Press release

Evonik honored with Shaw Mudge Award at NY SCC Scientific Meeting

December 19, 2012

The New York Society of Cosmetic Chemists (SCC) honored scientists from Evonik's Personal Care Business Line with the Shaw Mudge Award for best paper presented at SCC's annual scientific meeting and technology showcase.

Properties of cosmetic emulsions such as appearance, texture, sensory aspects, water resistance, high-temperature stability and overall robustness against critical additives depend on the nature of liquid crystalline structures. In the new research, the Evonik scientists systematically explore the formation of liquid crystalline networks in two emulsion systems, along with the influence of co-emulsifiers and oils. "Lamellar bilayers, formed by combinations of emulsifiers and consistency modifiers, are classical ways for stabilizing cosmetic emulsions. We systematically studied the formation of lamellar structures for a new PEG-free O/W emulsifier (Polyglyceryl-3 Dicitrate/Stearate) and effects of additives on the formation of lamellar networks in emulsions. Our studies revealed that Polyglyceryl-3 Dicitrate/Stearate forms such liquid crystalline structures even without consistency enhancers. This finding explains why this emulsifier can be used without additional consistency enhancers for manufacturing stable O/W (oil-in-water) lotion systems," said Juergen Meyer, Ph.D. Head of Innovation Management, Cosmetic Ingredients Leave-On, Evonik Industries.

"Some bilayers are structured like onion layers around the emulsion droplets; some bilayers are present in the form of small vesicles in the aqueous phase of the emulsion. We were able to demonstrate that the consistency in cosmetic emulsions is built up by the steric interaction of these structures. In order to prove the existence of bilayers of a thickness of 4-8 nm bilayers in cosmetic emulsions and to show their impact on emulsion properties, we used a wide variety of technologies such as electron microscopy, neutron scattering and rheological measurement. Our findings actually lead to a revised model of how cosmetic O/W emulsions are structured."

Titled "Understanding the Influence of Emulsifiers, Emollients and Additives on Lamellar Phases in Cosmetic Emulsions," the paper was

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mainly authored by Juergen Meyer, Ph.D. of Evonik Industries. Co-authors were Verena Dahl, Ph.D. and Joachim Venzmer, Ph.D. as well as Brajesh Jha, Ph.D. also working for Evonik Industries. The publication is scheduled for the Journal of Cosmetic Science.

"We would like to thank the Board of Directors of the SCC and the Awards Committee for this prestigious recognition. For us, this award is a great encouragement to continue with our studies, trying to understand and describe the nature of the bilayer structures in cosmetic emulsions in a more accurate way," Dr. Meyer, Head of Innovation Management for Cosmetic Ingredients Leave-On said. Comprised of over 4,000 members, the Society of Cosmetic Chemists was founded in 1945 to promote high standards of practice in the cosmetic sciences.

Company information

Evonik, the creative industrial group from Germany, is one of the world leaders in specialty chemicals. Profitable growth and a sustained increase in the value of the company form the heart of Evonik's corporate strategy. Its activities focus on the key megatrends health, nutrition, resource efficiency and globalization. Evonik benefits specifically from its innovative prowess and integrated technology platforms.

Evonik is active in over 100 countries around the world. In fiscal 2011 more than 33,000 employees generated sales of around €14.5 billion and an operating profit (adjusted EBITDA) of about €2.8 billion.