

Supplementary Information

Reduced Graphene Oxide-Polyethylene Oxide Hybrid Films for Toluene Sensing at Room Temperature

Yuanjie Su^{†,*a}, Guangzhong Xie^{†,*a}, Jun Chen^{†,b}, Hongfei Du^a, Hulin Zhang^a, Zhen
Yuan^a, Zongbiao Ye^a, Xiaosong Du^a, Huiling Tai^a, Yadong Jiang^a

^a State Key Laboratory of Electronic Thin Films and Integrated Devices, School of Optoelectronic Information, University of Electronic Science and Technology of China (UESTC), Chengdu 610054, China

^b School of Materials Science and Engineering, Georgia Institute of Technology, Atlanta, Georgia 30332-0245, USA

*To whom correspondence should be addressed: yjsu@uestc.edu.cn and gzxie@uestc.edu.cn

[†]These authors contributed equally to the work.

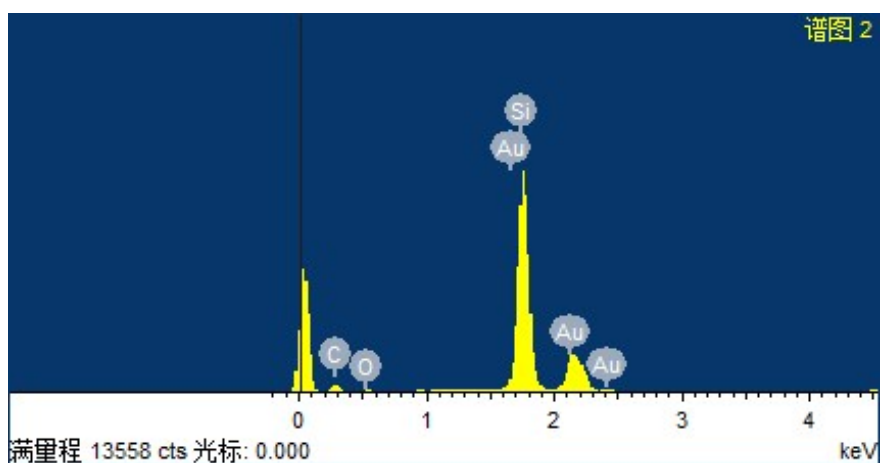


Figure S1 The element percentage of pure RGO analyzed by EDS

Table S1 The weigh percentage and atomic percentage of each element in pure RGO

Element	Weight percentage (%)	Atomic percentage (%)
C	28.70	59.42
O	3.17	4.93
Si	35.20	31.17
Ti	0.81	0.42
Au	32.12	4.06
Total	100.00	100

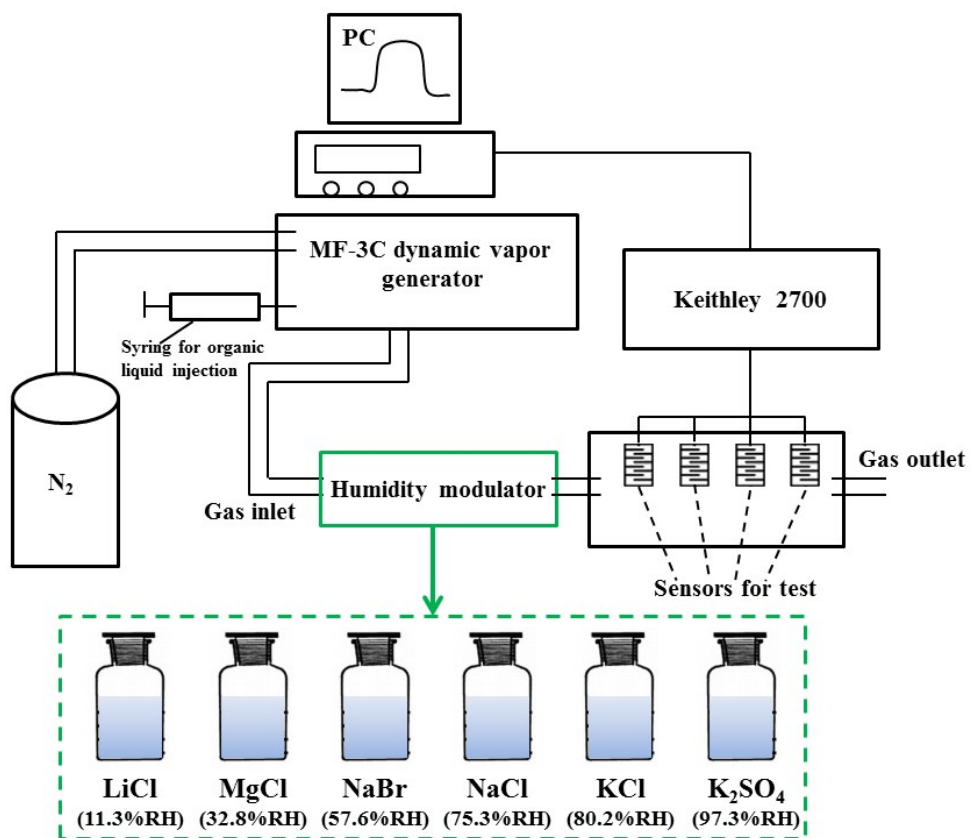


Figure S2 Experimental setup for the humidity measurement of the as-fabricated gas sensors.

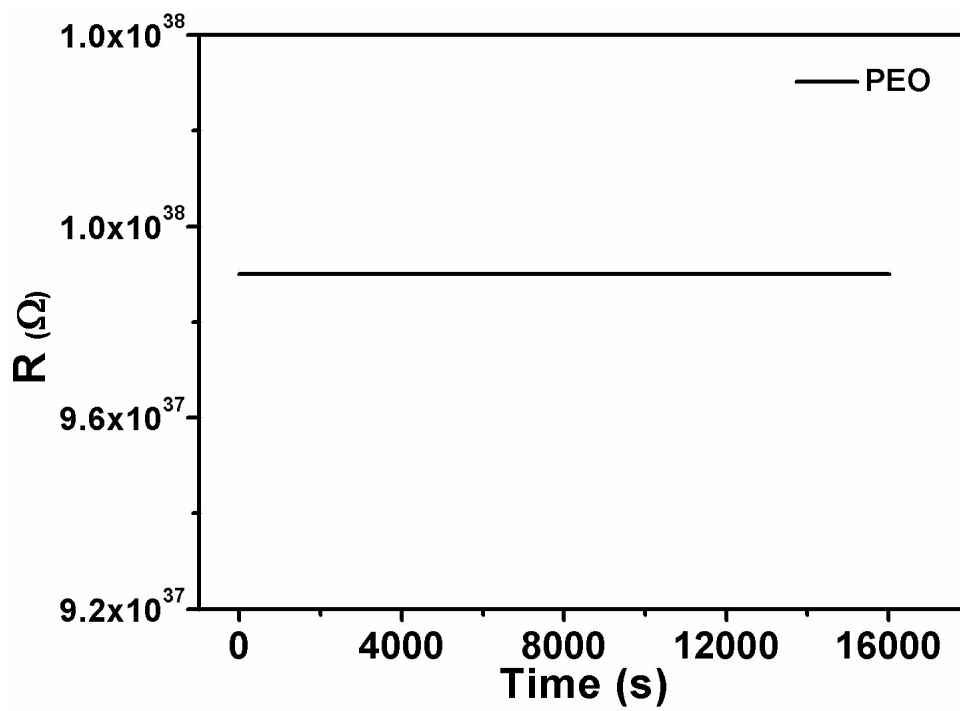


Figure S3 Real-time electric resistances of pure PEO film based gas sensor in response to vapor toluene from 80 ppm to 140 ppm.

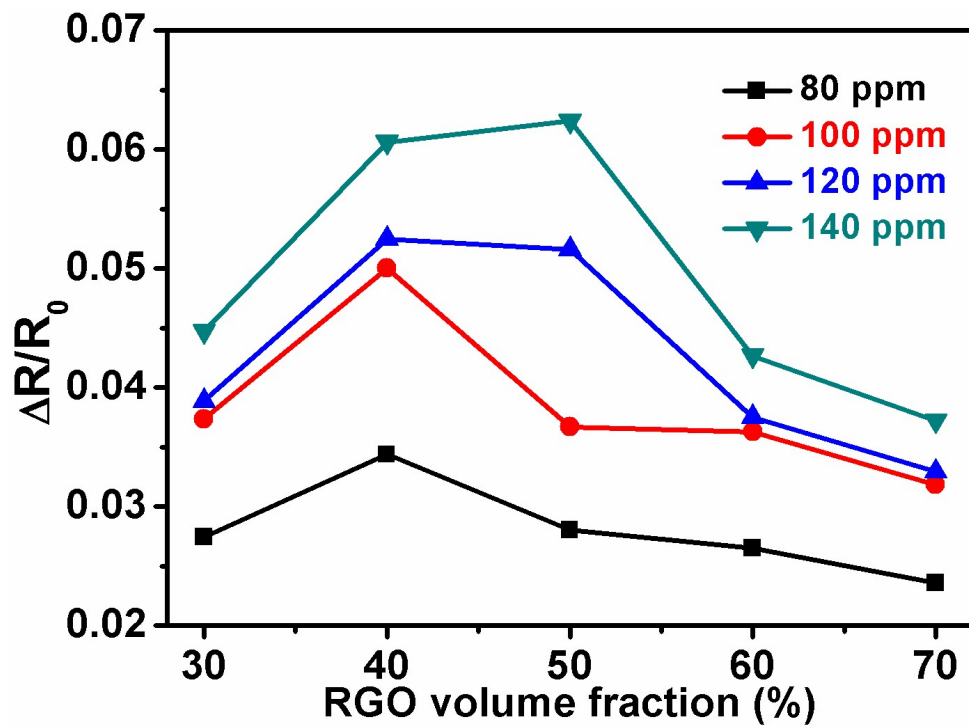


Figure S4 The response values of the fabricated sensors as a function of RGO volume fraction.

Table S2 Comparison of sensing performance between toluene sensor in this work and reported work.

Reference	Materials	Fabrication method	T (°C)	Response @100ppm	Response/Recovery time (s)
[1]	Au-ZnO NWs	hydrothermal	340	8.63	36/45
[2]	ZnO-SnO ₂	electrospinning	360	9.8	5/6
[3]	ITO	thermal evaporation	230	0.24	90/120
[4]	ZnO NWs	hydrothermal	290	17.1	8/20
[5]	flow-like ZnO	hydrothermal	350	43	53/151
[6]	ZnTiO ₃	Sol-gel	350	N/A	5/90
[7]	Co ₃ O ₄	nanocasting	200	6.66	233/165
This paper	RGO/PEO	Spray method	25	0.037	127/143

Reference

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