

1 **Supplementary material**

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5 **Synthesis of Thermally Stable Monodispersed Au@SnO₂ Nanoparticles by**
6 **Sonochemical Technique for Detection and Degradation of Acetaldehyde:**
7 **A Sense and Shoot Approach for Indoor Air Purification**
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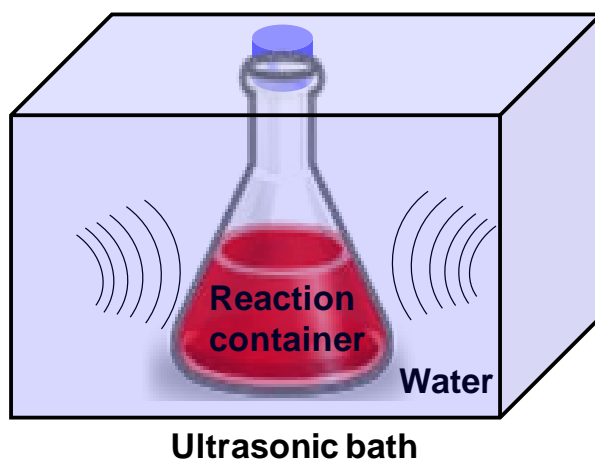
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32 *Figure S1: Experimental arrangement for the sonochemical synthesis of Au@SnO₂*
33 *core-shell nanoparticles*

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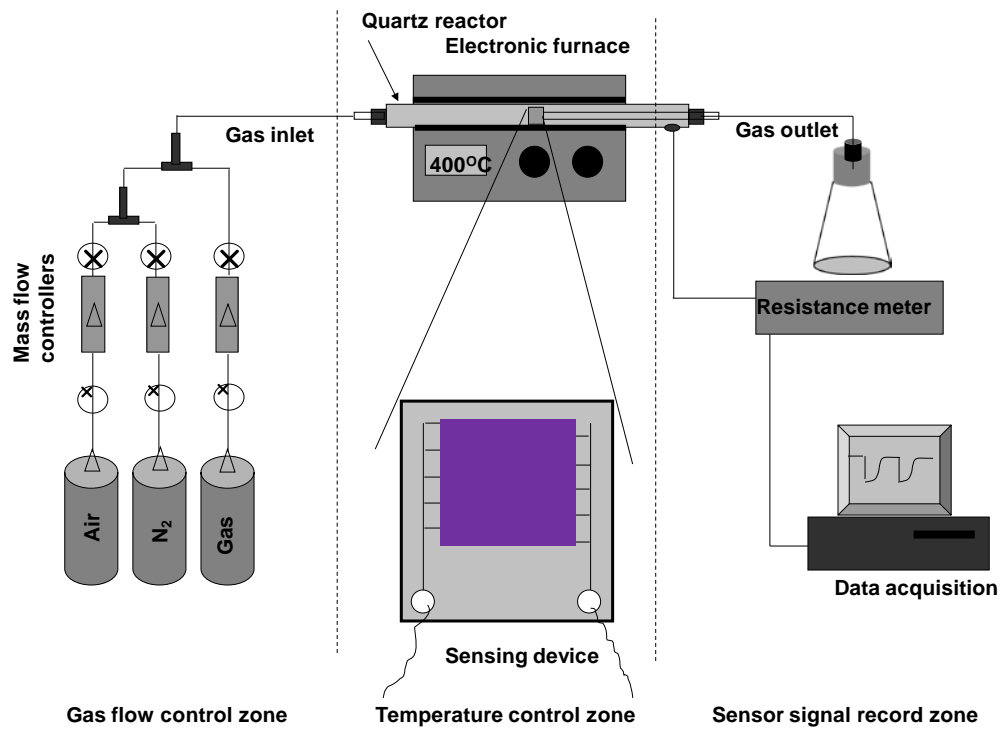
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56 *Figure S2: Schematic of homemade gas sensing evaluation system*

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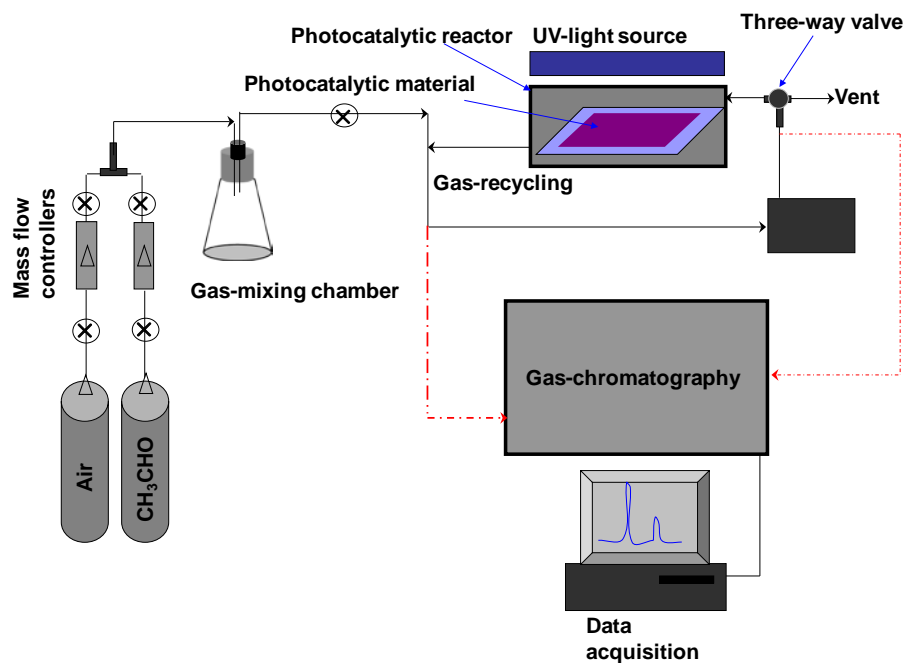
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75 *Figure S3(a): Schematic of gas-phase photocatalytic activity evaluation system*

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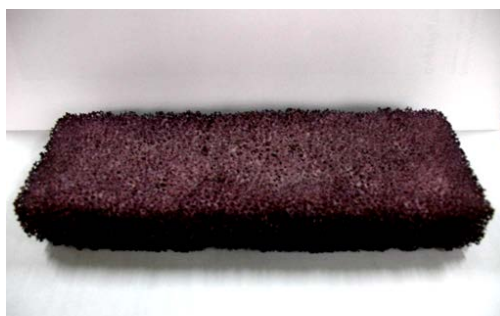
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81 *Figure S3(b): Au@SnO₂ nanoparticles deposited on ceramic foam and heat treated at*

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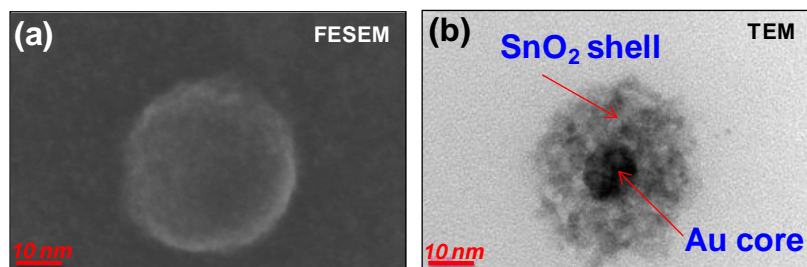
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90 *Figure S4: Simultaneous FESEM (a) and TEM (b) images of single Au@SnO₂ core-shell*
91 *nanoparticle synthesized by sonochemical technique*

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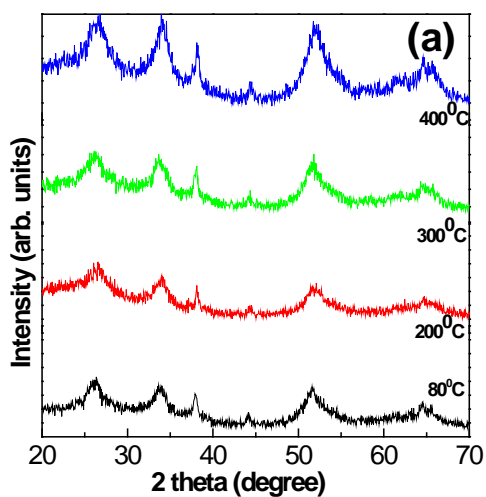
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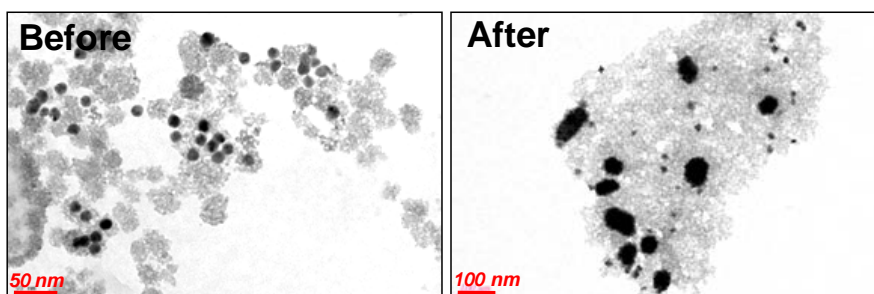
117 *Figure S5:* (a) XRD patterns of Au/SnO₂ nanocomposites synthesized by normal
118 precipitation technique, (b) TEM images of the nanocomposite materials before and
119 after heat treatment at 400°C

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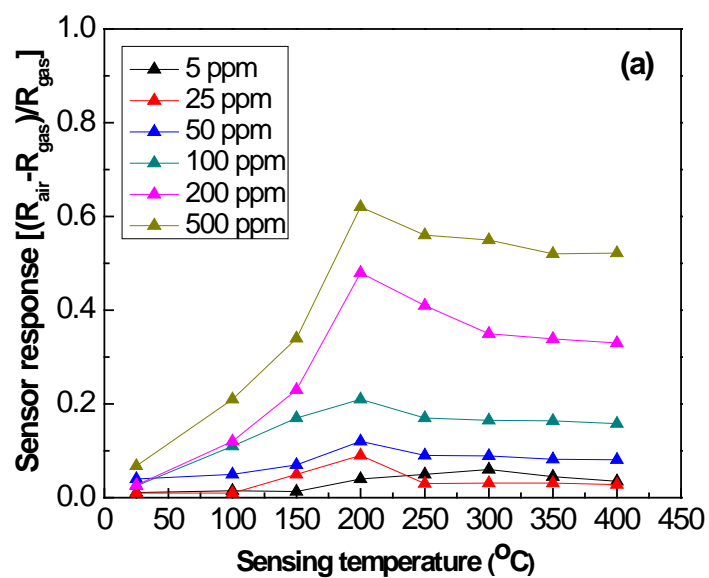
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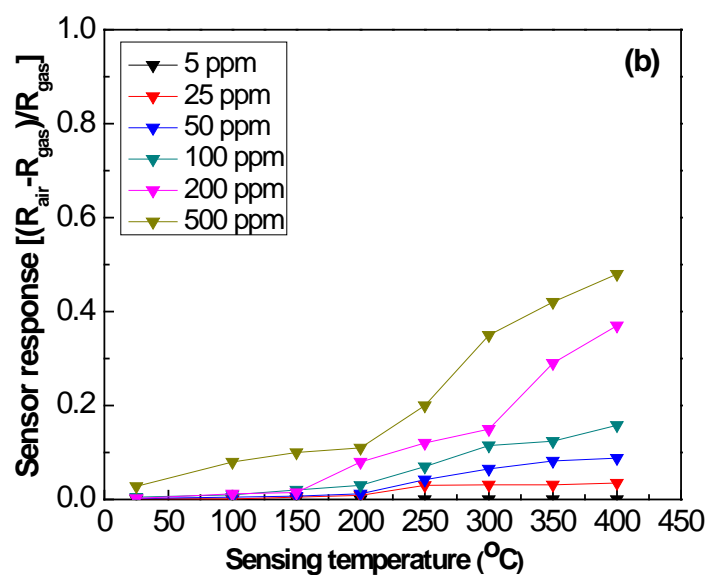
134 *Figure S6: (a) CO and (b) Ethanol sensing by the sensing device made with Au@SnO₂*
135 *core-shell nanoparticles at different operating temperature*

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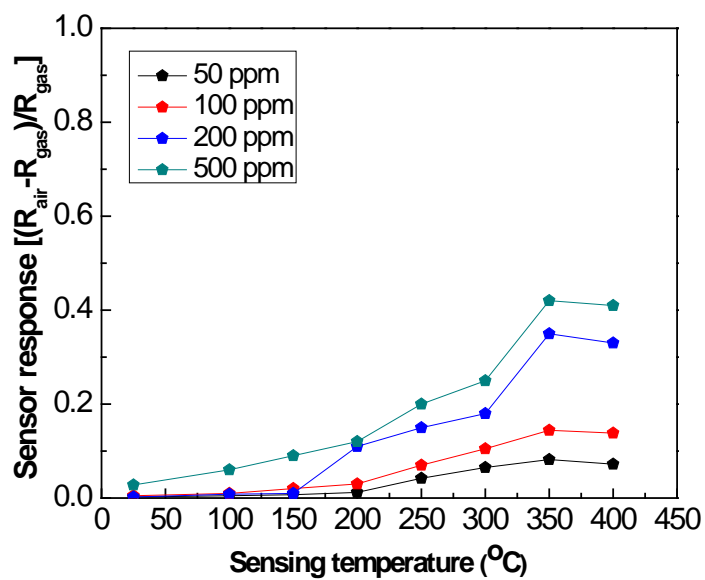
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146 *Figure S7: Acetaldehyde sensing by the sensing device made with Au/SnO₂*
147 *nanocomposites without core-shell structure at different operating temperature*
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