Electronic Supplementary Information to:

Enhanced selectivity of target gas molecules through a minimal array of gas sensors based on nanoparticle-decorated SWCNTs

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Figure S1 (left panel) shows the response of all sensors upon exposure to 30 and 45 ppm of ammonia. Each exposure was carried out for 2 and 3 minutes, respectively. On the basis of the data shown in the right panel, which refer to the exposure to 30 ppm ammonia for 2 minutes, the fastest response time is registered for the ITO-CNT sample, while the slowest are detected for Au-CNT and Si-CNT. Likewise, the fastest recovery is observed for ITO-CNT, while the slowest recovery is observed for Au-CNT and Si-CNT.
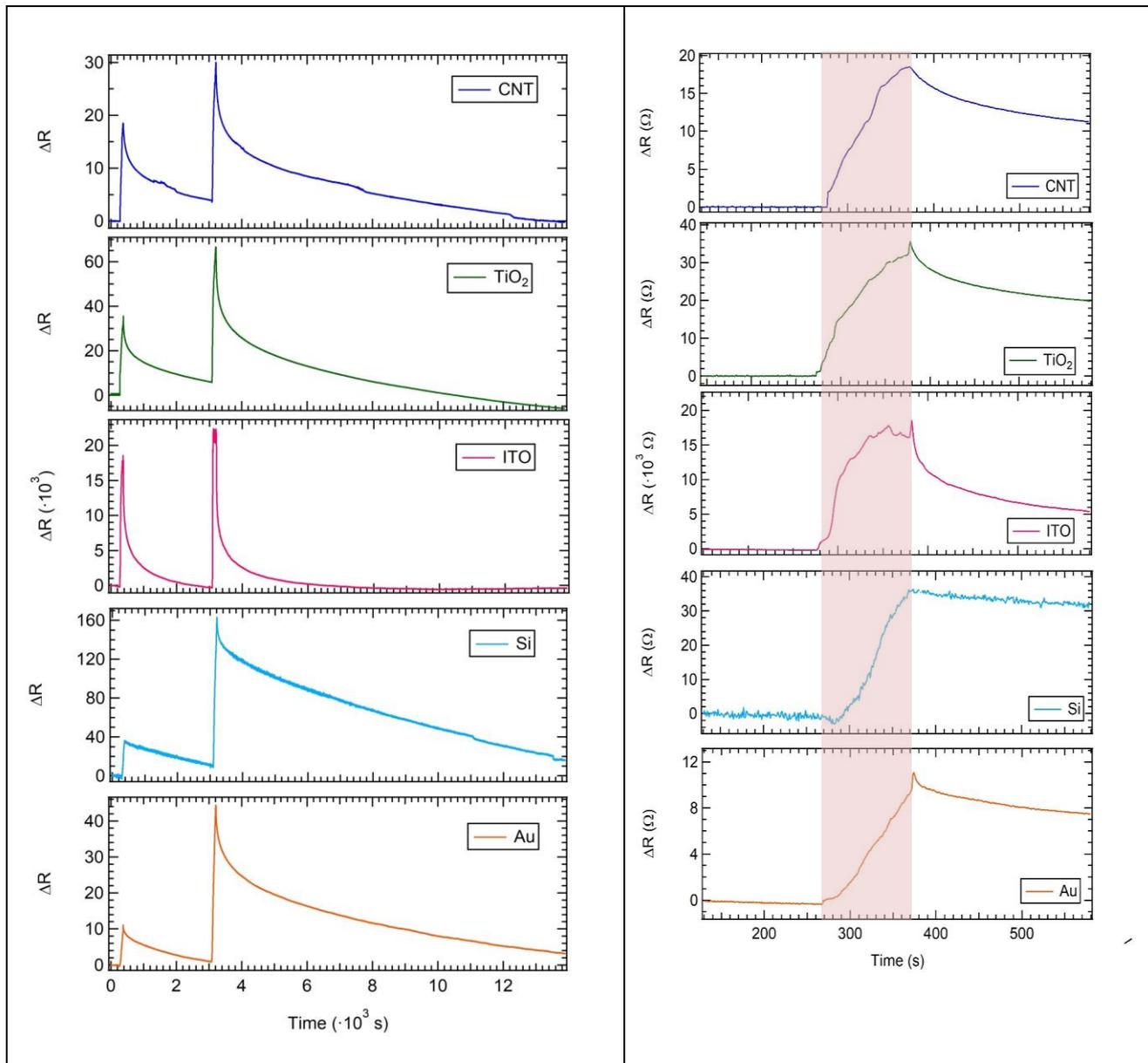

Figure S1. Exposure of the sensor array to 30 and 45 ppm of ammonia (left panel). Detail of the response of the sensors to 30 ppm of ammonia for 120 seconds (right panel).

Figure S2 shows the results of the PCA carried out taking into account all sensors in the array (left panels) and the sensor array without the Au-CNT response (right panels). The top panels display the whole 2D PCA space, while the bottom panels display a limited region of the 2D PCA space. The dashed horizontal and vertical lines are drawn to denote the orthogonal axis in the PCA planes. A comparison between the PCA results in the limited region obtained with all sensors (bottom left) and with the array without the Au-CNT sensor allows to point out that the Au sensor is relevant to achieve a better discrimination in the central area of the PCS space. In particular, the use of the Au-CNT sensor avoids overlapping of the sodium hypochlorite points with those of acetone+ethanol, and makes the cluster of the ethanol points more detached from the cluster located approximately at PC1= - 0.25; PC2= - 0.275.
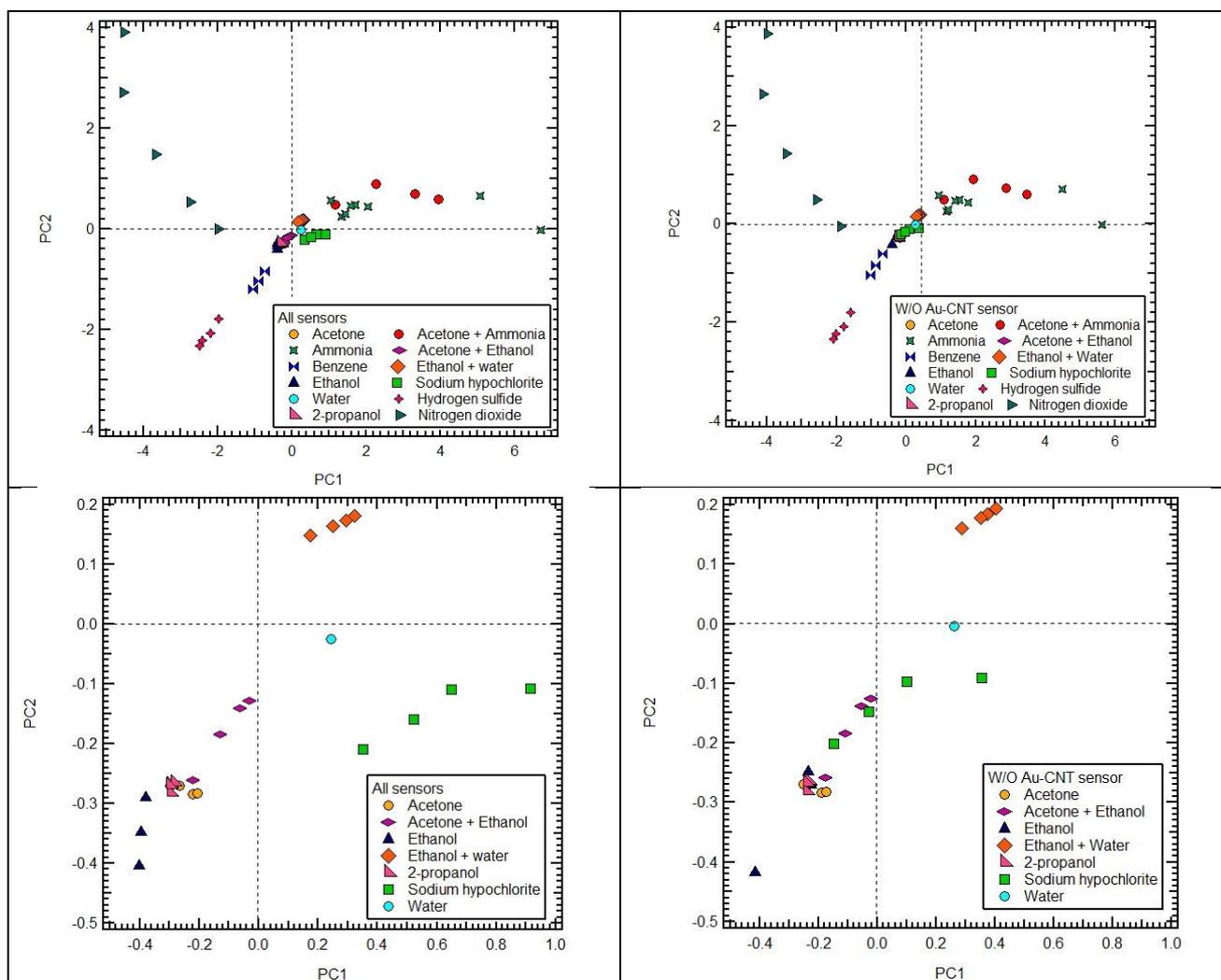

Figure S2. PCA carried out taking into account all sensors in the array (left panels) and the sensor array without the Au-CNT response (right panels). The top panels display the whole 2D PCA space, while the bottom panels display a limited region of the 2D PCA space. The dashed horizontal and vertical lines are drawn to denote the orthogonal axis in the PCA planes.