

Abstracts

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Emotional and Psychological Effects of Fragrance in Men's Skin Care

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It has been demonstrated for visual and olfactory stimuli that an increase in heart rate, skin conductance, facial electromyogram activity and breathing rate correlates with negative and/or excited emotional states and a decrease with positive and/or relaxed emotional states. It was the aim of this study to explore the psychophysiological status of emotional moods associated with use of a men's skincare range. Therefore, in a five-day habituation phase nineteen male volunteers (mean age 32 years) used three perfumed products (a shaving mousse, cleansing gel and hydrating cream) for their morning shaving routine and assessed their mood before and after by means of self-assessment manikins and a general mood estimate questionnaire. In a second study phase the psychophysiological parameters heart rate, skin conductance and facial electromyogram activity of the resting subjects were recorded after exposure to three different odors, the fragrance of the men's products of the habituation phase, a control fragrance and the solvent dipropylene glycol. During the habituation phase the cosmetics had positive effects on the mood behavior of the subjects. These positive effects could be confirmed by the objective measurements of peripheral nervous system parameters in the second study phase.

Modified Superoxide Dismutase for Cosmeceuticals

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A human Cu,Zn-superoxide dismutase was fused with a transcriptional transactivator protein transduction domain of HIV-1 to produce a novel anti-aging ingredient for cosmeceuticals, transcriptional transactivator superoxide dismutase (Tat-SOD). Stability tests and evaluation of the transduction efficacy and enzymatic activity suggest Tat-SOD is an effective active ingredient for anti-aging treatment.

A Look Behind the Salt Curve: The Link Between Rheology, Structure, and Salt Content in Shampoo Formulations

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The salt curve is well documented in the literature, whereby the viscosity of a solution initially increases with the addition of salt but then decreases with further increases in salinity. This paper examines the rheological behavior of eight common shampoo bases made with sodium lauryl ether

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sulfate or a mixture of ammonium lauryl ether sulfate and ammonium lauryl sulfate. Dynamic rheological measurements reveal that in all eight cases the salt effect is due to a variation in micellar relaxation time. The profile of the relaxation time vs. salt concentration was found to mirror the variation with salinity in measured entanglements per micelle. The roles of increased micellar branching, decreased micelle length, and increased micellar flexibility at higher salinity are outlined here.

Mapping Penetration of Cosmetic Compounds into Hair Fibers Using Time-Of-Flight Secondary Ion Mass Spectrometry (TOF-SIMS)

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In this communication, penetration of vegetable oils into hair fibers has been investigated by the TOF-SIMS (Time-Of-Flight Secondary Ion Mass Spectrometry) method. In earlier work [1], the method was found suitable to study the penetration of coconut and mineral oils into human hair. Therefore, the study has been extended to a group of vegetable oils with different types of unsaturation in the fatty acid components. Different patterns of penetration have been observed for oils of different molecular structure. The general pattern which emerges from this study is that polyunsaturated oils do not penetrate at all, or do so only sparingly into the structure of hair. Most of these molecules seem to penetrate only into the cuticular region of the hair fiber. Oils with

polyunsaturated fatty acids seem to have difficulty in penetrating hair. It is possible that these molecules do not fit into the fiber's cell membrane complexes, which are known to be the diffusion pathways in the keratin fiber. On the other hand, monounsaturated oils, such as olive oil, with more compact molecular structure seem to penetrate readily into the hair fiber.

Experimental Testing and Numerical Modeling of Human Skin

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In this feasibility study, changes in the elastic properties of skin following various skin treatments (e.g., water, skincare ingredients, etc.) were investigated using a new in vivo tensile testing method. The properties of human skin in vivo, and in particular the properties of the stratum corneum, were studied using a combined experimental-numerical approach. Tests on a small number of volunteers indicated that the in vivo testing method was sensitive to the effect of skin treatments and could distinguish their relative performances. The ingredients tested effectively made skin less stiff. Preliminary results showed that stratum corneum is highly anisotropic and that the data was in general agreement with some but not all published in vitro results, although this is the first time ever that Poisson ratios for human stratum corneum are presented.