

Supplementary Information

Assembly with Copper (II) Ion and D- π -A Molecule on Graphene Surface for Ultra-fast Acetic Acid Sensing at Room Temperature

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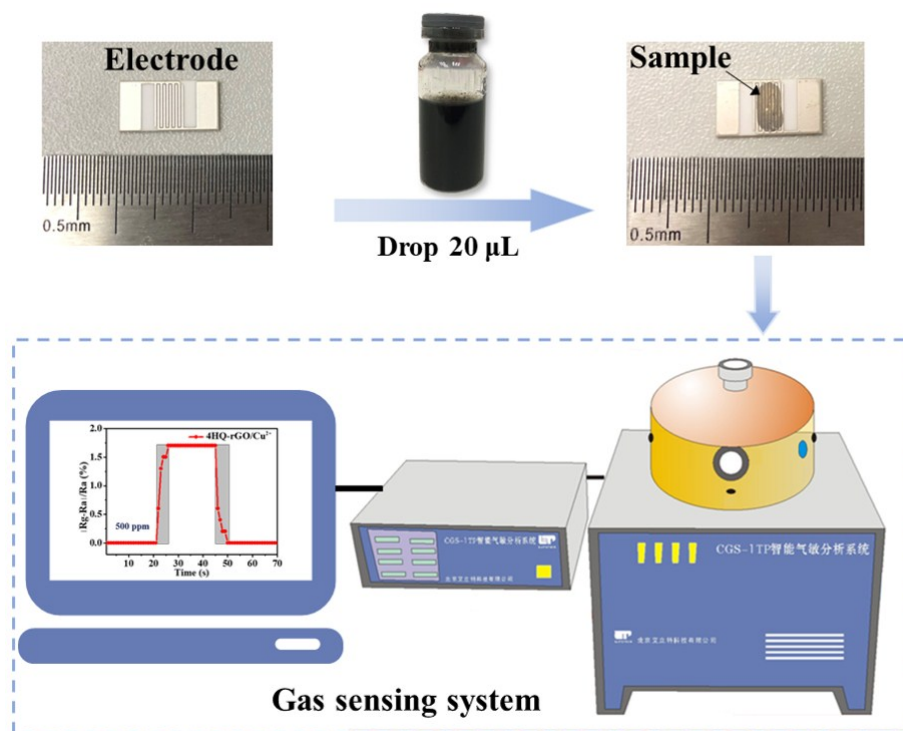


Figure S1. A schematic of gas sensing measurement.

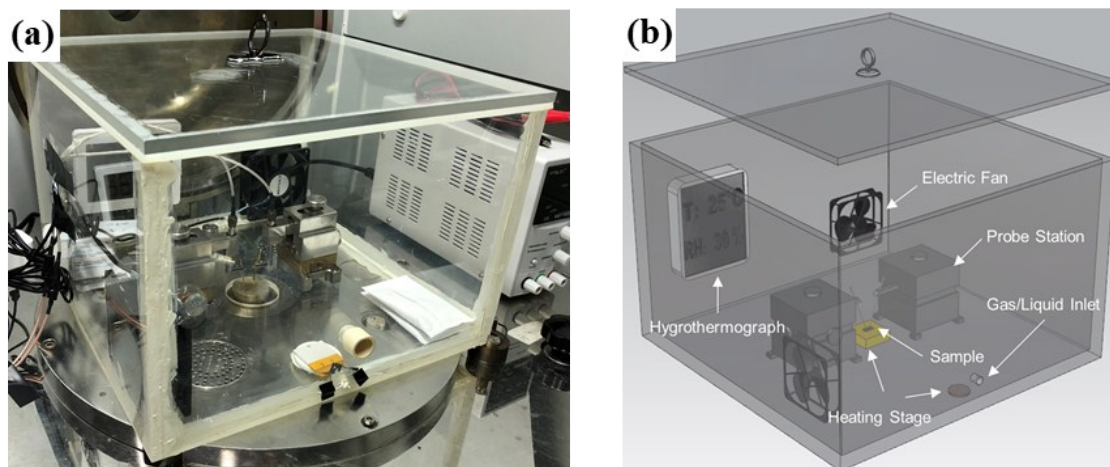


Figure S2. (a) Digital photograph &(b) schematic of an improved gas sensing measurement chamber.

As shown in Figure S2, in order to further precisely control the humidity inside the measurement chamber, we have decorated the gas sensitivity testing chamber by adding humidity-controlled devices. Controlling the humidity in the chamber can be

achieved by adding desiccant or water. The value of real-time humidity can be read by the hygrometer in the chamber. The volume of the chamber is 17 liters. For each sample, we performed gas sensitivity tests at least three times. For each test, we changed different humidity conditions (RH=30%, 50%, 80%) to get the stable response (response changed within 5%).

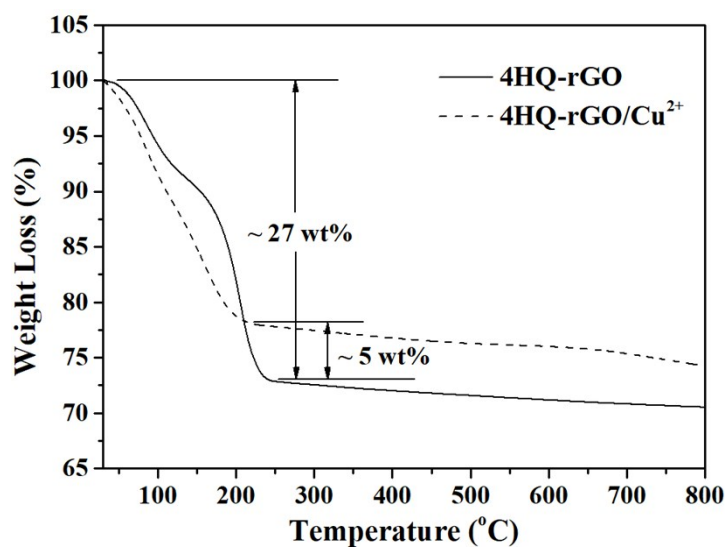


Figure S3. TGA curves of 4HQ/rGO and 4HQ-rGO/Cu²⁺ composites.

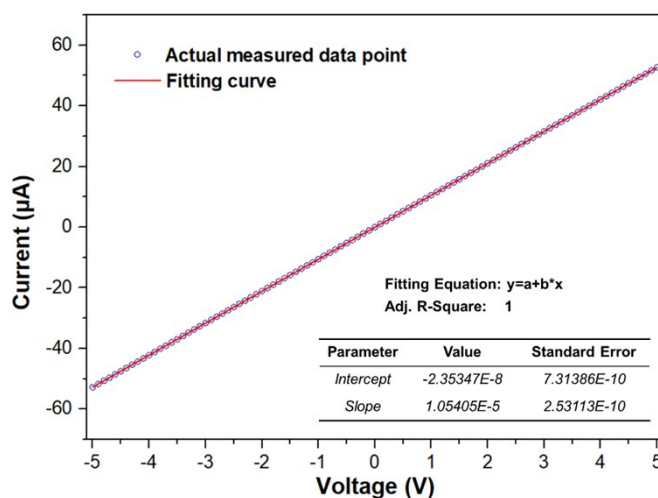


Figure S4. $I-V$ characteristics of the 4HQ-rGO/Cu²⁺ based sensors.

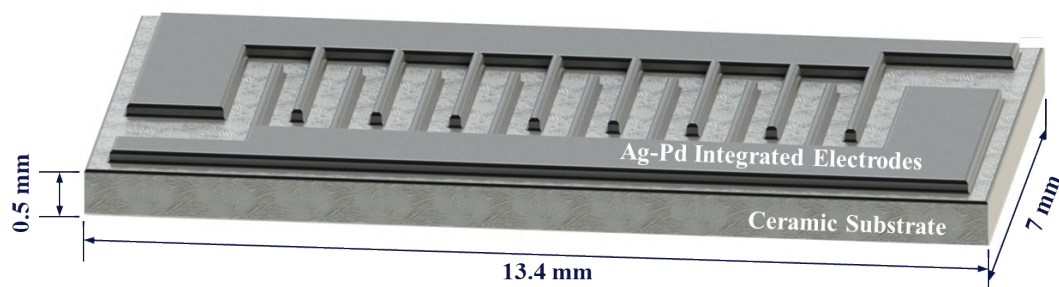


Figure S5. Schematic diagram of interdigital electrode.

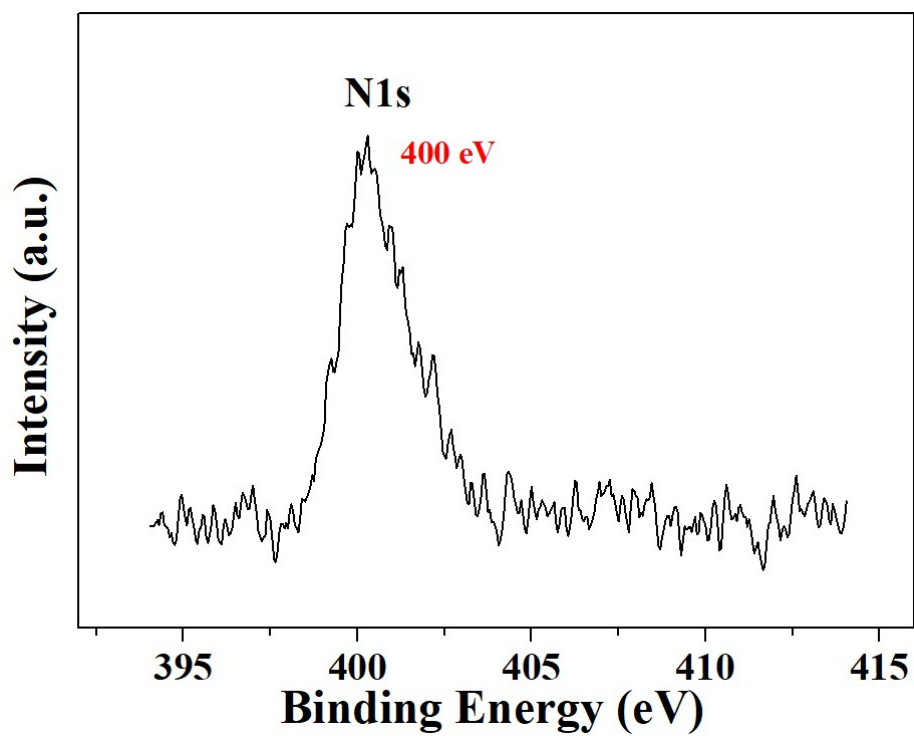


Figure S6. Typical XPS survey scan spectrum of N1s of 4HQ-rGO/Cu²⁺.