ABSTRACT

This abstract highlight the development of a pulse oximeter utilizing the Arduino Uno microcontroller board. A pulse oximeter is a medical device commonly used to measure a person's oxygen saturation level and heart rate. The objective of this project is to design an affordable and accessible pulse oximeter using open-source hardware and software.

The pulse oximeter is a non-invasive medical device used to measure oxygen saturation levels (SpO2) and heart rate. In this study, we developed a pulse oximeter using Arduino Uno microcontroller and MAX30100 sensor. The system was designed to emit specific wavelengths of light into the tissue, detect the transmitted light, and calculate SpO2 based on the ratio of absorbed red to infrared light. The Arduino Uno facilitated data processing, display integration using an LCD display, and communication with an I2C module.