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[摘要]

隨著科技的進步，生活品質不斷的向上提升，室內環境的設計及裝潢已成為眾人所要求的項目。根據統計，人的—築裝潢中所使用的材料、接合劑及塗料中皆含有揮發性有機化合物。其中會令人致癌的苯更是大量的充斥在生活環料、汽油、一般室內裝潢空間等。由於苯被廣泛的使用，若沒有適當的苯污染防治措施，在長期的暴露下可能會引空氣中有害物容許濃度標準」，規定苯之八小時日時平均容許濃度為5ppm，而美國職業安全衛生署OSHA之標準1本文利用微機電（Micro-Electro-Mechanical Systems，MEMS）製程製作苯氣體感測器，其結構包含三氧化鎢（\沉積三氧化鎢薄膜，經由退火處理來得到較為完整之結構，並用蒸鍍方式製作白金加熱器及指叉電極。實驗所得至同工作溫度下其濃度與感測層電阻間相互之關係及感測器靈敏度測試，並討論其結果。實驗結果顯示三氧化鎢薄膜確實會與苯產生作用而改變其電性，當濃度增加時其電阻值也會相對的做出降低的反應限值及較快的反應速度。但操作在350℃的感測器需要較長的時間達到穩定值，而穩定值跳動的範圍也較大。

[英文摘要]

Benzene (C₆H₆) is a highly important commercial chemical due to its chemical activity, high purity and relative serious concerns in environmental health due to its toxicity and carcinogenic properties, even at low concentratic Administration) has established a permissible Time-Weighted-Average exposure limit of 1 ppm. This paper describes the preparation of tungsten trioxide (WO₃) thin films by the reactive RF magnetron sputte microstructure, chemical and electrical properties of WO₃ thin films formed by reactive magnetron sputtering are pressure, and RF power. The films are then stabilized by annealing in dry air. The platinum catalytic filter were di benzene. The characterists of their structural properties were presented by means of XRD measurements and th were operated at the temperature range from 250 to 350℃ to analyse the effect of working temperature on their response and highly detective limit of concentration at 350℃.

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