

〈教育セミナー〉
(皮膚と毛髪の色科学)

皮 膚 色 の 計 測

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Measurement of Skin Color

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Abstract

In the fields of dermatology and cosmetic science, an increasing number of researchers are quantifying skin color with opto-electronic instruments such as reflectance spectrometers, because of the recent development of portable, easy-to-use, and less expensive instruments. Unlike simple physical quantities such as weight or length, however, it is not so easy to correctly evaluate and analyze skin color, since color is a three-dimensional quantity that also has psychological aspects to assess. In addition, skin color data expressed in such unusual units as $L^*a^*b^*$ and too complex theories on “color” make us irritated and uneasy in handling them. In this article, the author tried to review and outline the principle of color quantification, theoretical background of erythema and melanin indices, methods and instruments for skin color measurement, and pitfalls in analyzing skin color or spectral reflectance of the skin, by showing practical and specific examples.

Key words: skin color, $L^*a^*b^*$, reflectance spectrophotometry, erythema and melanin indices.