

With support from the National Institutes for Occupational Safety and Health SBIR Program, Synkera Technologies has completed preliminary development of a sensor technology that it is well suited for the measurement of End of Service Life Indication (EOSLI) in respirator cartridges. The sensors are based upon a unique blend of nanostructured, semiconductor materials wherein the selectivity has been specifically “de-tuned” in order to allow detection of an extremely wide range of toxic gases, including organics, acids, bases, oxidizers and reductants. Compared to the sensitivity to the target analytes, the sensors show approximately no response to carbon dioxide (CO<sub>2</sub>) or changing levels of relative humidity.

The combination of these materials with Synkera’s exclusive, patented microsensor platform allows for the fabrication of

miniature, robust, reliable sensor chips that are extremely well suited for the target application. The scalable nature of the manufacturing process suggests that sensors could be fabricated and sold in large volumes for extremely low cost.

The response of the sensors to several common classes of chemicals are shown in Figure 1 and Figure 2.

Joint development partnerships are being sought to further advance and qualify this sensor technology for EOSLI applications. For more information, please contact Synkera Technologies.

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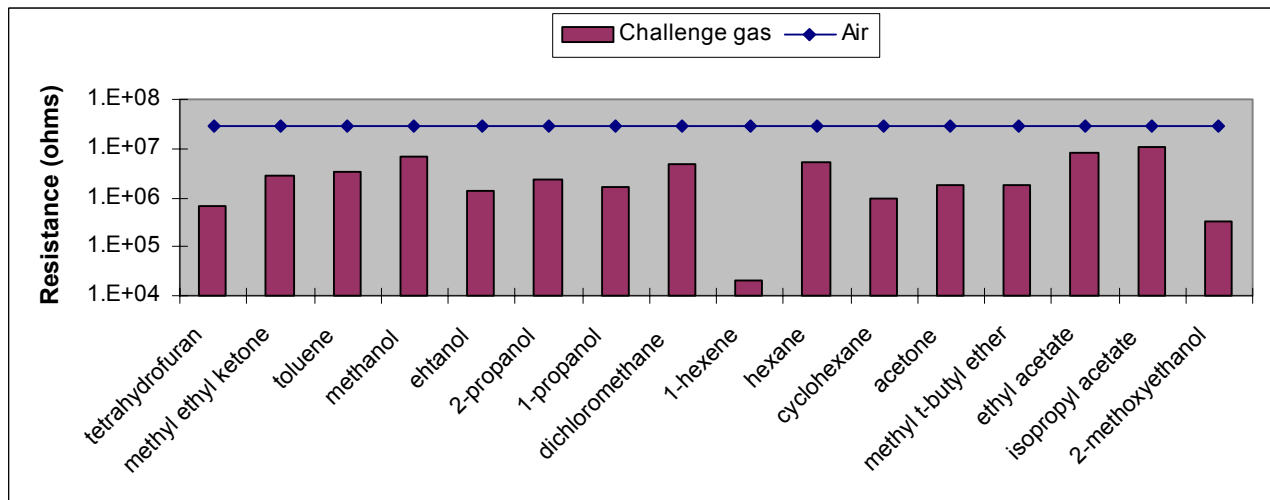


Figure 1: Respirator sensor response to 100 ppm of varying solvent vapors

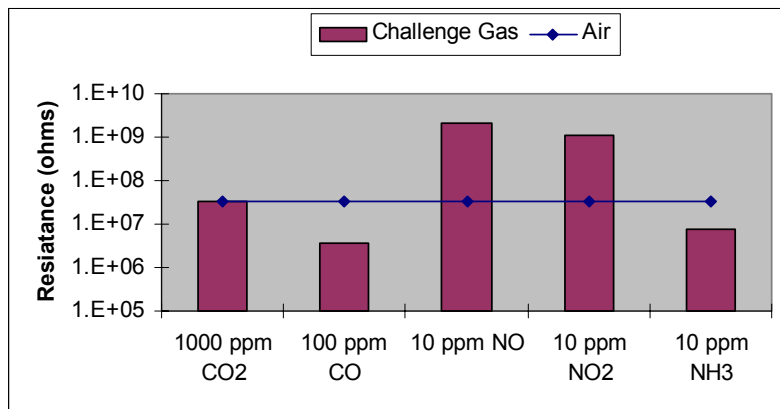


Figure 2: Respirator Sensor Response to a few inorganic gases



Figure 3: Blank micromachined substrates for sensor arrays.