

# Effects of Various Toxicants on Human Health <sup>†</sup>

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<sup>†</sup> Presented at Environmental Toxicology: Impact on Human Health (Environ Tox 2021)

**Received: 5.11.2021; Revised: 18.11.2021; Accepted: 20.11.2021; Published: 30.11.2021**

**Abstract:** The present work is studied of PbO doped tin oxide (SnO<sub>2</sub>) based thick films using a screen printing technique. The pure SnO<sub>2</sub> thick film is doped 1wt% PbO at firing temperature 800°C and 900°C. Undoped and PbO doped paste are printed on alumina substrate to be used as a sensor. The sensing properties such as sensitivity and selectivity of fabricated thick films were investigated at operating temperature 200°C upon exposure LPG, acetone, and ethanol concentration in the range 0-5000 ppm. It observed that the maximum response of ethanol at operating temperature 200°C (5000 ppm) for PbO-SnO<sub>2</sub> was 88% and 80% for firing temperatures 900°C and 800°C, respectively. The response of ethanol is ~3 times more sensitive to LPG and ~2 time-sensitive to acetone for PbO-SnO<sub>2</sub> (900 °C firing temperature). Therefore the fabricated PbO-SnO<sub>2</sub> sensor may use for selective detection of ethanol over LPG and acetone.

**Keywords:** PbO-SnO<sub>2</sub>; ethanol; sensitivity; selectivity; sensor.

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## Funding

This research received no external funding.

## Acknowledgments

This research has no acknowledgment.

## Conflicts of Interest

The authors declare no conflict of interest.