

# Supplemental information of

Upcycled graphene oxide nanosheet for reversible room temperature

NO<sub>2</sub> gas sensor.

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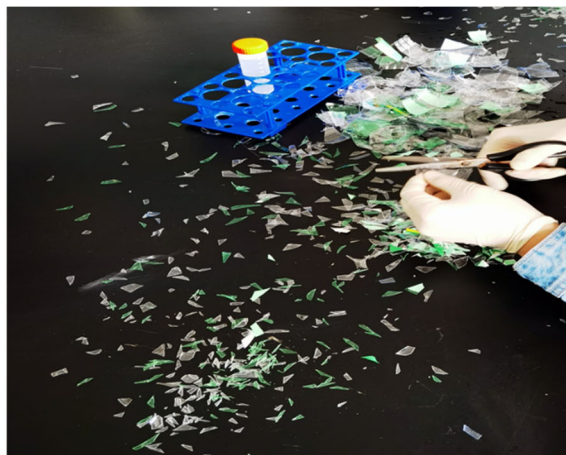


Figure S1: Plastic beverage bottles made of PET material are acquired, the hard parts at both ends are removed, and the thin middle section is cut into pieces.

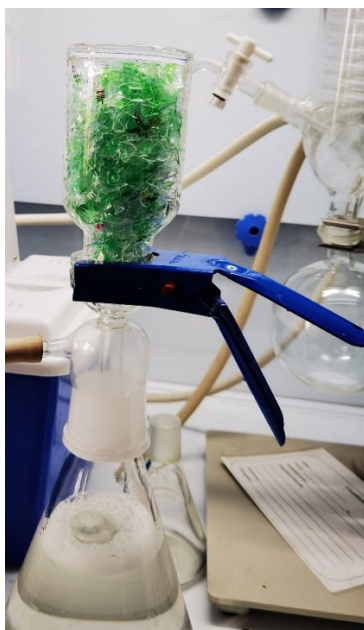


Figure S2: Plastic fragments are vacuum dried after chemical treatment.



Figure S3: Graphene oxide black powder obtain after thermal treatments.

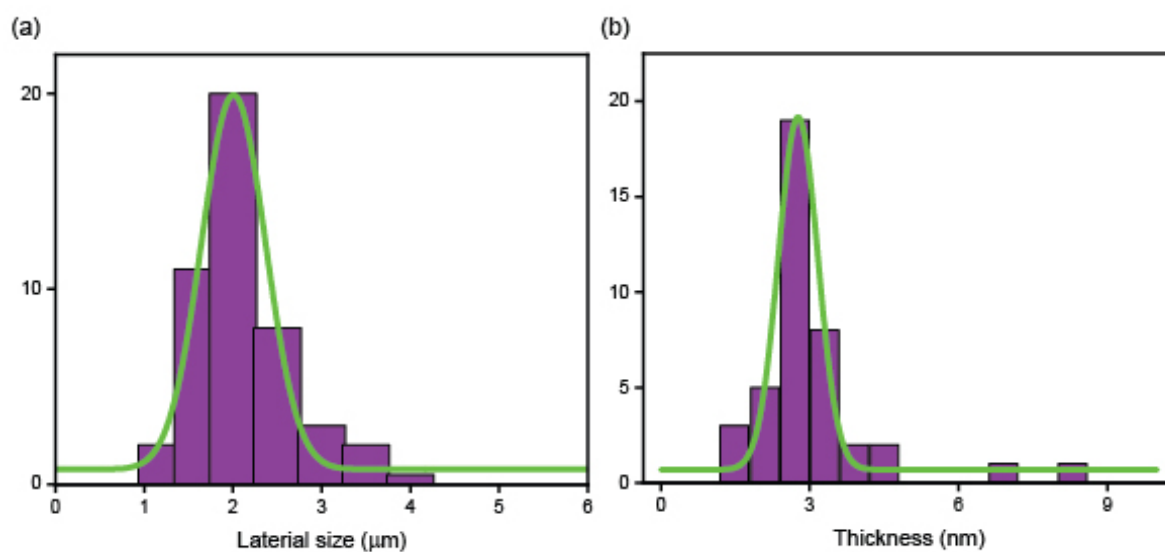


Figure S4: The statistical distribution of the lateral dimension (a) and thickness (b), in which the thickness distribution has a peak at  $\sim 3$  nm and the lateral size is mainly ranging between 1.8 to 2.3  $\mu\text{m}$ .

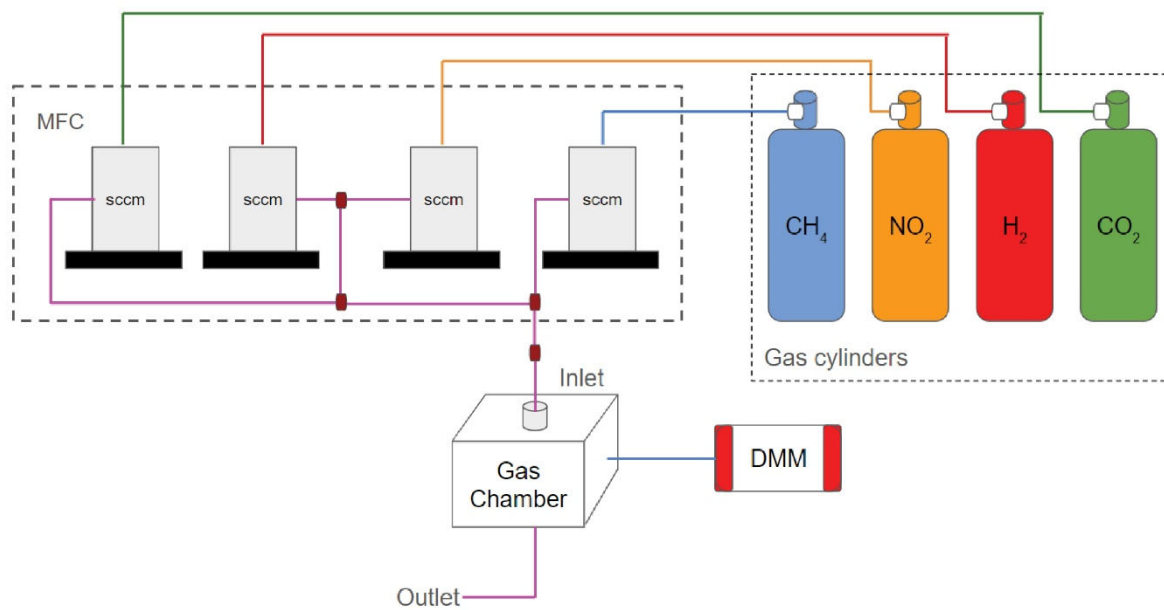


Figure S5: Gas sensing platform used for room temperature gas sensing experiment.