SCC meets Dec. 11-12

The Society of Cosmetic Chemists annual scientific meeting to be held Dec. 11-12, 1980, will feature 40 podium and poster presentations on sunscreens, chronic toxicology, color, fragrance in cosmetics, new raw materials, and basic cosmetic sciences. The meeting will be in the Grand Hyatt Hotel. Two AOCS members are scheduled to receive awards during the meeting. George W. Panzer, assistant director for research and development at Alcolac Inc. in Baltimore, Maryland, will receive an award for the best paper presented during the SCC's annual seminar, and Stig E. Friberg, chairman of the department of chemistry at the University of Missouri-Rolla, will receive the award for outstanding contributions to basic research literature. The awards will be presented by a third AOCS member, Stephen M. Greenberg of Lipo Chemical Co., who is president of the cosmetic chemists' organization. □

Abstracts

Soaps, detergents and cosmetics

OXIDATION OF NONIONIC SURFACTANTS OF THE PLURONIC AND TETRONIC TYPES. J. Plycinski et al. *Tenside Deterg. 17*(4), 186-90 (1980). The experimental results concerning the oxidation of block polymers of propylene and ethylene oxide (test temperature 313 K) can be summarized. The oxidative decomposition is dependent to a great extent on their molecular weight, the ratio of the two alkylene oxides in the molecule as well as on the type of polymerization initiator, which decides the spatial structure and character of the polyether.

THE KINETICS OF DISSOLUTION OF NAPHTHALENE PARTICLES IN AQUEOUS MICELLAR SOLUTIONS. K. Baumgardt and M. Kahlweit. *Tenside Deterg. 17*(3), 135-8 (1980). In the literature it was claimed that in the dissolution of sparingly soluble dyes in aqueous surfactant solutions, the solubilization of the dye molecules by the micelles is the rate determining process. Other investigations however, show that this process is fast compared with the dissolution process at the surface of the particles.

SYNTHESIS AND SURFACE ACTIVITY OF SODIUM POLYOXYPROPYLATED HIGHER ALCOHOL SULFATES. J. Chiebicki and K. Slipko. *Tenside Deterg. 17*(3), 130-4 (1980). Some polyoxypropylene glycol alkyl monoethers were obtained from C_{8-18} aliphatic alcohols and propylene oxide in the presence of a base catalyst. These compounds were used to synthesize a series of sulfate-type anionic surfactants $C_nP_mOSO_3Na$. The surface tension, foaming power, wetting ability and critical micellar concentration of the aqueous solutions of these surfactants are presented as functions of the number of polyoxypropylene units in a sulfate-bearing molecule.

ANALYSIS OF ANIONIC AND NONIONIC SURFACTANTS BY THIN-LAYER CHROMATOGRAPHY. H. Bruschweiler et al. *Tenside Deterg. 17*(3), 126-9 (1980). Anionic and nonionic surfactants as used in detergents and washing powders may be separated by thin-layer chromatography on silica gel coated plates.

THE SUCCESSFUL USE OF THE DETERMINATION OF DEHYDROGENASE ACTIVITY TO EXAMINE THE BIOLOGICAL DEGRADATION OF SURFACE ACTIVE AGENTS. K. Miksch. *Tenside Deterg. 17*(3), 124-5 (1980). The investigations with several surfactants indicated that in the case of anionic surfactants and in the case of well biodegradable nonionic surfactants the microorganisms of the activated sludge are adapted to such a great extent that with increasing residence time and simultaneous increase of the dosage of the surfactants examined, the biological degradation was enhanced.

ELLIPSOMETRIC STUDY OF SURFACTANT ADSORPTION AT THE AQUEOUS SOLUTION AIR INTERFACE. H. Mang and G.H. Findenegg. *Colloid Polym. Sci. 258*(4), 428-32 (1980). Ellipsometry has been applied to study the adsorption of sodium dodecylsulfate at the air/solution interface of the surfactant in water and aqueous sodium chloride.

EFFECTS OF SURFACTANT SOLUTIONS ON HAIR FIBER FRICTION. G.V. Scott and C.R. Robbins. *J. Soc. Cosmet. Chem. 31*(4), 179-200 (1980). A capstan method using the Instron Tensile Tester is described for measuring friction of hair fibers on various reference surfaces. Other test variables examined include fiber tension, rubbing speed, fiber diameter and hair condition. The method was developed to evaluate effects of surfactants on hair fibers as part of a longer range objective to predict hair fiber assembly behavior from single fiber properties.

TESTS OF THE MECHANISM OF SOIL ADHESION AND SOIL REMOVAL IN TEXTILE FABRICS. H.-J. Jacobasch. *Tenside Deterg. 17*(3), 113-8 (1980). A resume of the mechanism of pigment adhesion to textile fabrics. The different tendencies for fabrics to attract dirt is determined mainly by the size of the dispersion and polar forces between the fabric and the soil particles. These forces can be reduced on a technical scale by the creation of porous structures, the application of sufficient amounts of cationic surfactants which lead to a zeta potential of zero and, in the case of polyester fibers, through alkali treatment.

CRITICAL MICELLE CONCENTRATION, HYDROPHIL-LIPOPHIL BALANCE, EFFECTIVE CHAIN LENGTH AND HYDROPHOBICITY INDEX OF IONIC SURFACTANTS CONTAINING TWO LONG-CHAIN ALKYL GROUPS. I.J. Lin. *Tenside Deterg. 17*(3), 119-23 (1980). The cricical micelle concentration in aqueous solution, hydrophile-lipophile balance, effective chain length and hydrophobicity index and ionic surfactants containing two long-chain alkyl groups are considered. Micellization of a mixture of a monovalent surfactant and a neutral molecule closely resembles that of a bivalent surfactant.

SELECTION OF SURFACTANTS AND ELECTROLYTES FOR THE FOAMING OUT PROCESS OF WATER/OIL EMULSIONS ON THE BASIS OF PHYSICO-CHEMICAL PROPERTIES. E. Ledochowska et al. *Tenside Deterg. 17*(4), 181-5 (1980). This paper tries to make a pre-selection of the best possible systems for the foaming-out of hydrocarbons from emulsions with the help of physico-chemical methods. Can be shown that the best substances for this purpose are solutions of ethoxylated nonylphenol and cetyltrimethylammonium bromide solutions. Results indicate that the addition of electrolytes and especially calcium chloride as well as small amounts of low aliphatic hydrocarbons in the gaseous phase will appreciably improve the foaming-out effect.

EFFECT OF SELECTED ELECTROLYTES ON THE PYRENE SOLUBILIZATION IN AQUEOUS SOLUTIONS OF 1-ETHYL-1-HEXADECYLPYRROLIDINIUM BROMIDE. K. Kralova et al. *Tenside Deterg. 17*(4), 177-80 (1980). This paper deals with investigations into the effect of selected electrolytes on the solubilization of the aromatic hydrocarbon pyrene in aqueous solutions of the cationic surfactant 1-ethyl-1-hexadecylpyrrolidinium bromide.

RECENT IMPROVEMENTS IN DETERGENT MANUFACTURE BY THE SPRAY MIXING PROCESS. O. Pfrengle. *Tenside Deterg. 17*(4), 197-200 (1980). Shown were how high surfactant contents in washing powders can be achieved when spray mixing and how the usually bulky and awkward washing powders can be made with a reasonable density, using the super-saturation process in which more liquid is sprayed on than the substrate can absorb. After adding an ultra-fine particle size zeolite, a free-flowing powder is obtained. This can be achieved with or without the addition of a spraying tower intermediate.