

## 测定DMMP的PMPS-QCM传感器的研究

作者: 胡佳, 杜晓松, 谢光忠, 应智花, 刘忠祥, 蒋亚东

单位: 电子科技大学

基金项目:

摘要:

研究了新型敏感材料PMPS对神经性毒剂模拟剂甲基磷酸二甲酯(DMMP)的响应特性。在石英晶体微天平(QCM)的电极上滴涂上PMPS溶液得到敏感膜, 发现QCM当响应、恢复时间为30-60s时, 可以产生大约11.83Hz/ppm的频率响应, 理论上LOD为0.25ppm, 并具有较好的重复性和选择性。该实验结果表明, 与PVDF相比, PMPS是一种更适宜检测DMMP的敏感材料。

关键词: PMPS; 石英晶体微天平; 甲基磷酸二甲酯; 气体传感器

## DMMP Gas Sensitivity of QCM Sensors Based on PMPS Films

**Author's Name:** HU Jia, DU Xiao-song, XIE Guang-zhong, YING Zhi-hua, LIU Zhong-xiang, JIANG Ya-dong

**Institution:** University of Electronic Science and Technology

**Abstract:**

A new sensitive material PMPS was investigated for the response to DMMP. The novel quartz crystal microbalance (QCM) sensors were prepared by dip-coating method using PMPS solution to get sensitive layers. It shows that QCM can provide about 11.83Hz/ppm frequency shift and 0.25ppm LOD in theory with reacting/dissolving time 30-60s. The QCM sensors coated with PMPS films also present a good selective and repeating ability. This result indicates that compared with PVDF, PMPS is a preferable sensitive material for chemical warfare agent detection at room temperature.

**Keywords:** PMPS; QCM; DMMP; gas sensor

投稿时间: 2010-03-29

[查看pdf文件](#)