

Supplementary Materials

Of

The Influence of Nb on the Synthesis of WO₃ Nanowires and the Effects on Hydrogen Sensing Performance

Dario Zappa ^{1,*}

¹ SENSOR Laboratory, Department of Information Engineering (DII), University of Brescia, Via Valotti 9, 25133 Brescia, Italy

* Correspondence: dario.zappa@unibs.it; Tel.: +39-030-371-5767

A statistical analysis of the average diameters of the nanowires, at different oxidation temperatures, is reported in Table S1.

Table 1. Statistical distribution of the diameter of the nanowires synthesized at different temperature, for pristine and Nb-WO₃ materials.

Temperature [°C]	WO ₃ [nm]		WO ₃ +Nb(4) [nm]		WO ₃ +Nb(12) [nm]	
	Average	Stdev	Average	Stdev	Average	Stdev
500					12.6	2.1
550	15.9	3.3	11.6	2.3	13.0	2.6
600	17.2	4.6	19.0	3.2	19.0	4.2
650	29.2	7.0	20.9	4.1	21.5	4.9
700	34.0	21.0	24.7	7.2	35.7	9.4

The coefficients A and B of the estimated power laws for each target compound and material are reported in Table S2.

Table 2. A and B coefficients of the calibration curves, calculated at 200 °C for pristine and Nb-WO₃ nanowires (RH = 50% @ 20 °C).

Gas Title Sample	Ethanol		Acetone		NO ₂		NH ₃		H ₂	
	A	B	A	B	A	B	A	B	A	B
WO ₃	0.049	0.655	<0.001	1.695	1.462	0.818	0.162	1.149	130.990	0.642
WO ₃ +Nb(4)	0.036	0.696	0.001	1.318	0.742	0.637	0.159	0.997	22.070	1.359
WO ₃ +Nb(12)	0.024	0.637	0.002	0.958	0.558	0.261	0.063	1.243	2.537	1.415