

Abstracts

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Characteristic Formulations and Regulation of Stability in Cosmetics Applications

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Many kinds of emulsions have been used for various cosmetics. Because no emulsions are stable basically, many techniques for the stabilizing of emulsions have been studied.

There are 3 points for stabilizing emulsions

- 1) Preparation of homogeneous emulsion particles
- 2) Suppression of the motion of emulsion particles
- 3) Suppression of the contact of emulsion particles

In this review the stabilization methods and an example application for cosmetics are described.

In Vitro Reconstruction of 3-D Elastic Fiber in a Novel Dermal Equivalent

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Degenerative alterations of collagen and elastic fiber structures are thought to cause the wrinkles and sagging in aged skin. Three-dimensional (3-D) elastic fiber structures

are essential for determining the morphology and mechanical properties of skin, such as strength and viscoelasticity. Therefore, it is desirable to develop cosmetic ingredients that can promote the reconstruction of 3-D elastic fiber structure for replacing the aging-related damaged fibers. To examine the promoting effect on fiber formation of cosmetic ingredients, 2-D monolayer cultures of fibroblasts and 3-D dermal equivalents with a collagen gel have been conveniently used. However, elastic fiber formation in these models is insufficient. In this study, we have developed a new 3-D dermal equivalent model with dermal fibroblasts cultured in a fibrin gel *in vitro*, and applied it to evaluate the elastic fiber formation by an anti-aging cosmetic ingredient.

A Study of the Effect of Fragrances on the Impression Created by Men's Voices in the Minds of Female Subjects

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We focused on a man's voice as an element of his impression to learn if fragrance can enhance a man's charm for women. We evaluated the effect of our created

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fragrances on female subjects hearing a man's voice. We used six voices whose pitches were mechanically converted from one person's voice because it simplified the parameters of composing voices. Under non-perfume conditions we found that female subjects' preferences for and impressions of a man's voice were different, depending on the pitch of the voice. We prepared men's fragrances for the experiment. Thirty-four aroma raw materials were selected based on literature and folklore in which psychological effects were expected. An expert panel chose six raw materials which would suit men's positive image by means of sensory estimation. Among them, we found that L-muscone had a strong image of elation and charm. We prepared three men's fragrances for a body care product including L-muscone and other fragrances as raw materials. We chose Floral Sweet type and Citrus Musk type. These fragrances have a high preference and positive image for both men and women. It was found the effect of improving sawayakasa in Japanese tended to be of higher fundamental-frequency male voices in the case of using Citrus Musk fragrance, compared with non-perfume conditions. Floral Sweet fragrance showed similar tendency in cases of lower fundamental-frequency voices. Furthermore, the evaluation result of female subjects' own feelings during voice examination showed that the developed fragrances improved feelings of irritation, relief, vividness and excitement with statistically significant difference.

Imaging of Hair Damage Structure Using X-Ray Micro-Tomography

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Observation of the three-dimensional structure of human hair has been carried out with an X-ray micro-tomography system. By applying an edge-enhanced refraction contrast method, the three-dimensional detailed microstructure of hair can be observed without any preceding sample processing. It is found that micrometer-scale void-like structures in the cortex are induced by permanent waving treatments. This change in cortex microstructures seems to indicate a new aspect of hair damage, and thus the X-ray micro-tomography with edge-enhanced refraction contrast method will be a useful tool for hair research.

Treatment of Unwanted Hair and Skin Damage

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Unwanted hair is cause for concern in a woman. However, treatment for unwanted hair has given rise to damage to the skin in many cases. In this study, we investigated treatment for excess hair and its influence on the skin, by three models of electric depilators and a safety razor. Nineteen women aged from 20 to 38 were the subjects. Comparison of 3 models of electric depilators and a safety razor showed that TEWL and redness increased in most cases. With not only the safety razor but also the electric depilators, reddish tinge and inflammation were caused and skin roughness appeared. It was shown that correct skin care is important to maintain a beautiful body.