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Contact: Brian Sansoni, 202-662-2517 or bsansoni@cleaning101.com

Getting Smarter About Soap Scum
Thai, Oklahoma Researchers Honored With
Soap and Detergent Association (SDA) Distinguished Paper Award

Research Was Cited as Best Technical Paper in Journal of Surfactants and Detergents

WASHINGTON, DC – May 15, 2007 – Research that could help cleaning product manufacturers devise better ways to attack soap scum has been honored with The Soap and Detergent Association (SDA) Distinguished Paper Award.

The honor is sponsored by SDA and the Surfactants & Detergents Division of the American Oil Chemists’ Society (AOCS). The award honors the best technical paper published in 2006 in the Journal of Surfactants and Detergents, a publication of AOCS Press. The Award was presented during the AOCS Annual Meeting and Expo in Quebec, May 13-16.

The honored researchers include Bung-on Luepakdeesakoon of Chulalongkorn University in Bangkok, Thailand (who received her MS degree based on this thesis research); Chintana Saiwan, a Professor in the Petroleum and Petrochemical College at Chulalongkorn University; and Dr. John Scamehorn, Director of the Institute for Applied Surfactant Research at the University of Oklahoma.

The research, “Contact Angle of Surfactant Solutions on Precipitated Surfactant Surfaces. III. Effects of Subsaturated Anionic and Nonionic Solutions on Precipitated Surfactants and NaCl,” was published in April 2006. The paper is the third in a series exploring the wettability of aqueous surfactant solutions on soap scum (as represented by calcium dodecanoate in this research).

This line of inquiry originated from an interest in explaining how soap acts as a foam regulator in traditional laundry detergents. One theory considered the hydrophobic (water-hating) nature of precipitated soap particles with calcium to cause this soap scum to act as a defoamer through the dewetting mechanism. However, when the researchers measured the contact angle of water on various precipitated surfactant surfaces, they found that soap scum is not very hydrophobic, despite its greasy or oily feel, disproving this dewetting mechanism for foam suppression.

“Good wettability is key to performance of cleaning products such as hard surface cleaners to remove soap scum from bathroom surfaces,” said Dr. Scamehorn. “In the current work, we have studied the wettability of aqueous solutions containing various soluble surfactants on soap scum. Low molecular weight fatty acids were found to be the best wetting agents, followed by synthetic anionic surfactants (alkyl sulfates), followed by nonionic surfactants.”

“This work can aid formulators in selection of surfactants with high performance in removing soap scum in cleaning operations.”

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The Soap and Detergent Association (www.cleaning101.com), the Home of the U.S. Cleaning Product and Oleochemical IndustriesSM, is the non-profit trade association representing manufacturers of household, industrial, and institutional cleaning products, their ingredients and finished packaging; oleochemical producers; and chemical distributors to the cleaning product industry. SDA members produce more than 90 percent of the cleaning products marketed in the U.S. The SDA is located at 1500 K Street, NW, Suite 300, Washington, DC 20005.