

Supplementary Material

Fabrication of carbon nanomaterials using laser scribing on copper nanoparticles-embedded polyacrylonitrile films and their application in a gas sensor

Fabrication of Carbon Nanomaterials Using Laser Scribing on Copper Nanoparticles-Embedded Polyacrylonitrile Films and Their Application in a Gas Sensor

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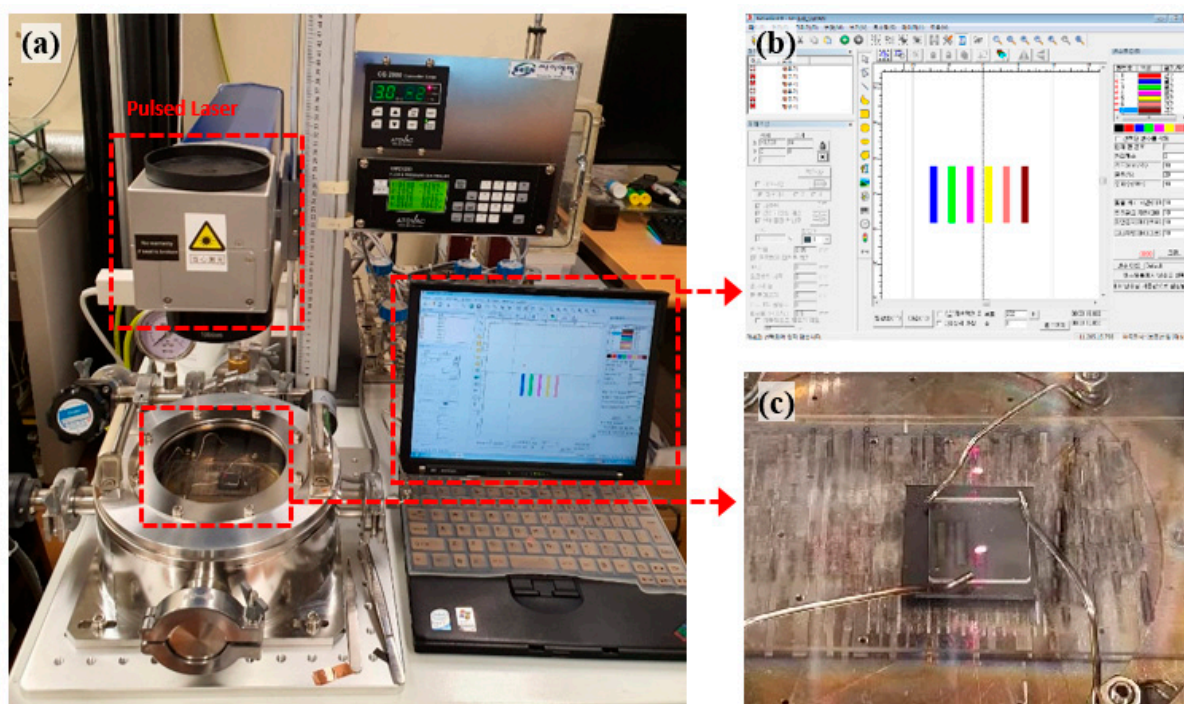


Figure S1. Photographs of (a) laser assisted CVD system, (b) operating software and (c) target sample in chamber (see the “Laser assisted CVD_chamber.mp4” video file).

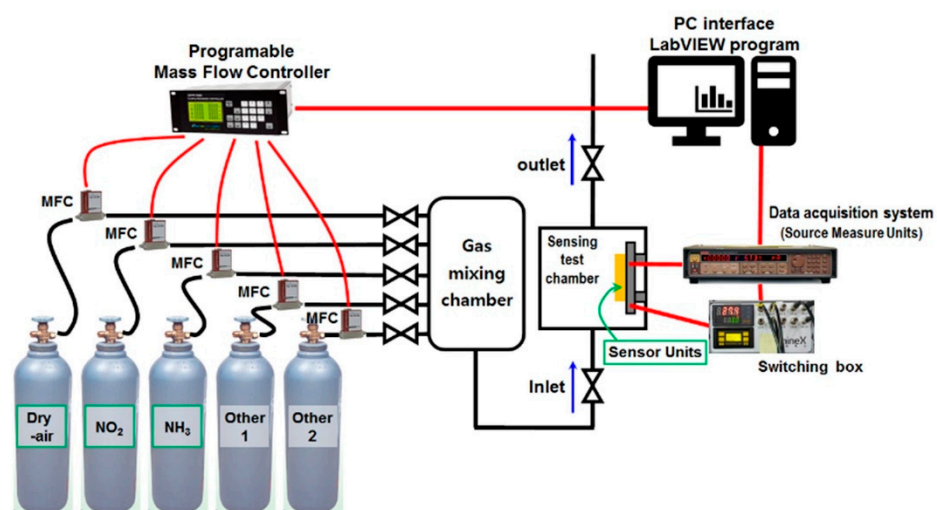


Figure S2. Schematic of the gas sensing system.

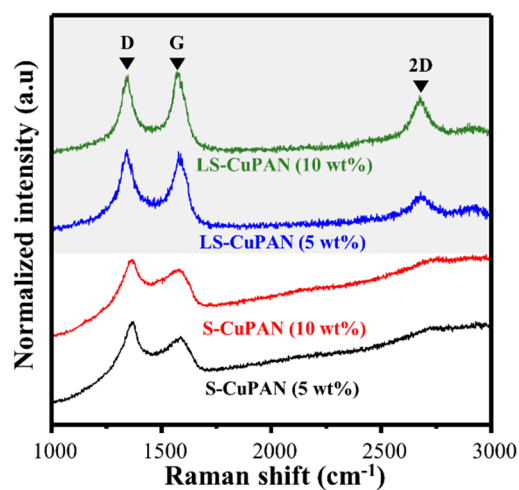


Figure S3. Raman spectra of S-CuPAN and LS-CuPAN with different weight ratios of Cu to PAN.

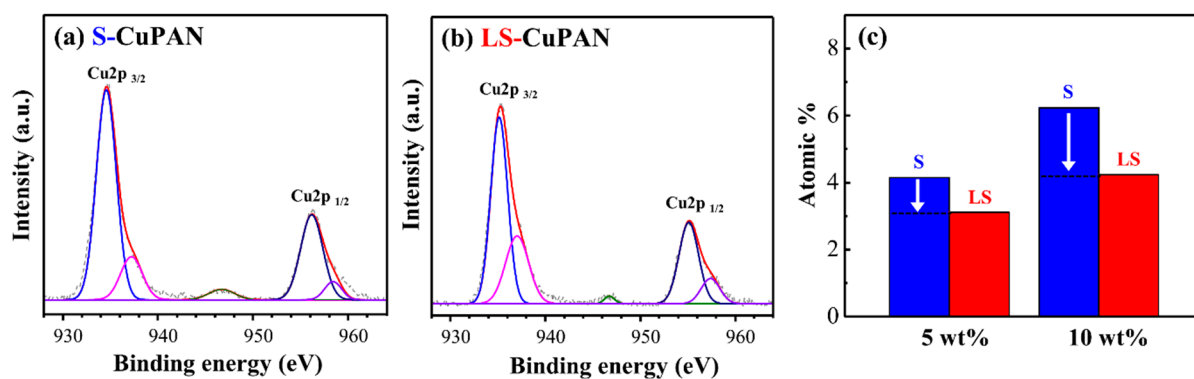


Figure S4. Cu2p spectra of (a) S-CuPAN (10 wt%), (b) LS-CuPAN (10 wt%), and (c) atomic ratio of Cu in XPS analysis.

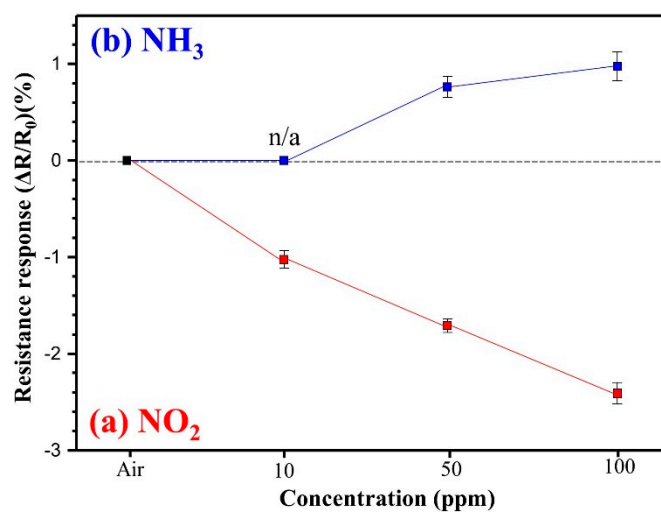


Figure S5. Resistance changing rates exposure to different gas concentrations, (a) under NO₂ 10, 50 and 100 ppm, (b) under NH₃ 10, 50 and 100 ppm.

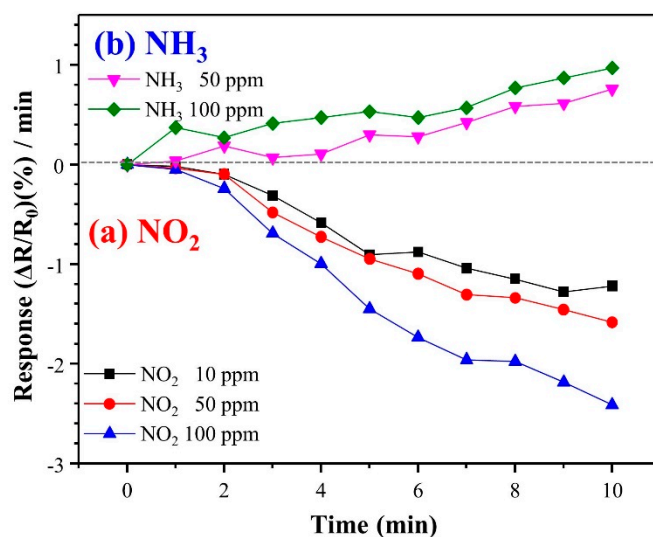


Figure S6. Resistance response versus time when (a) NO₂ and (b) NH₃ with different concentrations.