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The invention relates to the oxide semiconductor technology, in particular to the technology for producing ZnO nanowires functionalized with palladium (Pd) nanoparticles and can be used in the manufacture of explosive gas and ultraviolet radiation sensors.

The method for functionalization of ZnO nanowires with Pd nanoparticles comprises growing ZnO nanowires on a glass substrate, coated with a FTO layer, in an electrolyte of 0.2 mM $ZnCl_2$+0.1 M KCl+1.5 μM $PdCl_2$, at a temperature of 90°C, a substrate rotation rate of 300 rpm and an applied voltage of -0.51…-0.7 V, for 2.5 hours, after which the ZnO nanowires are thermally oxidized in air with Pd nanoparticles in two stages: raising the temperature to 150°C with a growth rate of 5°C/min and raising the temperature to 250°C with a growth rate of 1°C/min, maintaining the temperature at 250°C for 12 hours.

Claims: 1
Fig.: 4