Supporting Information

Supporting Information for

Facile fabrication of gas sensors based on molybdenum disulfide nanosheets and carbon nanotubes by self-assembly

Hyejin Rhyu[a,c], Seonjeong Lee[a], Myunghyun Kang[b], Daeho Yoon[c], Wooseok Song[a], Sun Sook Lee[a], Jongsun Lim[a], Sung Myung[a,*]

a. Thin Film Materials Research Center, Korea Research Institute of Chemical Technology (KRICT), 141 Gajeong-ro, Yuseong-gu Daejeon 34114, Republic of Korea
b. Advanced Materials Division, Korea Research Institute of Chemical Technology (KRICT), 141 Gajeong-ro, Yuseong-gu Daejeon 34114, Republic of Korea
c. Department of Advanced Material Science and Engineering, Sungkyunkwan University, Suwon 16419, Republic of Korea

Sensing material	Method	LOD	Operation temperature	Ref.
MoS_2/rGO	Sonication	8 ppm	40 ℃	[1]
MoS_2/graphene	Chemical vapor deposition	0.2 ppm	RT	[2]
MoS_2/SWCNT	Sonication	50 ppb	RT	This work

Table S1. NO_2 gas sensing properties for MoS_2 and graphene hybrid based gas sensors

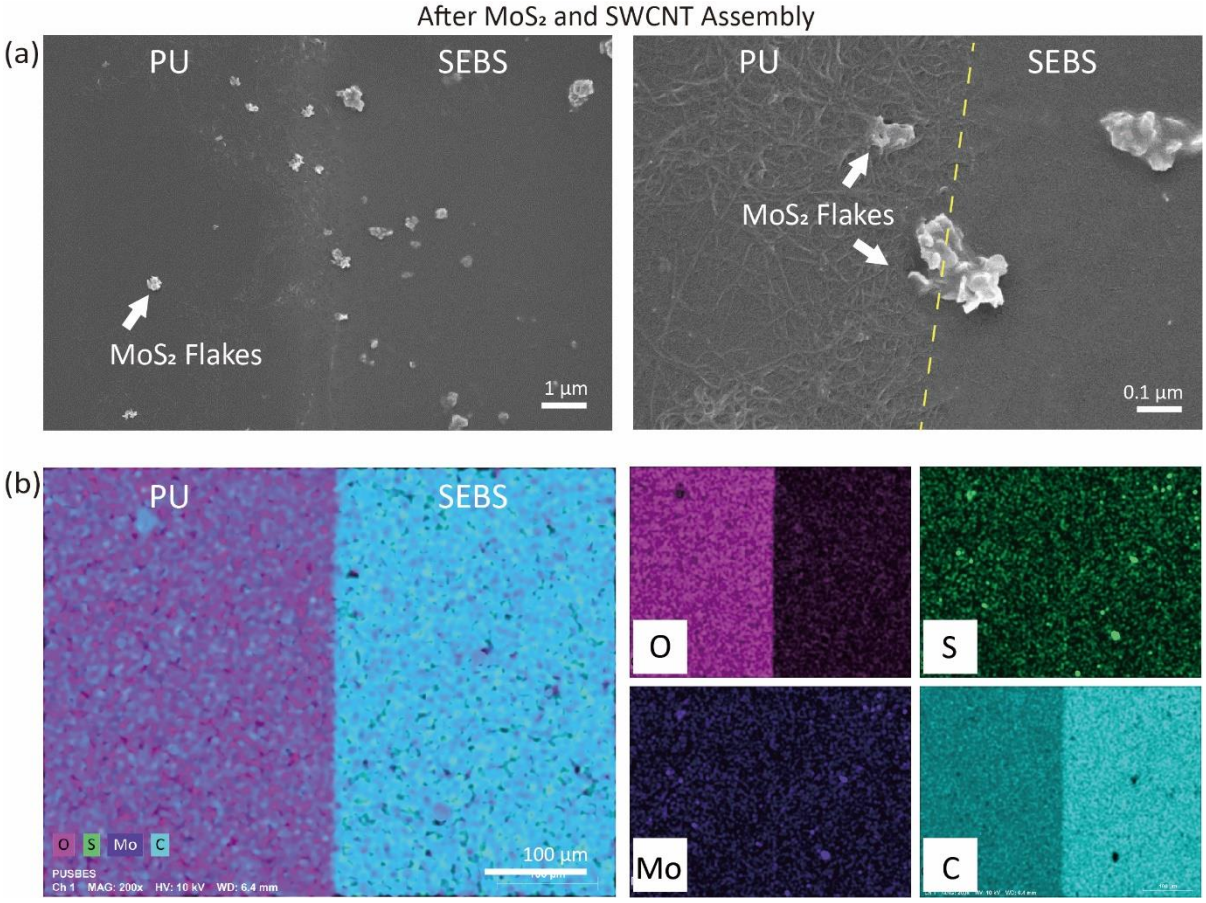

Figure S1. (a) SEM images of MoS_2/SWCNT on PU and SEBS (b) EDS elemental mapping of MoS_2/SWCNT O, S, Mo and C elements of PU and SEBS substrate.

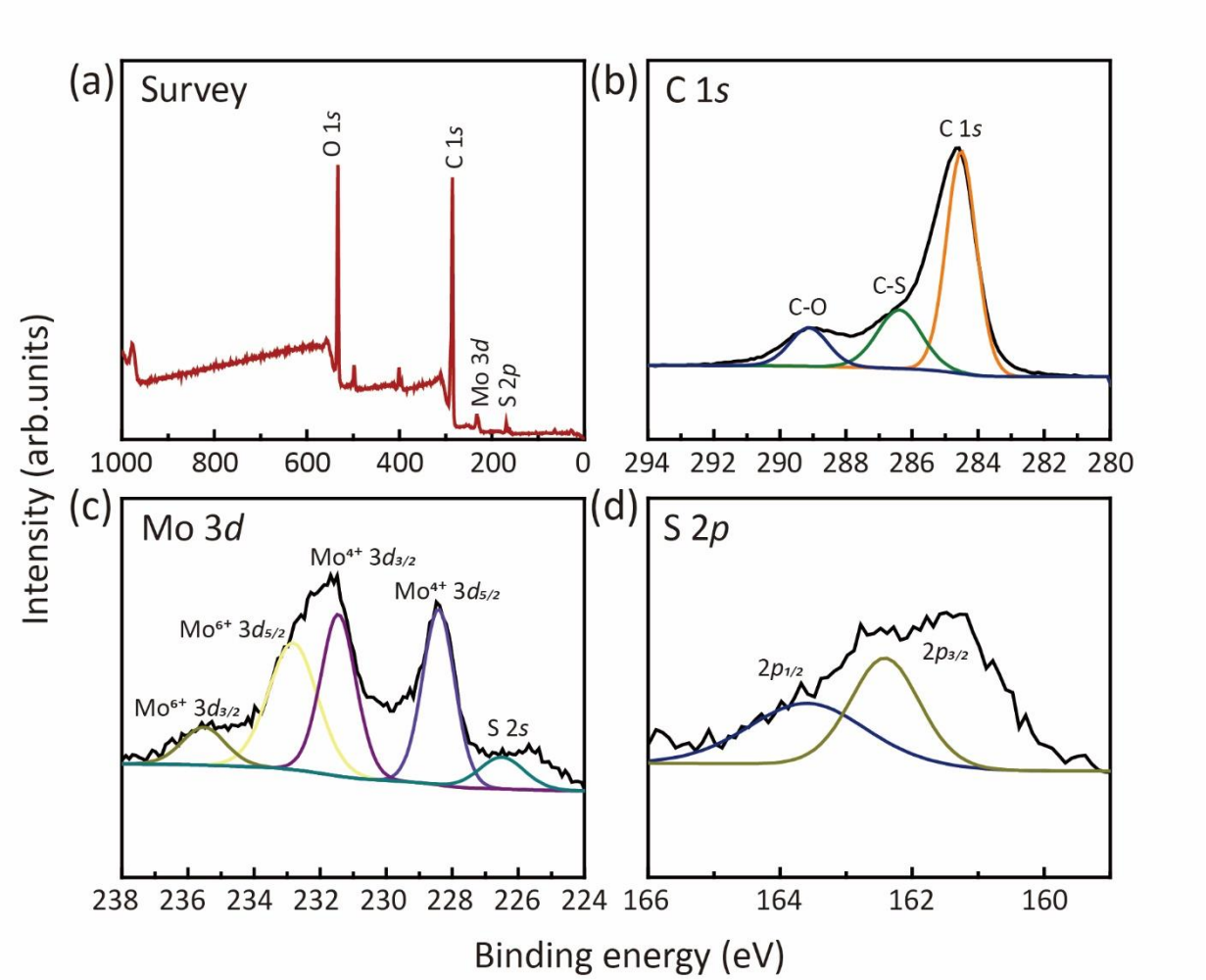

Figure S2. XPS spectra of MoS_2/SWCNT (a) survey spectrum (b) C 1*s* (c) Mo 3*d* and (d) S 2*p*.

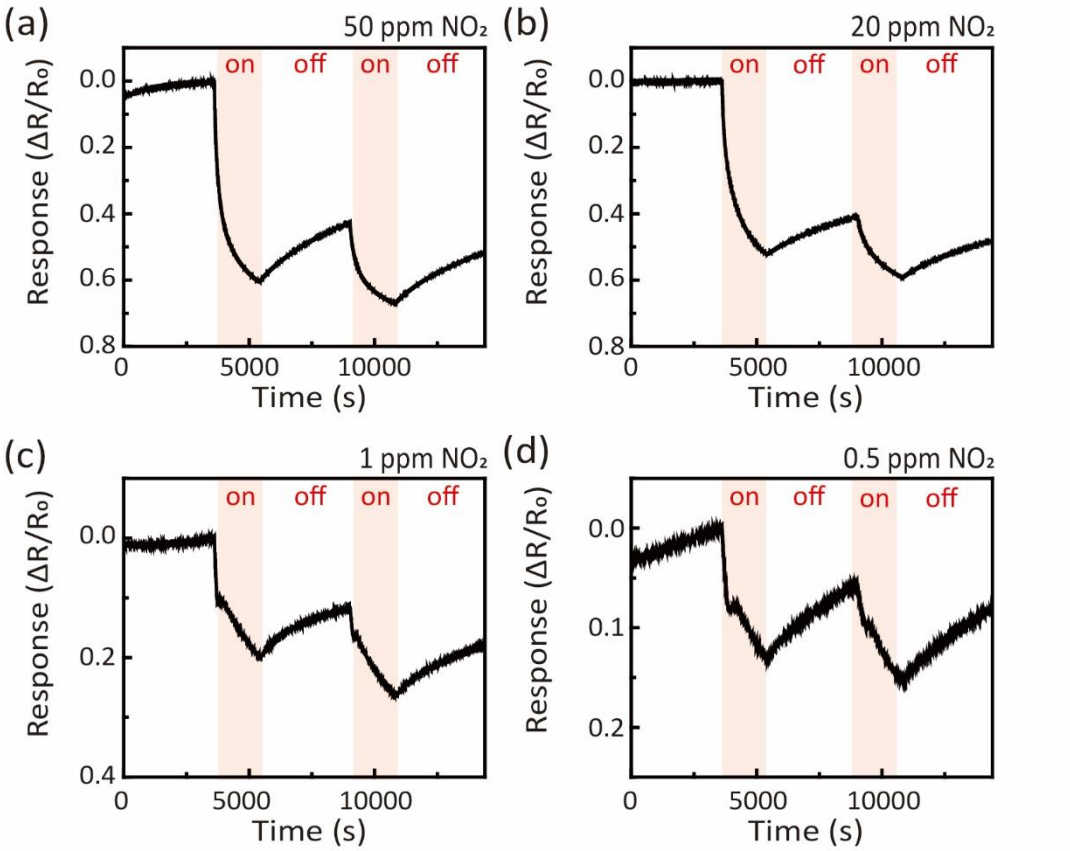

Figure S3. The response of NO_2 gas at room temperature (a) 50 ppm (b) 20 ppm (c) 1 ppm (d) 0.5 ppm.

References :

1. N. Kanaujiya, Anupam, K. Golimar, P. C. Pandey, Jyoti and G. Varma, 2018.

2. H. S. Hong, N. H. Phuong, N. T. Huong, N. H. Nam and N. T. Hue, Applied Surface Science, 2019, 492, 449-454.