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Supplementary Materials

Facile Fabrication of Hybrid Carbon Nanotube Sensors by Laser Direct Transfer

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We have calculated the theoretical detection limit (LOD) as previously reported [1] from the signal/noise ratio. First, we took 13 data points at the baseline before NH_3 exposure (y_i) and plotted the data using a fifth order polynomial fit.

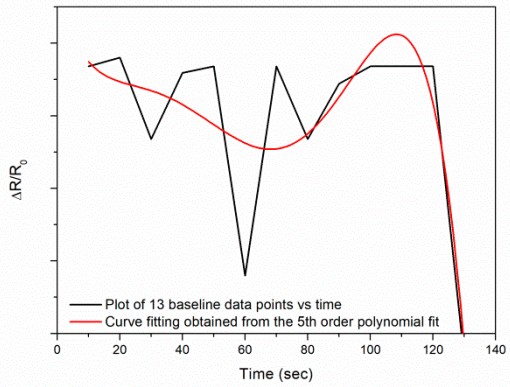

Figure S1. Calculation of the theoretical detection limit.

From the curve-fitting equation we obtained the statistical parameters of the polynomial fit (y), and then calculated the sensor noise using the root-mean-square deviation (Eq. 1).

Eq. (1) $rms_{noise}=\sqrt{\Sigma(y_i-y)^2}/N$

$\sqrt{\Sigma(y_i-y)^2}=1.23639E-08$

N=13, where N is the number of data points in the curve fitting.

The rms_{noise} for the SWCNT@SnO_2 sensor is 7.09599E-5.

The theoretical detection limit according to IUPAC is

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Eq. (2) $LOD=3\times rms_{noise} / slope$.

The slope is 0.00164 (obtained from the calibration curve of the sensor response)

LOD = 23.93 ppt

References

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