



## Bright future for coating at ACFS

**T**his month's *TAPPI Journal* features a selection of papers from the TAPPI 11th Advanced Coating Fundamentals Symposium (ACFS), held October 11-13, 2010, at PTS (Papiertechnische Stiftung) in Munich, Germany. Occurring every two years, this highly regarded international symposium provides a forum for research and development professionals, chemists, and technical and innovation management to exchange ideas about the latest scientific developments in surface treatment of paper and paperboard.

This year, over 100 attendees gathered at ACFS to hear new ways of approaching coating science from world class experts, both within paper coating and from outside scientific communities. An important aspect of ACFS is to pull in knowledge from outside the industry to create breakthrough value-added products and processes.

### Coating conference highlights

The 2010 ACFS featured over 30 papers from sessions on sustainable components, optical control, coating layer formation, printing fundamentals, barrier coatings, coating layer structures, and curtain coating, as well as a poster session. The conference was co-chaired by Reinhard Sangl of PTS and Joachim Schoelkopf of Omya Development AG. Additional Conference Planning Committee Members were Lars Järnström of Karlstad University, John Kettle of VTT Technical Research Centre of Finland, Al Osgood of Sappi, Janet Preston of Imerys, Nick Triantafillopoulos of Omnova Solutions, and David Vidal of FPInnovations.

Prior to ACFS, six papers were identified by the conference chairs and planning committee as best in their respective sessions, based on content, approach, treatment of data, and impact of conclusions. Four of these papers – from authors Hamada, Martinez, Mesic, and Kritzinger – appear in this month's *TJ*.

According to ACFS Planning Committee Member and *TJ* Editorial Board Member Nick Triantafillopoulos, papers on new and cost effective ways for engineering the coating structure to enhance optical properties like brightness and opacity were especially well received by attendees. One paper of particular interest was on

a "Stochastic scattering approach to determine effective packing structure in diffuse optical coatings," from Sergey Sukhov of the University of Central Florida. This fundamental research used mathematical analyses to maximize light diffusion through engineered structures, which can someday be used in a coating to achieve superior opacity and other optical properties.

Another popular session was the keynote address by Dr. Peter Vukusic of the University of Exeter School of Physics. Speaking about "Natural systems for bio-inspired designs: An introduction to the physics of colored appearances in the biological world," Vukusic described how nanostructures in nature – as in a butterfly's wings and ultrathin beetle scales – influence iridescence and brilliantly white appearance, which has led via biomimetics to new iridescent cosmetics and may one day lead to brilliant whiteness in ultrathin paper.

The 2010 overall Best Paper, based on both manuscript and presentation criteria, was "Effective thermal conductivity of liquid saturated coatings and their liquid vaporization behavior," by student Philip Gerstner of Aalto University.

### Special recognition

A special thanks goes to *TJ* Editorial Board Member Nick Triantafillopoulos, who helped bring Best Papers from ACFS to *TJ*, as well as Jane Schulenburg from CP Kelco, who offered editing assistance. Thanks are also in order for the ACFS committee and chairs, who created a program deep in new knowledge sharing and cross fertilization from multiple disciplines, and offered tireless work in reviewing and selecting the *TJ* papers. Plans are already underway for the 12th TAPPI ACFS, which will be held in either North America or Japan in fall 2012.

The full 2010 ACFS proceedings will soon be available in both print and CD ROM from the TAPPI Bookstore at [www.tappi.org](http://www.tappi.org). For more information or pricing, contact TAPPI Member Connection at 1-800-332-8686 (US), 1-800-446-9431 (Canada), +1-770-446-1400 (Worldwide), or [memberconnection@tappi.org](mailto:memberconnection@tappi.org).

### Monica Shaw

Editorial Director, *TAPPI Journal*