

8 秒、回復時間( $T_{20}$ )為 66 秒，對  $H_2S$ 、 $H_2$ 、 $CH_4$  等氣體所造成的干擾性並不大。 $SnO_2$  感測材料對 CO 氣體的感受度並不佳，反而是對  $H_2S$  氣體具有相當高的感受度，在 10ppm  $H_2S$  濃度時其感受度就可達到 40 倍。 $ZnO$ 、 $SnO_2$  兩種感測材料對  $CH_4$  氣體幾乎是沒有感受度。

關鍵詞：一氧化碳感測器、網印法、半導體型、氧化鋅( $ZnO$ )、二氧化錫( $SnO_2$ )

## Abstract

The purpose of this research is to develop a semiconductor type CO sensor by using thick film screen printing method. The successful approach allows for the production of simply manufacture processes, small, geometrically well-define sensors that are reliable and mechanically robust. Individual sensor cost is also greatly reduced because the sensors are batch fabricated. The  $ZnO$  and  $SnO_2$  mixture powders were coated on  $Al_2O_3$  substrate of the sensing layer as the catalyst. The sensitivity for 50ppm CO reaches as high as 7 with 8 s and 66 s for the response and recovery time, respectively, at an operating temperature of  $220^{\circ}C$ .

## 一、前言

一氧化碳(CO)是一種無色、無味的急毒性氣體，密度 0.967(空氣為 1.0)，它比空氣輕、易擴散，在空氣中 CO 最高的容許濃度為 50 ppm (Threshold Limited Value, TLV)。一氧化碳主要來源可分室內與室外二種；(1)室內：主要是燃燒源(瓦斯爐、瓦斯熱水器、香煙)不完全燃燒所致，(2)室外：主要是工廠及汽、機車所排放的廢氣。