

基于谐振型SAW传感器的呼吸检测系统设计

作者: 王乐, 王镛, 於锦, 王平, 胡燕姝, 应可净

单位: 浙江大学生物医学工程系, 生物传感器国家专业实验室

基金项目: 浙江省重大科技攻关项目

摘要:

人呼吸中VOCs的种类及含量与人的身体状况有关, 对其的检测可用于疾病的诊断。本研究利用谐振型声表面波传感器, 开发出一套可用于对人呼吸中VOCs进行检测的系统。本文首先介绍了该系统的组成及原理, 并对系统的关键环节进行了测试。在此基础上, 系统对多组测试样本进行了实验, 实验结果初步表明, 本系统可对ppb级的VOCs测试样本进行直接检测, 已经具备对人呼吸中VOCs的检测条件。

关键词: 谐振型声表面波传感器, 呼吸检测, VOCs

The Design of a Detecting System for Breath Based on SAW Resonator Sensor

Author's Name:

Institution:

Abstract:

The varieties and amount of Volatile Organic Compounds (VOCs) in human's breath are relevant to the health state of human body, and it can be used in disease diagnosis. A kind of uncoated surface acoustic wave (SAW) resonator sensor is presented to develop a system, which can detect the VOCs in human's breath. In this article, the composition and principle of this system is introduced, and the key parts of the system were tested. Several experiments were carried out to test the feasibility of the system. The preliminary experimental result shows that this system can detect VOCs at ppb level concentrations directly, which demonstrate the potential and prospect for the application of human breath examination.

Keywords: SAW Resonator Sensor, Breath Examination, VOCs

投稿时间: 2010-09-20

[查看pdf文件](#)