



Supplementary material for

# Annealing Effects on SnO<sub>2</sub> Thin Film for H<sub>2</sub> Gas Sensing

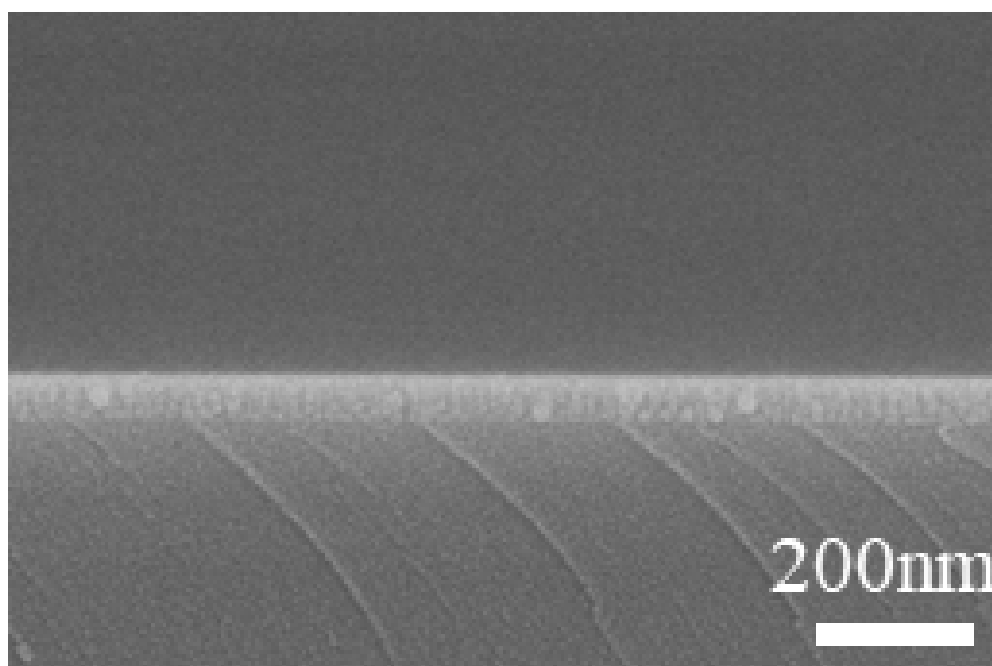
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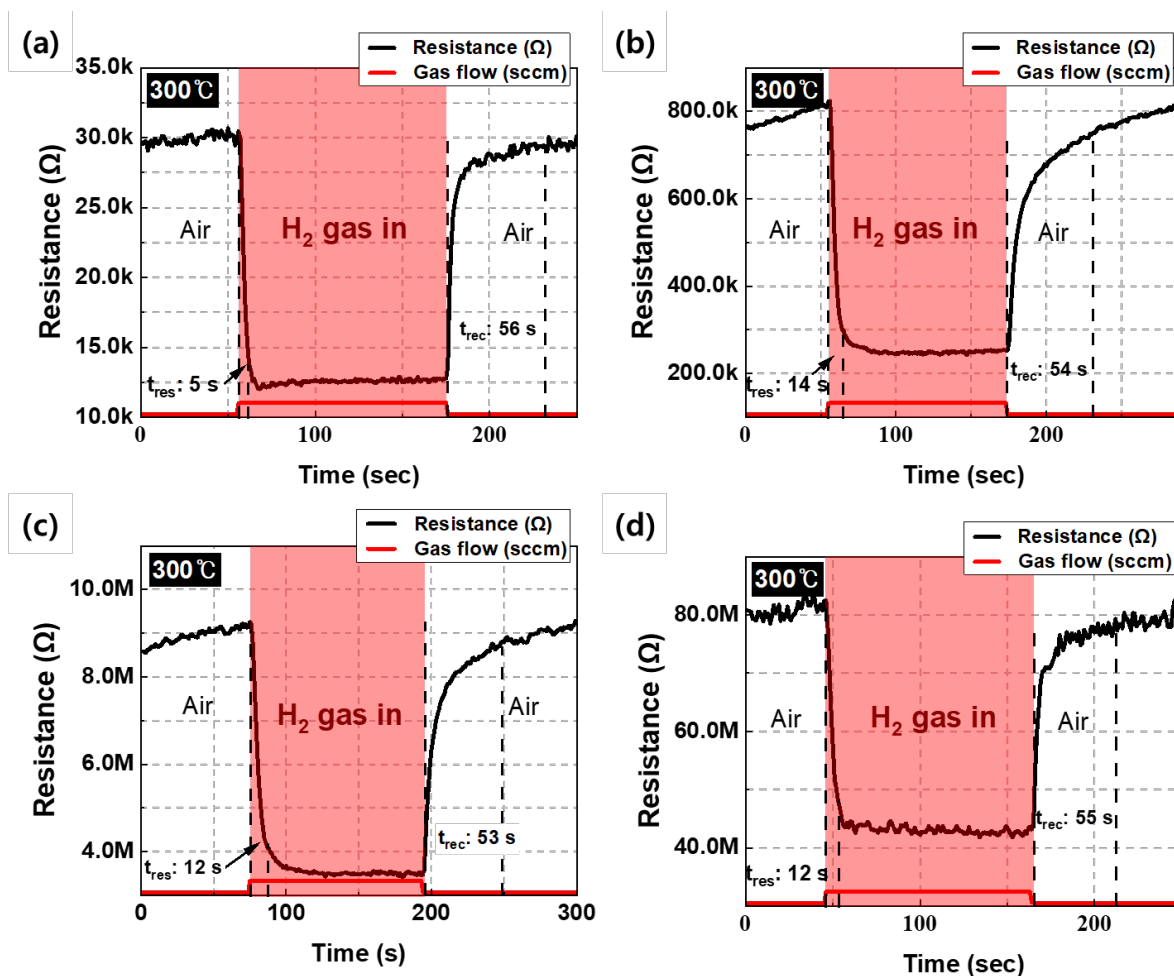
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**Figure S1.** Cross-section SEM image of unannealed SnO<sub>2</sub>.

The thickness of film which is not annealed SnO<sub>2</sub> is about 55.6 nm by SEM cross-section image.



**Figure S2.** Hydrogen response and recovery time of (a) unannealed SnO<sub>2</sub> (b) 1-hour annealed SnO<sub>2</sub> (c) 3-hour annealed SnO<sub>2</sub> (d) 5-hour annealed SnO<sub>2</sub>.

The resistance of the film is increased for annealing time at 300°C indicating about 35k, 800k, 9M, and 80M for not-annealed, 1-h, 3-h, and 5-h each. As annealing temperature increases, the initial resistance of SnO<sub>2</sub> increases for some point, but after the inflection point it decreases [1].

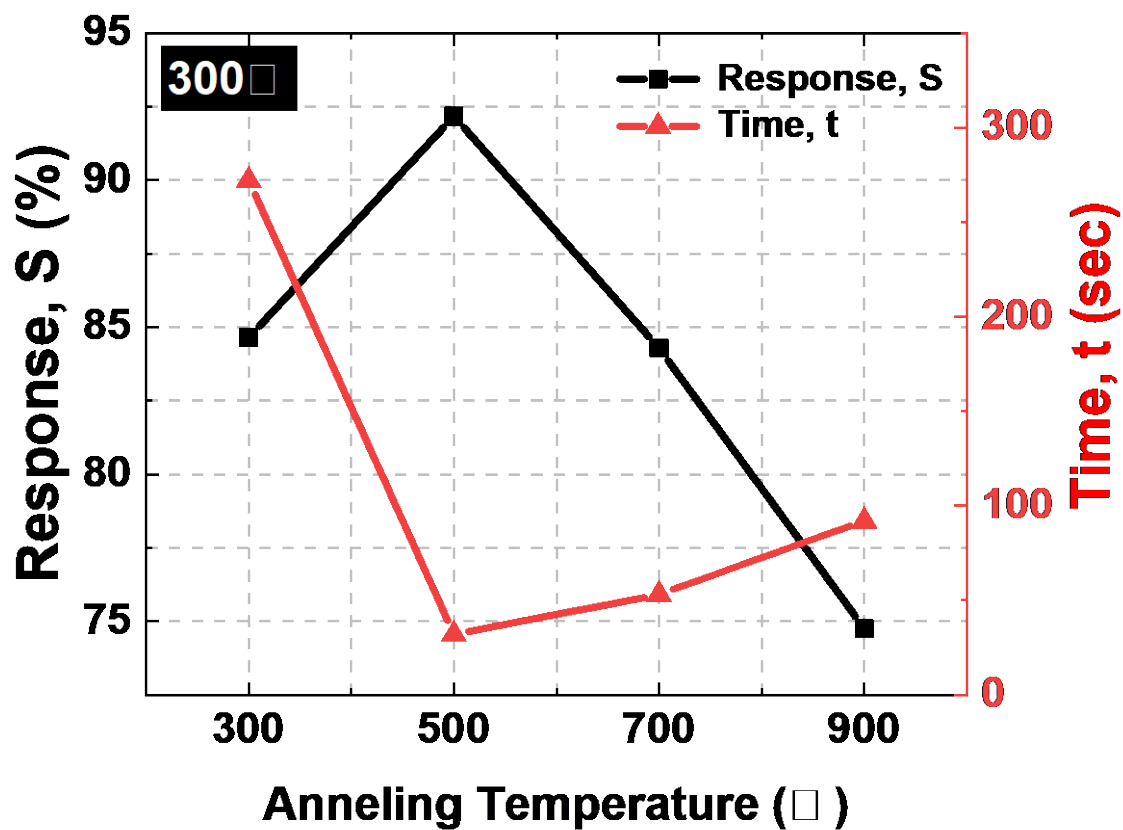


Figure S3. Hydrogen response and time for annealing temperature.

## References

- [1] Kang, K.M.; Choi, J.U. Growth characteristic of SnO<sub>2</sub> thin film for gas sensor with annealing treatment, J. Kor. Inst. Surf. Eng. 2007, 6, 258-261.