

## †Electronic Supplementary Information (ESI)

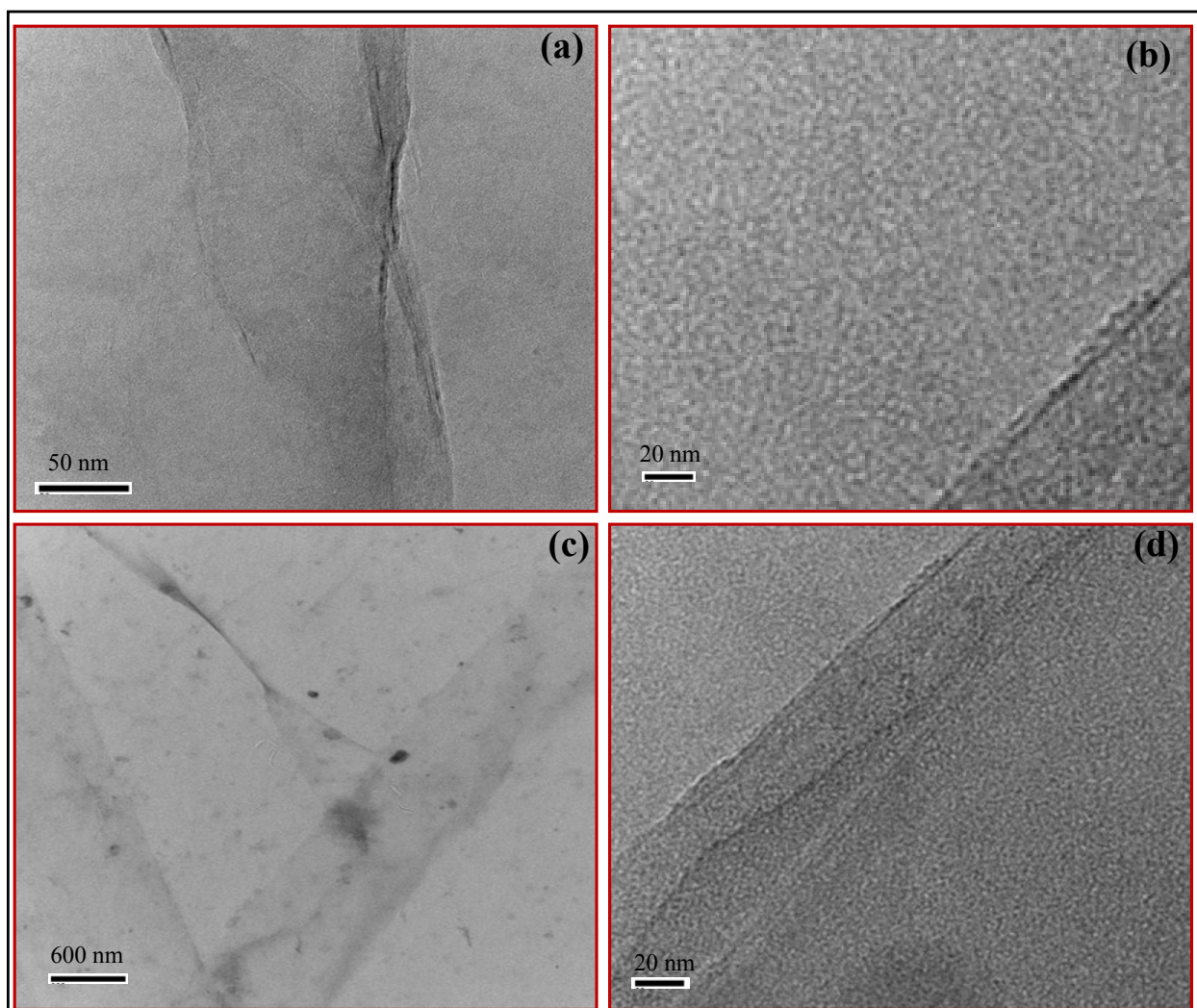
### Nitrogen doped high quality CVD grown graphene as a fast responding NO<sub>2</sub> gas sensor

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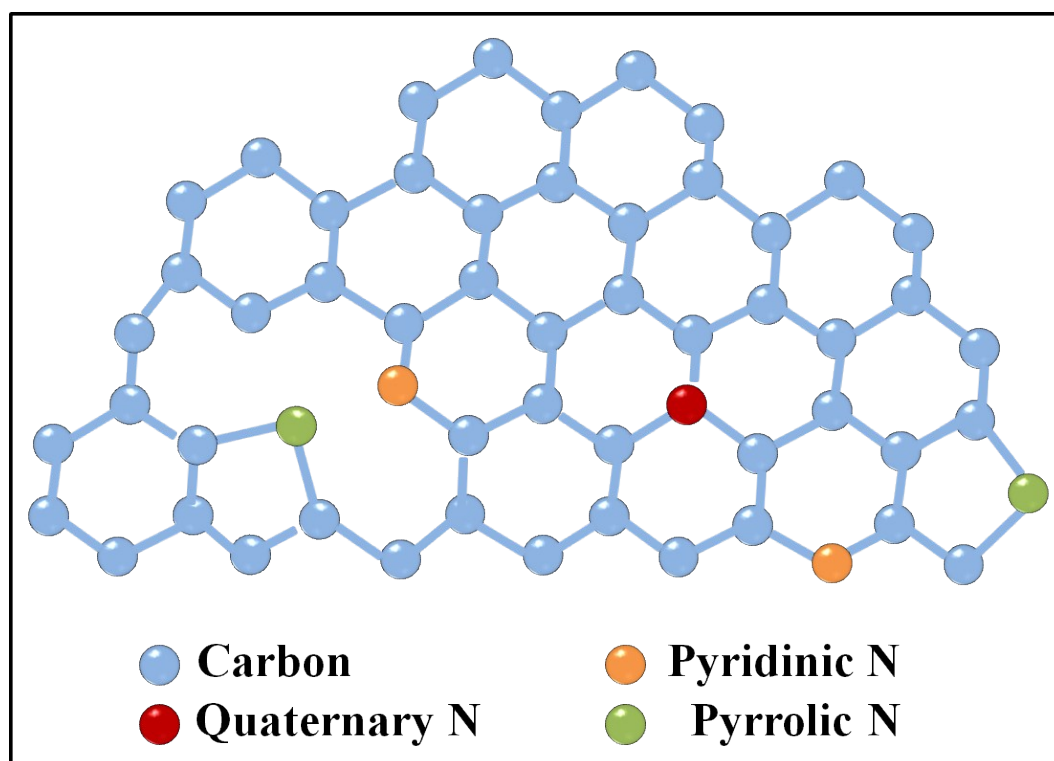
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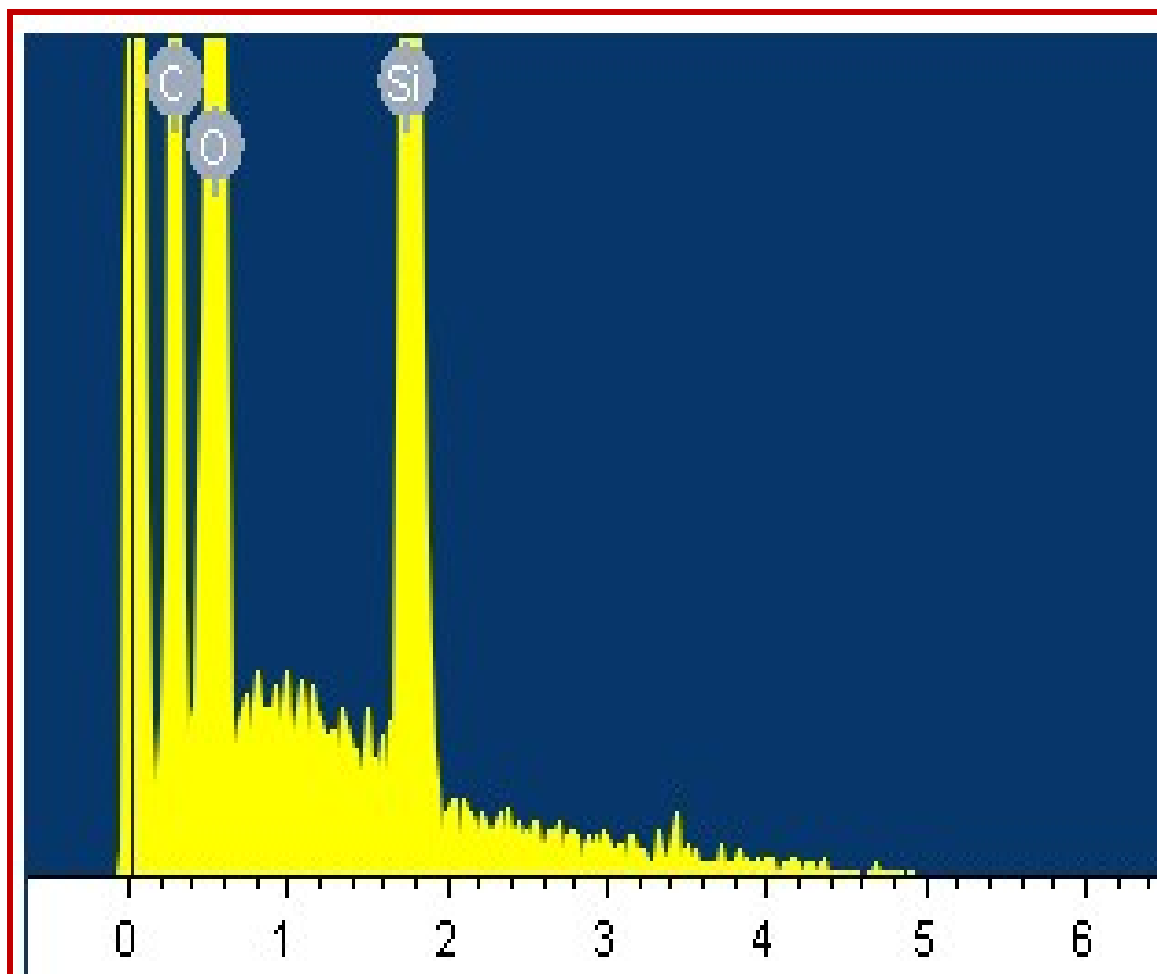
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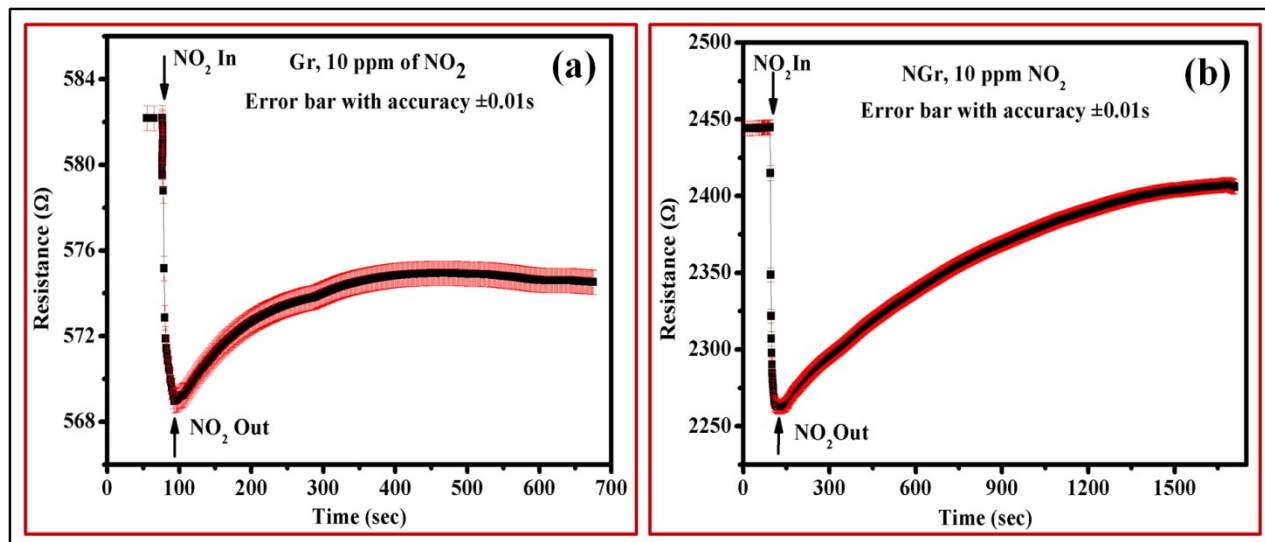
**Figure S1:** TEM images of (a) Gr and (c) NGr and HRTEM images of (b) Gr and (d) NGr showing number of layers.



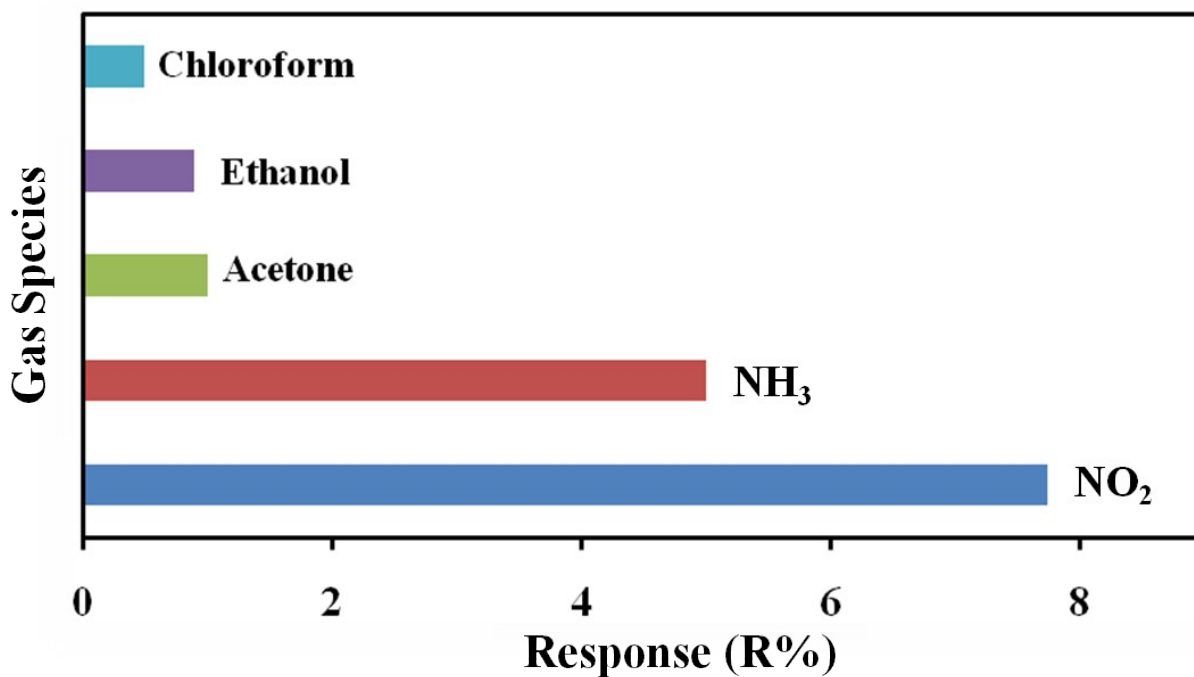
**Figure S2:** Possible configurations of nitrogen doping in graphene.



**Figure S3:** EDX spectrum of small physical area of Gr film.



**Figure S4:** Response and recovery curves of (a) Gr and (b) NGr 10 ppm of  $\text{NO}_2$  with error bar and accuracy values in time.



**Figure S5:** The selectivity of the NGr sensor for 10 ppm  $\text{NO}_2$ ,  $\text{NH}_3$ , Acetone, Ethanol and Chloroform at room temperature.