Color Quantification of Skin Pigments using Simple Dermatoscope System

Aulia Nasution* and Titis Navyana*

*Photonics Engineering Laboratory
Department of Engineering Physics - FTI
Institut Teknologi Sepuluh Nopember
Kampus ITS Sukolilo, Surabaya 60111 Indonesia

*Corresponding Author’s E-mail: anasution@ep.its.ac.id, aulia.nasution@fulbrightmail.org

Abstract

Skin is one of the most important part of human body, as it acts as protection and barrier of human body to its environment. The state of skin's health can be represented by its color, as it is influenced by several pigments: among others melanin, erythema, and carotene. Color is one of the features to be extracted from dermatoscopic images, which provides important diagnostics informations explaining patient's skin health. In this paper, efforts to develop a simple but accurate color dermatoscopic quantification system, based on the CIE L’ab’ color space. Quantification was done from images taken by self-made dermatoscope, which was constructed from plastic container and equipped with LEDs lighting and Logitech C-525 webcam. A skin tone chart was then used to calibrate the proposed system prior to utilizing it for quantification purposes, i.e. in determining melanin-, erythema-, and carotene indexes of skin of the volunteers.

Keywords: Digital Dermatoscopy; Color Quantification; Image Processing ; Skin Pigments;

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