

一种抗干扰穿戴式血氧饱和度监测仪的研制

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摘要：

为实现动态环境下人体血氧饱和度的实时监测，研制了一种穿戴式血氧监测仪。采用D/A数模转换控制LED双光源交替发光，以光频转换接收头作为传感器，将光强信号转换为频率信号，直接送入单片机采集；根据反射式原理计算得到结果，通过无线方式发送数据。针对动态环境下获取的光电容脉搏波中掺杂的运动干扰，提出了血氧干扰分离自适应对消算法，以消除运动干扰对计算结果的影响。设计实现了设备的小型化，提高了其可穿戴性，具有抗运动干扰的能力，能准确的获取血氧信息，适合在日常动态环境下的实时监测。

关键词：血氧饱和度 反射式 运动干扰 动态监测

Design of an anti-noise wearable pulse oximetry

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Abstract:

A wearable pulse oximetry was designed for real time measuring of oxygen saturation in motion condition. Digital-to-Analog converter was used to control LED which gives out light of different color alternately. The light reflected from body was collected by Optical-to-Frequency converter whose output was sent to MCU directly, and then the calculation result was transmitted wirelessly. An algorithm aiming at removing motion noise mixed in PPG signal was designed to get accurate result. This device is suitable for real time monitoring in daily motion condition for its miniature design and anti-motion artifact ability.

Keywords: oxygen saturation;reflective ;motion artifact;dynamical monitoring;

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