ABSTRACT

The skin is an organ throughout the human body that covers almost the entire surface of the body. As the outermost organ in the body, human has the skin as a recipient of touch or external stimuli such as radiation, mechanical factors, chemicals, and invasion of the external environment. Human skin has become the subject of great interest in various fields of science and technology. Therefore, this study aims to design a classification system for the color and type of skin disorders using the TCRT5000 sensor. This skin condition classification system is based on Fitzpatrick's skin type references in categories (Light Brown, Brown, Dark brown). This skin detection is carried out intensively by using a light emitter which is then captured by a phototransistor and displayed by a serial monitor. In the end, this leather design can classify certain skin colors and types of skin disorders, where the output values for light brown are in the 0.273-0.376 V range, brown in the 0.195-0.263 V range, and dark brown in the 0.146-0.21 V range. While the output value for acne skin disorders is in the range of 0.136-0.215 V and Keloid is in the range of 0.156-0.374 V. Prior to detection, there is a validation process for the color and type of skin disorder in each participant.

***Keywords**: Skin, near infrared, skin color, skin disorders.*