Development of bilirubin jaundice (*BiliDice*) device for neonates

Mohd Azrul Hisham Mohd Adib¹,* , Mohd Hanafi Abdul Rahim¹, Nur Hazreen Mohd Hasni²

¹Medical Engineering & Health Intervention Team (MedEHIT), Human Engineering Group, Faculty of Mechanical Engineering, Universiti Malaysia Pahang, 26600 Pekan, Pahang, Malaysia
²Family Health Unit, Pahang State Health Department, Jalan IM 4, 25582 Bandar Indera Mahkota, Kuantan, Pahang, Malaysia
*Corresponding e-mail: azrul@ump.edu.my

ABSTRACT

In Malaysia, generally the blood samples are taken and various laboratory experiments are performed to determine the exact jaundice level for newborn. As the process is repetitive, it causes trauma to infants and also requires experts to perform the test. In this paper, the bilirubin jaundice so-called *BiliDice* device is proposed. The device consists of three main components: RGB colour sensor, microcontroller, and LCD display. The advantage of this prototype is affordable and portable. This device is simple, easy to handle, fast and accurate readings for the bilirubin level of the newborn.

KEYWORDS

Neonatal jaundice; bilirubin; color sensor; Arduino uno; phototherapy
ACKNOWLEDGMENT

A big thank you dedicated to University Malaysia Pahang (UMP) for providing us with a good environment and facilities in order to complete these research activities. By this opportunity, we would like to thank Mr. Idris Mat Sahat from Human Engineering Group, Universiti Malaysia Pahang for sharing valuable information in accordance with our research interest. We would face many difficulties without his assistance.