

〈シンポジウム〉

化粧品に心の豊かさを求めて

## 化粧の心身に対する効果の研究と脳計測の進歩

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### Progress in Brain Research on Physiopsychological Benefits of Cosmetics

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#### Abstract

The primary concerns for the utility of cosmetics are that they should show a direct effect in treating the skin and, utilizing the senses of touch, sight and smell, work on the mind and the body from the inside. All of our five senses interact with the brain. A study of the relaxing effect of fragrances using CNV component in brain wave, an evaluation method based on the changes in brain activity in response to a fragrance, demonstrated that DMMB a constituent we had discovered in the fragrance of modern roses had a very strong relaxing effect. DMMB showed this strong relaxing effect both by itself and when incorporated in blended fragrance materials. In view of DMMB's great potential as a fragrance ingredient for the skin care products which will keep the skin in a beautiful and healthy condition by acting on the mind and body from the inside. Secondly, I introduce Near-infrared spectroscopy (NIRS), which is a non-invasive optical technique that can measure concentration changes of oxygenated hemoglobin and deoxygenated hemoglobin in cerebral vessels by means of the characteristic absorption spectra of hemoglobin in the near infrared range. Using NIRS measurement during mental arithmetic task, we revealed that frontal activity was closely related to the autonomic nervous system, suggesting that functional asymmetry existed within frontal lobe. The NIRS instruments are very useful for observing non-invasively successive changes in the hemoglobin oxygenation state accompanying those in neuronal activation under natural conditions in real time.

**Key words:** brain activities, contingent negative variation, homeostasis system, near-infrared spectroscopy, hemispheric asymmetry.