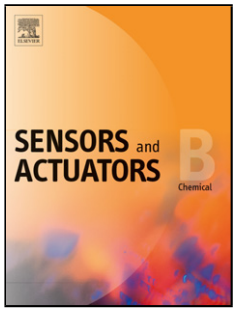

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PII: S0925-4005(18)30559-8
DOI: https://doi.org/10.1016/j.snb.2018.03.069
Reference: SNB 24354

To appear in: *Sensors and Actuators B*

Received date: 9-10-2017
Revised date: 13-3-2018
Accepted date: 13-3-2018

Please cite this article as: Ishrat Rahim, Mutabar Shah, Afzal Khan, Jingting Luo, Aihua Zhong, Min Li, Rashid Ahmed, Honglang Li, Qiuping Wei, Yongqing Fu, Capacitive and resistive response of humidity sensors based on graphene decorated by PMMA and silver nanoparticles, Sensors and Actuators B: Chemical https://doi.org/10.1016/j.snb.2018.03.069

Capacitive and resistive response of humidity sensors based on graphene decorated by PMMA and silver nanoparticles

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Highlights

- Graphene based efficient thin film humidity sensor was fabricated using the simple drop casting technique.
- Graphene is a zero-band gap material but the band gaps obtained for Gr-AgNps and Gr-AgNps-PMMA thin film were 4.7 and 4.1 eV respectively.
- Increase in capacitance and a gradual decrease in resistance was observed for the sensors with the subsequent increase in the relative humidity
- The devices showed an excellent stability and response by recording their resistance and capacitance respectively