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Au-NPs/ZnO Single Nanowire Nanosensors for Health Care Applications

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Abstract:

Herein, the room temperature gas sensing properties of a device fabricated based on an individual gold nanoparticles (AuNPs)-functionalized zinc oxide nanowire (ZnO NW) is reported. The Au-NPs/ZnO nanowires were deposited using the electrochemical approach in a classical three-electrode electrochemical cell. The dual beam focused ion beam/scanning electron microscopy (FIB/SEM) was used to integrate the single nanostructures into gas sensing nanodevices. The results are promising for future applications in monitoring H₂ gas for health care applications and clinical breath analysis.