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一种低温光声光谱检测系统

作　者：周章渝, 吴次南, 董昌文, 肖寒, 傅兴华

单　位：贵州大学理学院

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摘　要：

摘要：本文报道了一种可工作在液氮温度下的低温光声光谱检测系统。本系统以大功率氙灯与单色仪联用作为光源，采用光纤导入技术和双腔结构，优化的光声池设计和专门设计的系统控制软件，实现了300～800nm的扫描范围，1 nm的分辨率。实验检测室温和液氮温度下吸收系数约为1碳黑的光声光谱，表明本系统在低温下具有较灵敏的响应特性。

关键词：低温光声光谱系统；光声池；　氙灯

A cryogenic photoacoustic spectrometer system

Author's Name:

Institution:

Abstract:

Abstract：In this paper we represent a cryogenic photo acoustic spectrometer system . This system uses a high power xenon lamp coupled with monochromatic as the light source , optimized the design of acoustic pool with optical fiber technology and double cavity structure, which controlled by the software based on Visual Basic language interface technology. These skill advantages makes it come true that the scanning ranges from 300 to 800 nm and 1 nm resolution in liquid nitrogen temperature. The system was respectively applied to measure photoacoustic spectroscopy of Carbon at liquid nitrogen temperature and room temperature, and the results showing that it has relative sensitive response at low temperature.

Keywords: cryogenic photoacoustic spectrometer system; acoustic pool; xenon

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联系电话：025-83794925；传真：025-83794925；Email: dzcg-bjb@seu.edu.cn ；　dzcg-bjb@163.com　邮编：210096
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