

# Abstracts

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## SÖFW Journal Wydanie Polskie, including Journal of the Polish Society of Cosmetic Chemists, “Wiadomości PTK” Vol. 2, No. 1, 2009\*

Active Ingredients from Mushrooms and Other Fungi – from TCM to New Products in Cosmetics and Dermatology

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In traditional Chinese medicine (TCM), various fungal species are described for different dermatological and dermato-cosmetical applications. The wood-inhabiting fungus *Armillariella mellea* is used against Xerosis cutis, other fungi like *Bovista plumbea* or *Podostroma yunnanensis* in powder form against wound healing disorders. *Auricularia auricula* is regarded as a potent agent for the treatment of haemorrhoids. The use of Chinese medicinal mushrooms, e.g. extracts from *Ganoderma lucidum*, against allergic skin reactions is also described. So far, there are only few products with fungal extracts or ingredients in Western dermatology and cosmetics. Well-established is a polysaccharide from *Sclerotium rolfsii* (INCI designation: Sclerotium gum) produced by fermentation with thickening and gel forming properties. Due to its non-ionic and remarkable rheological characteristics, it seems compatible with most cosmetic primary products and perfectly suited for application in all cosmetic products from hair gels to creams. Novel products contain extracts from *Tricholoma matsutake*, *Tremella* sp., *Hypsizygus ulmarius* and other fungal species. As active components, mostly polysaccharides of different structure, but also low-molecular hydrines have been isolated contributing to skin elasticity.

Article was published in the SOFW Journal English Edition (134 I 4-2008) and may be found at: [www.sofw.com](http://www.sofw.com) -> SOFW – Journal

Modern complexing agents in homecare & cosmetic products

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Chelating agents are important ingredients of many cosmetics and household products. They prevent hardness ions in water from combining with surfactants and soils that could lead to formation hard-to-remove residues. Thus, deactivating metal ions improves efficacy of the products: detergency, clarity, rinsability. The addition of chelating agents enhances the shelf-life: prevents from entering potentially harmful or unwanted reactions, stabilizes bleaches and improves stability of cosmetic products. Due to ecological reasons, phosphate - the first complexing agents used in household products – although very effective, were in many industrialized countries withdraw and some new ones were proposed. The growing “being friendly” consciousness lead to introduction of zeolites into modern detergent formulation, which activity are support by the addition of complexing and/or dispersing agents. Much bigger problems, which researchers have been wrestling with for the last years are appropriate chelators for dishwashing detergents. Nowadays, phosphates are still used here. During the last years some new complexing agents appeared on the market. Some of them are quite strong chelators of very good biodegradability. The question is, if the strong and readily formed metal complexes are so readily biodegradable. Otherwise, the future may be in naturally occurring APCAs produced by microorganisms or plants. These both issues seem to be the subject of the research in the forthcoming years.

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\* These abstracts appear as they were originally published. They have not been edited by the *Journal of Cosmetic Science*.

Coacervation process for manufacture of modern hand dishwashing liquids.

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The attempt of analysis of the effect of hand dishwashing liquids structures on their properties in use was made. In particular, the attention was put to the formulations obtained with the use of coacervation process. Laboratory tests of studied liquids were carried out. The following parameters were assessed: cleansing properties, ability of

fatty soil emulsifying and ability to produce foam. For the liquid in the form of coacervate, changes in viscosity after dilution with water were also determined. Based on the obtained results, it was shown that hand dishwashing liquids in the form of coacervate can be an interesting alternative for typical preparations found on the market nowadays. In particular, ecological values are important – such type of formulations may serve as specific kind of “concentrate” of traditional hand dishwashing liquid. It was also shown that a consumer, by the appropriate coacervate dissolution, may control the quality of a product on his own.