

A network of SnO₂ nanowires suspended between the electrode with their gas sensing characteristics

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A simple and efficient way of preparing highly sensitive SnO₂ nanowire-based gas sensors without an arduous lithography process was studied. The network of SnO₂ nanowires could be suspended upon the Si substrate by separating the Au catalyst layer from the substrate. As the electric current is transported along the networks of the nanowires, not along the bottom layer on the substrate, the sensitivity to gases was maximized in the suspended and networked structures. The sensitivities were 18 and 180 when the NO₂ concentrations were 0.5 and 5 ppm. The response time was typically 20~50.