

结合气体浓缩的 2B电子鼻伤口病原菌快速检测

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摘要:

针对在电子鼻伤口病原菌检测中, 由于特征气体浓度低, 电子鼻识别效果不好的问题, 设计并实现了一个基于固体吸附/热解吸技术的气体浓缩系统, 该系统由流速控制单元、温度控制单元和填装混合吸附剂的吸附管构成。对测试数据的主成分分析和层次聚类结果表明, 结合气体浓缩的电子鼻系统, 对伤口病原菌的区分能力得到明显提高, 可进一步用于伤口感染实时检测

关键词: 电子鼻 病原菌 固体吸附/热解吸 层次聚类 伤口感染

0BRapid Detection of Wound Pathogen by Enose with a Gas Condensation Unit

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Abstract:

A solid trap/thermal desorption based odorant gas condensation system has been designed and implemented for the reason that in wound pathogen detection by enose the recognition effect is bad due to the low concentrations of VOCs. The developed system consists of a flow control unit, a temperature control unit and a sorbent tube packing with multi adsorbents. The results of principal component analysis and hierarchical cluster analysis of experimental data indicate that the gas condensation together with the enose system can significantly enhance the ability of distinguishing wound pathogen, and this integrated system can be used in wound infection real time detection.

Keywords: enose, pathogen, solid trap/thermal desorption, hierarchical cluster, wound infection

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