

Formulate Seminars

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SCS Formulate is an annual exhibition and series of presentations jointly organised by the Society of Cosmetic Scientists (UK) and Step Exhibitions. As well as exhibiting all the major suppliers of cosmetic ingredients it features a series of masterclasses on cosmetic formulation and testing; in-depth discussions on all aspects of cosmetic science and a series of 15 minute presentations on new raw materials and formulation ideas. It is this latter group that are featured here.

Presentations that always attract full audiences are those that discuss trends and new ideas in formulation. Olivier Garet, **DSM**, discussed skin care trends for 2016-17 and thought that hi-tech serums would continue to excite interest; serums can deliver continuous hydration through micro-droplets; they are used as carriers for regenerative actives from plants and microalgae and one propriety brand offers personalised genomic treatments that combine a foundation with concentrated active ingredients adapted to a customer's genetic profile. Antiaging is to be replaced by pro-aging and contouring; it appears that there is a dramatic difference in the shape of people's faces now compared to 20 years ago caused by continually looking down at phones and tablets and the result is heavier jowls and more tension in the centre of the face and back of the neck. Products aimed at improving skin firmness and sharpening facial contours were described by Garet and **DSM** offers Regu-Age PF, Revitalin and niacinamide to boost skin energy, to moisturise and to improve skin radiance. The eye area suffers from puffiness, sagging and fine lines and wrinkles and **DSM** propose Syn-Coll, [INCI: Palmitoyl tripeptide-5] with Regu-Age PF, [INCI: Glycine soja protein, hydrolyzed rice extract, superoxide dismutase] to counteract these effects.

The global trend in skin care is to protect against urban stress, said Tim Brown, **Seppic**, who described modern lifestyle protection factors or MLPFs. Urban stress manifests itself as fatigue and anxiety and prime causes are city living, stress at work and air pollution. 50% of product launches in Asia have included anti-pollution claims and this trend is now seen in Europe and the USA. Other emerging cosmetic trends in Asia Pacific includes anti-radiation and antioxidant claims and soothing and anti-inflammatory products. From North America we saw a shampoo to be used weekly to deep cleanse hair of urban pollution and a shampoo from Latin America offered DNA protection.

According to Brown 75% of adults consider lifestyle to be the most important factor in skin aging because it exposes it to climatic aggression, pollution, oxidative stress, UV and IR radiation and fatigue and poor diet. For each of these Brown described ingredients available from **Seppic** to counteract the problems caused by such issues and illustrated his suggestions with appropriate formulations.

Sue Holloway gave a whistle stop tour through some of the latest ingredients offered by **Azelis** to unlock the secret to key formulations. It included new cleansing product ideas and materials aimed at providing skin feel and moisturising in the shower and improving hair strength and moisture content in hair care. Skin care products based on active ingredients that provide benefits throughout a 24 hour period were described before Holloway moved onto clear conditioning products for the hair and softening products for the beard. Esters were suggested as alternatives to silicones and improved fake tanning products were also offered.

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According to Holloway curls are now very much in fashion but they must look natural and flexible with high volume and various styling polymers were described. For makeup, colours should be intense and long lasting and radiance and luminosity continue to be key buzz words for everything from colour cosmetics to skin care, hair care and even toothpaste. Sun care must provide a high protection factor with a light non-tacky feel and after-sun products should offer antioxidant properties to prevent free-radical skin damage. Natural materials suitable for facial scrubs are demanded by consumers and for each of these product categories Holloway was able to offer a variety of suitable materials from the **Azelis** portfolio.

With concurrent lectures it is always a problem knowing which to attend but problems of product preservation while avoiding traditional preservatives continues to concern product formulators. Non-traditional preservation and protection systems were described by Ann Steinmann, **Lonza**, who said that they are possible but Cosmetic Regulation 1223/2009/EC states “cosmetics shall not contain preservatives other than those listed in Annex V” and “For multifunctional additives, the primary function must be demonstrable at use levels recommended” Despite these requirements industry trends are moving away from traditional chemistries and Steinmann then described the Geogard range of alternative systems, which utilise listed preservatives that are not parabens, halides or formaldehyde donors. **Lonza** also offer a fragrance with antimicrobial properties and Biovert. This latter is a mixture of glucose, lactoperoxidase and glucose oxidase that when added to the product composition in two parts reacts to release hydrogen peroxide.

A presentation by Anna Crovetto, **Active Concepts**, was about the selective activity of natural antimicrobials vs. traditional preservative systems. Traditional preservatives can cause bacteria cell wall disruption killing both the ‘good’ and the ‘bad’ present on our skin, its natural microbiome. This barrier of bacteria can help protect from pathogens and potential invasion or harm. **Active Concepts** focuses on innovative peptide and triglyceride technology to deliver effective, safe and stable antimicrobial materials and Crovetto described a class of skin enzymes called histone deacetylases that could be used to preserve products without disturbing the microbiome on application.

Preservation boosting and the wonderful world of multifunctionals was the title in the programme under which Ev Seuss, **Symrise**, introduced Symsave H [INCI: Hydroxyacetophenone] as a preservative booster. After first discussing trends in product preservation and consumer rejections of traditional preservative systems Seuss described the increased efficacy of phenoxyethanol when combined with SymSave H. Seuss also described SymOcide PH [INCI: Phenoxyethanol, hydroxyacetophenone, caprylyl glycol, aqua] as a broad spectrum preservative blend with antioxidant activity and Crinipan ADS [INCI: Phenoxyethanol, climbazole, decylene glycol, 1,2-hexanediol] as an anti-dandruff active for hair care with preservative activity against bacteria, yeast and mould. It is a liquid and may be used for cold processing, which makes it suitable for shampoos.

Multifunctional was also the claim made by Markus Schroeder, **Cosphatec**, who described the potential of Cosphaderm diols for conventional and natural cosmetic formulations. They are water-soluble, colourless and odourless and have skin conditioning, emulsion stabilising and antimicrobial activity and also act as solvents and penetration enhancers. There are four

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in the range: in order of increasing particle size and antimicrobial efficacy they are Propanediol Natural; Pentiol GL/natural, Hexiol and Octiol.

Still pursuing the multi-functional theme Lars Jung, **Cremer**, described CremerCOOR products and claimed they had film forming, deodorising and moisturising, foam-stabilising, viscosity-regulating and antimicrobial properties. CremerCOOR GC8 is glyceryl caprylate with good antimicrobial properties; CremerCOOR PG2 C10 is polyglyceryl-2 caprylate used to produce emulsions with a particularly soft texture and PG4 Cocoate is polyglyceryl-4 cocoate, a non-ionic co-surfactant to add creaminess and texture to foam.

Polyglyceryl emulsifiers are increasingly popular because of their natural derivation and unique emulsifying properties. PolyAqual OS2 [INCI: Polyglyceryl-2 oleate, polyhydroxystearic acid, polyglyceryl-2 stearate] was presented by Valentina Scalabrin, **Innovacos Corp.**, as a w/o emulsifier that provides unique sensory properties and is compatible with physical and chemical UV filters and pigments. Ralf Kuschnerit. **Dr Straetmans**, discussed the glyceryl esters, Dermofeel Esmuls Plus and Symbiomuls Rich, which add sophisticated textures to emulsions.

Combining the multi-functional trend with the search for sensory textures Silke Valentin-Burzynski described Rheoluxe products from **Elementis Specialities**. The perception of textures and key performance attributes such as moisturising, skin protection, anti-aging benefits and product function are tied to flow properties and understanding rheology helps to create better cosmetics, said Burzynski. Rheoluxe are associative thickeners that increase the viscosity of aqueous systems through a system of molecular associations and interactions. Three variants were described: Rheoluxe 812 [INCI: Bis-lauryl cocaminopropylamine/HDI/PEG-100 copolymer] provides rheological control in aqueous and emulsion systems; Rheoluxe 880 [INCI: Bis-C16-20 isoalkoxy TMHDI/PEG-90 copolymer] increases viscosity of o/w emulsions while maintaining excellent skin feel and the 8015 variant [INCI: PEG/PPG-450/50 trimethylolpropane dodecyl ether] provides rheological control in Si/w and w/Si based systems and also increases viscosity in sulfate free surfactant systems.

Olivier Paquette, **Ichimaru Pharcos**, talked about meeting the consumer need for innovative textures using the natural thickeners and gel formers of the **Safic-Alcan** range. Two materials discussed were different grades of xanthan gum with different particle size, hydration and dispersion rates. Both are good suspending agents that show a high degree of pseudoplasticity and are very salt and pH tolerant. Other materials discussed were Safiguar, [INCI: Cyamopsis tetragonoloba (guar) gum] and Safimix, which is a mixture of guar gum and xanthan, and various alginates that comprise the Safalgin range.

Lorna Radford, **Aston Chemicals**, described the surprising textures that can be achieved using materials distributed by **Aston**. This included a stringy, springy bath jelly, described as a foaming, cleansing shower product with a texture halfway between a jelly and a putty. Polysaccharide patches and various facial masks were also presented with formulations.

Returning to trends, Barbara Brockway, **IMCD**, suggested that Korean skin care trends were taking over the beauty industry. Asian consumers think positively about age, they fear pollution, lack time and follow a new minimalism. Brockway showed various retail products

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to illustrate this theme and discussed the ingredients available from **IMCD** that could be used to replicate the product properties. Echoing the Seppic presentation Brockway said that humans have not had time to evolve defences against the modern world and new product launches are aimed to protect against harsh elements, pollution, smoke, environmental aggressors and urban damage. Various anti-pollution ideas were proposed and the presentation ended with food inspired textures; a trend driving Asian skin care as food promotes a safe and natural image.

Staying in Asia, Ruth Borner, **Lehvoss**, discussed stem cells obtained from Korean ginseng. After isolating the active components of plants they are produced by fermentation and culture processes. The result is a material that promotes collagen synthesis and inhibits MMP-1 and MMP-9 expression. Other materials are also used such as Mung Bean ferment from *Lactobacillus* sp. It has a moisturising action that accelerates barrier recovery and maintains homeostasis plus a powerful anti-inflammatory action that reduces redness and pain.

Redness and pain are symptoms associated with sensitive skin, which was the subject discussed by Ev Suess, **Symrise**, and apparently globally 60% of consumers claim they have sensitive skin of which 35% have oily skin and 19% dry skin. The majority of people with sensitive skin are concerned about product ingredients and look for “free from” parabens, silicones and PEGs. For the major markets of the world **Symrise** has developed five core products that meet the demands of these consumers for a cleanser, a body lotion, a skin brightening and calming cream and a high SPF cream.

Stem cell research and biotechnology play an increasingly important part in creating new active cosmetic ingredients. **Lucas Meyer** had SWT-7 described by Irina Deloire as an extract of *Swertia chirata* that can be used for wound healing as it increases keratinocyte production and epidermal thickness. Newaple from **Bioland** is an extract of *Artemisia princeps* that is used in Korean medicine and has anti-inflammatory properties. The production of active plant cells at **Naolys** was described by Sonia Leglise who also showed the cell constituents and listed the many plants used and the properties of the active materials extracted from them.

Sun protection remains an important issue but Lucyanna Barros, **Bicosome**, described extending skin protection beyond UV radiation. Her concern was that visible and infra-red light penetrates deep into the dermal layers and although the energy of IR photons is not high enough for radical production, biological systems accumulate the IR energy up to a level that is sufficient to produce free radicals. **Bicosome** has developed a UV and IR protection complex named Bicotene Antiox that is able to reach the deeper layers of the epidermis to deliver a combination of stable carotenes and antioxidant vitamins. It neutralises any free radicals present, protects collagen from degradation and accelerates skin recovery after exposure.

Sun exposure dulls complexions and causes age spots. Jamie Jones, **Gattefossé**, discussed Gatuline Spot-Light, a mixture of *Actinidia chinensis* (Kiwi) fruit and *Sophora flavescens* root extracts aimed at inhibiting melanin synthesis and reducing the visibility and number of age spots. The use of Neem (*Melia azadirachta*) leaf extract to brighten the complexion and

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reduce wrinkles was presented by Olivier Paquette, **Ichimaru**. It reduces melanin granules in the corneocytes and significantly reduces pigmentation.

Other presentations regarding sun protection and skin lightening included that by Albert Cavillo, **Lipotec**, on Brightlette. François Marchio, **Syntheon**, discussed Synastol TC, a material derived from Terminalia chebula fruit extract that is clinically proven to reduce signs of aging, pigmentation and dark circle under the eyes.

Although skin care still appears to excite the most interest in new ingredient technology, hair care is still a vibrant market and Roman Ott, **Rahn AG**, took delegates back to the roots under the title Formulator's Secrets 3. Virgin hair has a very compact structure, is properly sealed against external influences and shows a natural hydrophobicity. Aged and stressed hair shows a more open structure, combing forces are increased and hydrophobicity is reduced. Perming, bleaching and aging all result in increased hair porosity and loss of normal moisture control and Ott suggested that adding 0.5% Eldew PS-203 [INCI: Phytosteryl/octyldodecyl lauroyl glutamate] to a shampoo or conditioner would result in a general improvement in hair condition by restoring its natural barrier and moisture control properties.

The prize for the longest presentation title went to Peter Clark, **Innospec**, "Cleansing formulations containing Iselux sulfate-free surfactant and conditioning polymers can form coacervates for dilution-deposition conditioning" Iselux, [INCI: Sodium lauroyl methyl isethionate] is a mild surfactant that gives a dense creamy foam, makes clear or opaque formulations and may be thickened with salt, betaines and other amphoteric. Clark presented numerous test results that showed how guar hydroxypropyltrimonium chloride and polyquaternium-10 were deposited from various shampoo systems more readily and were more substantive to hair from Iselux-based systems than from systems based on commonly used anionic surfactants.

With the move from petro-chemicals to agricultural ones as the source of many cosmetic materials the talk by Aaron Reber, **Natural Plant Products, Inc.**, about measuring environmental impact of agriculture-sourced materials was of great interest. His company is an association of 50 farms in Willamette Valley of Oregon that grow botanicals such as meadowfoam, daikon, sweet almond, canola, sunflower and avocado. Their concerns are sustainability and environmental impact and their vision is to champion solutions for tomorrow's safe, accessible, and nutritious food, fibre and fuel in thriving ecosystems. This is done under the title "field to market" and members are committed to creating opportunities across the agricultural supply chain for continuous improvements in productivity, environmental quality, and human well-being.

There were many other presentations of which the above is just a representative selection.

Note: Only the principal ingredients are shown in the INCI lists and those interested are strongly advised to seek further information from the supplier.

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