ABSTRAK

Penelitian ini bertujuan untuk merancang dan membangun sebuah prototype *Infant Warmer* otomatis berbasis mikrokontroler Arduino UNO yang dilengkapi pemanas inframerah sebagai penghangat dan blue light sebagai terapi tambahan bagi bayi dengan risiko hiperbilirubinemia. Sistem ini dilengkapi sensor DS18B20 untuk memantau suhu bayi dan DHT11 untuk mengukur suhu serta kelembaban lingkungan, dengan output tampilan LCD dan sistem peringatan buzzer. Alat diuji menggunakan media kain lembab sebagai simulasi tubuh bayi, dengan jarak pemanas 60 cm dan pengujian dilakukan di ruang ber-AC bersuhu 24–26°C. Hasil menunjukkan alat mampu menaikkan suhu sampel dari 22°C ke 35°C dalam waktu ±48 menit, dengan kendali otomatis heater dan fungsi alarm berjalan sesuai logika sistem. Dengan fitur ganda dan harga terjangkau, alat ini berpotensi menjadi solusi alternatif penghangat bayi untuk keperluan edukatif dan pengembangan teknologi kesehatan sederhana

Kata Kunci: *Infant Warmer, Arduino UNO, Inframerah, Blue Light, DS18B20,*

ABSTRACT

This study aims to design and develop a prototype of an automatic Infant Warmer based on the Arduino UNO microcontroller, equipped with an infrared heater as the primary heat source and blue light therapy as an additional treatment for infants at risk of hyperbilirubinemia. The system integrates a DS18B20 sensor to monitor the infant's temperature and a DHT11 sensor to measure ambient temperature and humidity, with output displayed on an LCD screen and supported by a buzzer warning system. The device was tested using a damp cloth as a simulation of a baby's body, with a 60 cm distance between the heater and the sample. Testing was conducted in an air-conditioned room with an ambient temperature of 24–26°C. The results show that the device successfully raised the sample temperature from 22°C to 35°C in approximately 48 minutes, with the heater and buzzer operating automatically based on programmed conditions. With dual functionality and low production cost, this prototype has the potential to serve as an alternative solution for educational purposes and low-cost healthcare technology development.

Keywords: Infant Warmer, Arduino UNO, Infrared Heater, Blue Light, DS18B20