Shiseido Wins Top Award at 25th IFSCC Congress in Barcelona

Shiseido Co., Ltd. won top honors in the Oral Presentation category at the 25th IFSCC Congress held from October 6-9, 2008 in Barcelona, Spain. IFSCC Congresses are recognized as the most authoritative meeting in which cosmetic scientists from around the world gather for the presentation of cutting-edge cosmetic science and technology-related research. This marks the second consecutive win following the previous Congress and the 10th time for Shiseido to receive such honors, which is the most ever awarded to a Japanese cosmetics manufacturer.

At this year’s Congress, there were a total of 405 competition entries (68 entries in the Oral Presentation category and 337 entries in the Poster Presentation category) from 38 countries throughout the world. Top honors were respectively awarded in the Basic Research, Applied Research (Oral) and Poster Presentation categories.

Outline of Presentation Receiving Top Award

- Theme: Development of high water-resistant / detergent-washable powder coated with a pH-responsive polymer and its application to suncare products
- Presenter: Tomo Osawa, Research Scientist, Shiseido Research Center
- Summary: Successful development of a new suncare product that has the dual properties of being water resistant and easily washed off

Suncare products require a high degree of water resistance given the usage situation and thus contain hydrophobic-treated UV protective powders. On the other hand, since the powder is hydrophobic, this generally makes it difficult to wash off completely using ordinary detergents; therefore, a special cleansing agent has been necessary. Shiseido has been conducting research and development aimed at developing a new suncare product that has a high degree of water resistance and is easily washed off.

Shiseido focused on the fact that the pH of ordinary cleansing agents during washing is alkaline. Researchers hypothesized that by coating the powder with a pH-responsive treatment agent it would demonstrate hydrophilicity under alkaline conditions while being highly hydrophobic (i.e., water resistant) when formulated in a sunscreen and applied to skin (acidic ~ neutral). Therefore, the powder becomes hydrophilic during cleansing (alkaline condition) and can be easily washed off.

Shiseido applied a pH-responsive polymer, which was reported in a research paper at the time this research began, to a powder-treating agent and optimized polymer conformation in order to obtain the desired function. Within the course of these results, in order to develop a pH-responsive polymer as a powder-treating agent, Shiseido collaborated with Japan's Hyogo University, which has intensively studied various kinds of functional polymers, including pH-responsive polymers. Shiseido designed and synthesized AMPS/MAU (2-acrylamide-2-methylpropanesulfonic acid and 11-methacrylamide-undecanoic acid) copolymer and confirmed that it is hydrophobic under neutral conditions and becomes hydrophilic under alkaline conditions. Next, Shiseido newly developed pH-responsive AMPS/MAU-treated titanium oxide by coating the surface of the UV protective
powder titanium oxide with the AMP/MAU copolymer. Shiseido confirmed that a suncare product formulated with this new pH-responsive powder has the same level of water resistance as a suncare product containing conventional hydrophobic powder and at the same time can be completely washed off using ordinary soap.

*1 IFSCC (The International Federation of Societies of Cosmetic Chemists)
In 1959, cosmetics chemists from 8 countries founded the IFSCC. The organization currently has approximately 15,000 members in 45 countries. IFSCC Congresses are held once every two years on even-numbered years.

*2 pH-responsive: Hydrogen ion concentration index in which a low pH indicates acidity and a high pH indicates alkalinity. pH-responsiveness indicates the different properties of the pH of aqueous solutions (acidic, neutral and alkaline).

Top Awards Received by Shiseido

1976 (9th Congress, Boston, USA) Research into, and application of, water-in-oil emulsions stabilized with amino acids or their salts (Oral Presentation)

1986 (14th Congress, Barcelona, Spain) Development of a new type of colored nacreous pigment (Oral Presentation)

1988 (15th Congress, London, UK) Elucidating body malodor to develop a novel body odor quencher (Oral Presentation)

1990 (16th Congress, New York, USA) Development of a new W/O-type nail enamel (Oral Presentation)

1992 (17th Congress, Yokohama, Japan) Measurement method of efficacy of anti-dandruff cosmetics and development of a new active commercial product (Oral Presentation)

2000 (21st Congress, Berlin, Germany) Research related to dermal-epidermal basement membrane care (Oral Presentation); Development of super-rapid drying “dip in water” nail enamel (Poster Presentation)

2002 (22nd Congress, Edinburgh, UK) Development of “Skincare Powder” as an ingredient inhibiting dry skin (Oral Presentation)

2006 (24th Congress, Osaka, Japan) How can we improve the appearance of conspicuous facial pores? (Poster Presentation)

2008 (25th Congress, Barcelona, Spain) Development of high water-resistant / detergent-washable powder coated with a pH-responsive*2 polymer and its application to suncare products (Oral Presentation)

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