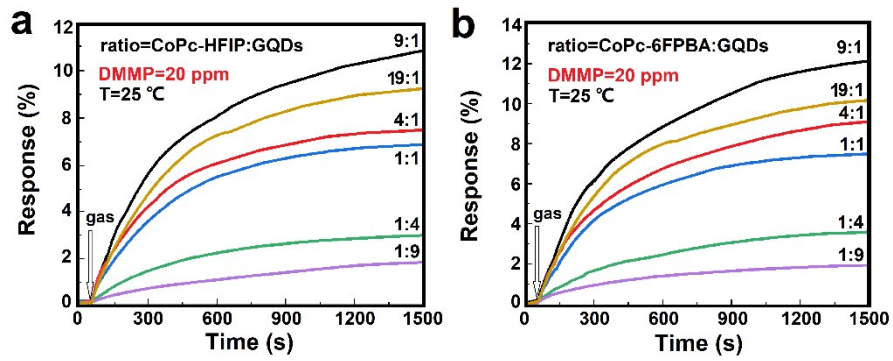


Figure S6. The comparison of response curves of hybrid materials of (a) CoPc–HFIP or (b) CoPc–6FPBA mixed with GQDs in different proportions to 20 ppm DMMP gas at room temperature.

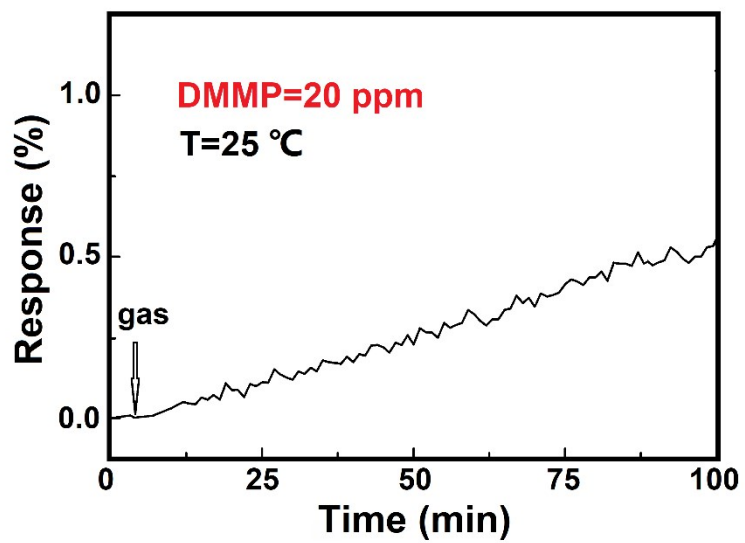


Figure S7. The response curve of GQDs towards 20 ppm DMMP gas at room temperature.

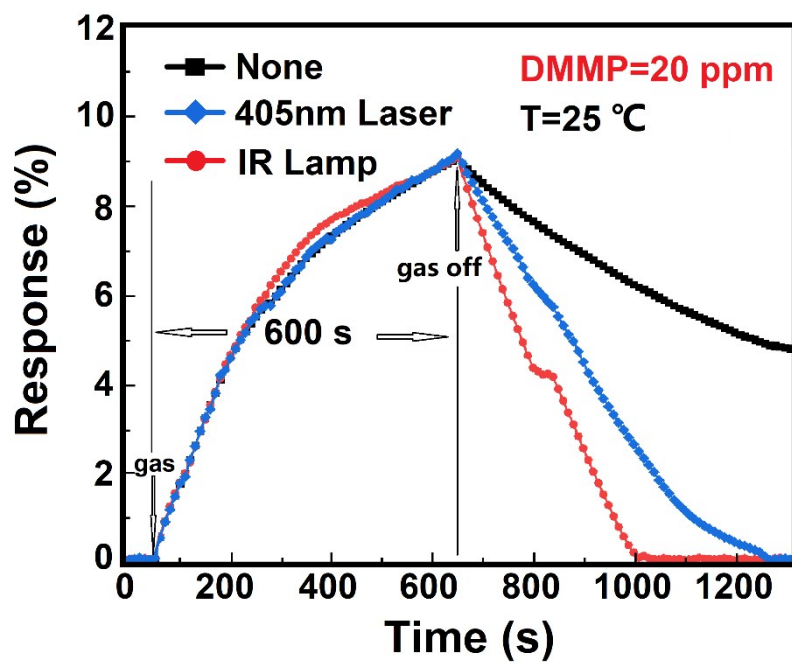


Figure S8. The response and recovery curves of CoPc-6FBPA-GQD to 20 ppm DMMP gas at room temperature with different recovery methods.

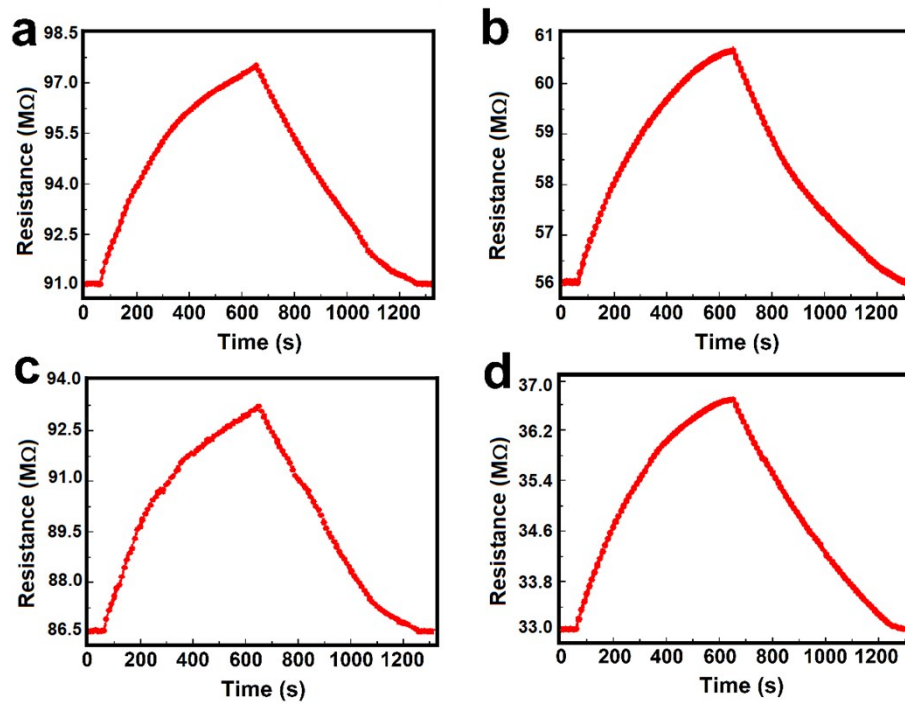


Figure S9. The resistance curves of (a) CoPc-HFIP, (b) CoPc-HFIP-GQD, (c) CoPc-6FBPA and (d) CoPc-6FBPA-GQD to 20 ppm DMMP gas at room temperature with laser-assisted recovery.