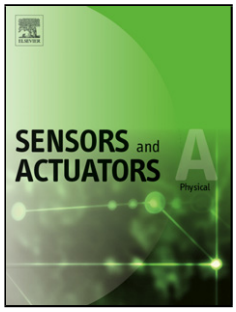

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Enhancement of Sensor Response of as Fabricated SWCNT SensorwithGoldDecorated Nanoparticles

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Highlights

- High quality, long network and randomly oriented SWCNTs were grown by PECVD technique.
- FESEM and HRTEM had revealed the growth of SWCNTs and decoration of Au nanoparticles.
- The Au nanoparticles decorated SWCNT sensor had shown excellent enhancement in sensitivity.
- Fast response, speedy recovery, high resistance variation, high quality repeatability, long term stability, and excellent selectivity was observed by Au decorated SWCNT sensor.
- On accounts of these characteristics, Au nanoparticles decorated SWCNT sensor may be a step forward towards the applications point of view in various fields.

Abstract

Here we have reported gas sensor properties of pristine single walled carbon nanotubes (SWCNTs) and Gold (Au) nanoparticles decorated SWCNT sensor towards trace level concentration detection of NH_3 (40ppm) at an operating temperature of (40^0C). Random network of SWCNTs were successfully synthesized by plasma enhanced chemical vapor deposition (PECVD) technique at a temperature of (650^0C). Two varied sets of chemiresist