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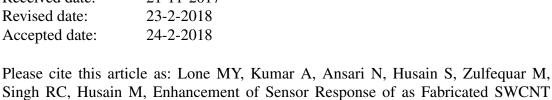
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SensorwithGoldDecorated Nanoparticles, Sensors and Actuators: A Physical (2010),



### ACCEPTED MANUSCRIPT

# 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<sub>3</sub> (40ppm) at an operating temperature of (40<sup>o</sup>C). Random network of SWCNTs were successfully synthesized by plasma enhanced chemical vapor deposition (PECVD) technique at a temperature of (650<sup>o</sup>C). Two varied sets of chemiresist

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