# Call for Papers and First Announcement



13th International Coating Science and Technology Symposium

September 11-13, 2006 Grand Hyatt , Denver, Colorado, USA

Sponsored by: The International Society of Coating Science andTechnology (ISCST)

Cosponsored by American Insitute of Chemical Engineers

Association of Industrial Metallizers, Coaters and Laminators

Industrial Parnership for Research in Interfacial and Materials engineering (I PRIME), University of Minnesota

Pressure Sensitive Tape Council (PSTC)

In cooperation with The European Coating Symposium The Japan Coating Symposium

Facilitated by The Tiara Group, LLC

## About the Symposium

The 2006 International Coating Science and Technology Symposium is sponsored by the International Society for Coating Science and Technology (ISCST) and cosponsored by the American Institute of Chemical Engineers (AIChE); the Association of Industrial Metalizers, Coaters and Laminators (AIMCAL); and the Industrial Partnership for Research in Interfacial Engineering (I Prime), University of Minnesota. This will be the thirteenth in the continuing biannual symposia on coating science and technology.

This Symposium, with contributions from experts from Europe, Asia, and the Americas, is the premier symposium in the area of liquid film coating and related process phenomena. The meeting provides a forum for discussion of recent advances in understanding the processes of applying and solidifying thin liquid coatings. Both fundamental and applied papers are encouraged; however, preference will be given to papers that appear to be of interest to the broadest audience.

## **Call for Papers**

The following is a list of Symposium Topics for the 13<sup>th</sup> International Coating Science and Technology Symposium to be held in Denver, Colorado 11-13 September 2006. Oral and Poster presentations can be submitted to all sessions (posters will be on display throughout the symposium). The list of topics includes the traditional ISCST technical session topics and some special topics. Please submit an abstract to the session that you think best fits the content of your presentation; however the organizers reserve the right to shift presentations to another session if necessary.

#### - Coating Process Fundamentals

A hallmark of the ISCST meeting is application of engineering and science fundamentals to improve our understanding of coating applications. The "Coating Fundamentals" sessions have always been well attended throughout the ISCST Symposia.

#### - Experimental and Numerical Methods

This symposium topic is a forum for presenting new techniques or advances on previous techniques for studying coating processes. Both experimental and numerical/computational techniques are highly valuable tools for understanding coating processes and have been the subject of many presentations at ISCST Symposia.

## - Microstructure Development during Coating and Drying

Solidification is a necessary step in the production of coatings and is often one of the last steps which affect the quality of coated products. Presentations on drying, curing, phase separation, stress development, suspension aggregation, and microstructure development during coating or post-coating processing (such as drying) are solicited for this topical area. In past symposia, this topic has included a diverse array of presentations from experimental characterization of microstructures developing during drying to mathematical modeling of solvent diffusion in drying films.

#### - Discontinuous and Particulate Coatings

Many coated materials today are produced by techniques in which the substrate is not a continuous flexible web or the coating liquid is applied in discrete parcels; examples include spray coating, dip coating, gravure coating, spin coating, powder coating, ink jet printing, etc. This topical area is a forum for presenting research on discontinuous or particulate coatings.

## - Environmental Issues of Coating Processes

There have been a number of trends towards environmentally friendly coating materials and coating processes, such as Bio-based coatings, VOC reduction, aqueous coatings, and 100% solids coatings. As energy prices rise, there will also be a higher demand for energy efficient coating processes, which is especially challenging for aqueous based coating formulations. For this topical area, presentations are solicited which discuss coating materials that are more environmentally benign or coating processes that are more energy efficient or produce less waste.

#### - New Directions in Coatings and Coating of New Materials

Many companies are developing new coating processes for producing new types of coated products or discovering new materials to be coated for advanced applications; some examples of applications of these novel coating processes and novel coating materials include: batteries, displays, nanocomposites, printable/flexible electronics, and optical coatings. This session is intended to be a forum for introducing and educating the ISCST community about these novel applications, identifying the challenges of these novel applications, and expanding beyond the traditional coating applications frequently discussed at the ISCST Symposium.

#### - SPECIAL SESSION on Dynamic Wetting and Air Entrainment

Coating flows necessarily involve configurations where air-liquid interfaces having surface tension intersect a moving solid surface. In models, boundary conditions are mathematically required along the contact line, i.e., the line of intersection between the air, liquid and solid. These conditions provide additional physics that incorporate macroscopically the net result of anisotropic intermolecular forces arising in the direct vicinity of contact (the contact line region) that are not otherwise present in the bulk fluid. In the classical hydrodynamic approach, application of kinematic constraints along the air/liquid interface and solid, i.e. the application of the usual non-slip condition along the solid, leads to a non-integrable and non-physical stress singularity at the contact line. To avoid the singularity, relaxation of the non-slip boundary condition has been proposed as well as the introduction of methods that can model molecular interactions at the nanometer level. Computational fluid dynamics methods, while being powerful for many engineering applications, lack the ability to predict flows when interfacial dynamics are important.

New theories have arisen in the past 15 years, and increased computational power has led to the ability to examine the contact line region via moleculartype simulations. It is time to have a brief review of the state of the art in dynamic wetting modeling and how well these models compare with experimental observations.

The special session on "Continuum and Molecular Approaches to Dynamic Contact Lines" will be held on Monday, September 11, 2006 at the 2006 ISCST conference. The session will include oral presentations, poster presentations, and a panel discussion. Posters will be on display throughout the symposium, and poster presenters will be given an opportunity to advertise their poster with a brief announcement during the oral session. As has occurred in past ISCST meetings, dynamic wetting issues will also be addressed during numerous talks related to modeling and experimental studies of coating flows throughout the remainder of the symposium.

## To Present a Technical Paper

Submission of papers will be handled through a web-based abstract submission system at http://conference.sandia.gov/ISCST/list/mslist.lasso. You can also access this webpage through the ISCST site (www.iscst.org) or through the conference website

(https://www.thetiaragroup.com/Pages/iscst\_symposium.html) .Alternatively, if you prefer you may submit an abstract by email or hard copy; if so, please submit the title, author's name and affiliation, and a 150-200 word abstract to:

#### Richard Caimcross Department of Chemical and Biological Engineering Drexel University 3141 Chestnut St. Philadelphia, PA 19104 caimcross@drexel.edu

To Present at the Networking Session (Sunday) Submit: subject, author's name and affiliation and a 50 word description of the topic of interest

## Letter from the Program Chairs

Dear Colleagues,

The ISCST Symposium provides a forum for researchers with both academic and industrial perspectives on coating applications to discuss the latest research on application and solidification of thin liquid films. The Symposium features contributions on both fundamental and applied research and development from many of the experts in coating process science and technology. This forum is designed to provide mechanisms for the exchange of information between academia and industry.

The 2006 Symposium will feature a special session on Dynamic Wetting and Air Entrainment, which will reexamine the state-of-theart of the various theories used to describe dynamic wetting and how those theories apply to coating processes. Prior to the symposium ISCST will be hosting two short courses: *Science & Technology of Coating and Drying Processes*, September 9-10, and *The Role of Modeling & Visualization in the Coating Process*, September 10. Complete information on these courses is listed in this brochure.

We hope that you will participate in this event. Please visit our website www.iscst.org for up to date information on the program.

Sincerely

Richard Caimcross, Symposium Chair Associate Professor Drexel University

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F. Miguel Joos, Symposium Co-Chair Technical Associate Eastman Kodak Company

**BF/**Ink Jet Media Inc.



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## **Deadlines for Technical Presentations**

May 1, 2006 July 1, 2006

March 1, 2006

## 150-200 Word Abstract Due (Electronic submission preferred) Authors notified of Acceptance Final Extended Abstracts Due

Deadlines for Networking Session August 15, 2006 Name, Affiliation and Topic

## Who Should Attend:

This Symposium is designed for coating engineers and scientists in both academia and industry and will provide both practical and fundamental understanding of the coating process as well as networking opportunities. Past industrial participants have mainly come from the imaging, electronics, medical/life sciences, metal coil coating, paper, printing, information storage, automobile, chemical, computer, and textile industries. However, participants from other industries where coating is a key technology will benefit from this Symposium

## **Official Language**

The official language for the Symposium is English. Those who are not comfortable making a presentation in English are encouraged to present their work in the form of a poster.

## **Tabletop Exhibits**

Companies offering products or services that may be of interest to the attendees are encouraged to participate as exhibitors at this Symposium. The Symposium, which is expected to attract 200-300 engineers and scientists from the world's leading manufacturers of coated products and academic programs in coating science, is an ideal opportunity for companies to reach individuals who improve and scale up new coating processes, new coated products and those who are likely to do so in the future.

The Exhibit Hall will be open each day of the Symposium and will be located in the area where all scheduled breaks are held. The fee for exhibiting is \$795, which includes one registration fee. Your display will be a true tabletop exhibit in which all materials must fit safely on a 6 foot table.

For further information on the exhibits or logistical information, contact:

Mr. Tenry Gorka The Tiara Group, LLC 530 West Ojai Avenue, Suite 108 Ojai, CA 93023-2471 tgorka@thetiaragroup.com 805-659-2298 • 877-235-4653 • FAX 805-659-1493

Visit our Website at www.iscst.org

## **Preliminary Program**

Session subjects will depend on abstracts received.

## Networking Session (afternoon of Sunday, September 10)

A networking session will be held on Sunday afternoon. The networking session is a forum for people interested in collaboration to showcase areas of interest in which collaboration is actively being sought. This collaboration may take the form of direct industrial support, joint research proposals, internships, etc. As such, the networking session presentations are intended to be far less formal and are not expected to be as fully developed as presentations at the technical sessions.

Welcoming Reception (evening of Sunday, September 10)

Technical Sessions (All day Monday and Tuesday and Morning Session on Wednesday)

- *Special Session* on Dynamic Wetting and Air Entrainment (Monday Sept, 11) with panel of experts analyzing state of the art models, simulations, and experiments.
- Coating Process Fundamentals and Technology
- Experimental and Numerical Methods
- Microstructure Development during Coating and Drying
- Discontinuous and Particulate Coatings (spray, dip, gravure, spin, ink jet, etc.)
- Environmental Issues of Coating Processes (Bio-based coatings, VOC reduction, energy efficiency)
- New Directions in Coatings
- Coating of New Materials (Battery, Display, LCD, Nano-composites, etc.)
- Special topics (composites, printable/flexible electronics, optical coatings)
- Recent and Future Directions in Coating Research
- Industrial Coaters Forum

## **Poster Sessions**

In addition to the oral presentations in the technical sessions, poster sessions are planned for Monday and Tuesday after lunch. Posters will be on display throughout the symposium.

## **Exhibits**

The table top exhibit hall will be open throughout the symposium

ISCST Awards John A. Tallmadge Award for Contributions to Coating Technology

Description: Recognizes an individual's significant contributions to the understanding or improvement of the technology of the coating of continuous webs. The award is presented biannually, in even numbered years.

Sponsored by: International Society of Coating Science and Technology, Eastman Kodak, and AIChE.

Nomination deadline: June 1. 2006.

Award: A plaque and \$1,000.

Nomination procedure: Nominations must include a brief professional history of the nominee and specify how the nominee meets the criteria of the award. To submit a nomination, open and print the Tallmadge Award Nomination form (Adobe Acrobat PDF format\*) found at www.iscst.com, ISCST Awards & Honors. Complete the form, and mail it with the necessary attachments by June 1, 2006.

Presentation: The next award will be presented at the 13th International Coating Science and Technology Symposium, September 11-13, 2006 at the Grand Hyatt Denver, CO.

Previous Recipients of the John A. Tallmadge Award

- 1992 L. E. Scriven, Regents Professor,
  - Dept. of Chemical Engineering, Univ. of Minnesota-Twin Cities
- 1994 E. B. Gutoff, Consultant
- 1996 J. E. Hens, retired, AGFA
- 1998 Kenneth J. Ruschak,
- Eastman Kodak Company, Rochester, NY
- 2000 Edward D. Cohen, retired, DuPont Fellow
- 2002 Terrence D. Blake, Kodak Ltd., Harrow, Middlesex, UK
- 2004 Brian G. Higgins, University of California, Davis

## L.E. Scriven Young Investigator Award

Description: This award is given in recognition of outstanding sustained achievements or one-time breakthroughs in the area of continuous liquid film coating science and technology. Those nominated for this award must be forty years old or younger. The award will be presented at the Symposium.

Sponsored by: International Society of Coating Science and Technology Nomination deadline: June 1, 2006. Award: A plaque and \$500.

Nomination procedure: Nominations must include a brief professional history of the nominee and specify how the nominee meets the criteria of the award. To submit a nomination, open and print the Young Investigator Award Nomination form (Adobe Acrobat PDF format\*), found at www.iscst.com, ISCST Awards & Honors. Complete the form, and mail it with the necessary attachments by June 1, 2006.

Presentation: The next award will be presented at the 13th International Coating Science and Technology Symposium, September 11-13, 2006 at the Grand Hyatt Denver, CO.

Past Recipients of the Young Investigator Award

- 1998 Cyrus Aidun, Institute of Paper Chemistry, Georgia Institute of Technology-Atlanta Dennis Coyle, General Electric Company, Niskayuna, NY
- 2000 Steven J. Weinstein, Eastman Kodak Company, Rochester, New York
- 2002 Andrew Clark, Kodak Ltd., Harrow, Middlesex, UK W. Blake Kolb, 3M, St. Paul, Minnesota
- 2004 Marcio D. Carvalho, Pontificia Universidade Catolica do Rio de Janeiro,Brazil

Symposium Chair Richard Allan Caimcross Associate Professor Department of Chemical and Biological Engineering Drexel University Philadelphia, PA 19104 (215) 895-2230 (Office) (302) 895-5837 (Fax) caimcross@drexel.edu

Symposium Co-chair F. Miguel Joos Eastman Kodak Company Rochester, NY 14652-3703 (585) 477-1107 (Office) (585) 722-5387 (Fax) f.miguel.joos@kodak.com

## Symposium Steering Committee

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Marcio Carvalho, Pontificia Universidade

Catolica do Rio de Janeiro Dennis Coyle, GE Global Research Lorraine Francis, University of Minnesota Shuzo Fuchigami, Mitsubishi Chemicals Eric Grald, Fluent Inc. Edgar Gutoff, Retired Daniel Huang, Nektar Therapeutics Alexander Jansen, Avery Dennison Ta-Jo Liu, National Tsing Hua University Kimiaki Miyamoto, Fuji Photo Film Dan Mosoiu, Roche Diagnostics Wim Mues, Agfa-Gevaert NV Leonard Schwartz, University of Delaware Peter Schweizer, Polytype Converting AG Maya Stevanovic, Duracell L.E. "Skip" Scriven, University of Minnesota

Kathleen Stebe, Johns Hopkins University Steven Weinstein, Eastman Kodak James Wheeler, Weseeco Yukio Yamaguchi, University of Tokyo Masato Yamamura, Kyushu Institute of Technology

## **Continuing Education Program**

Two short courses will be held prior to the symposium.

## Science & Technology of Coating and Drying Processes September 9-10, 2006

Instructors: Dr. Edward D. Cohen (Consultant), Dr. Dennis J. Coyle (GE), Edgar B. Gutoff (Consultant), Prof. Wilhelm Schabel (U. Karlsruhe, Germany), and Dr. Steven Weinstein (Eastman Kodak)

- Practical Technology for Coating Processes
- Fluid Flow throughout the Coating Process
- Roll and Gravure Coating
- Premetered Coating Processes
- Drying and Solidification of Coatings

The Role of Modeling & Visualization in the Coating Process September 10, 2006

Instructors: Prof. Marcio Carvalho (PUC - Rio) and Wieslaw Suszynski (Univ. Minnesota)

- Coating and Visualization Equipment
- Visualization Techniques
- Numerical Methods for Modeling Coating
- Experiments and Theory: Examples of Results

## About the 12th International Coating Science & Technology Symposium

The 12th International Coating Science and Technology Symposium was held at the Hyatt Regency in Rochester, New York, from September 20 – 22, 2004 (General Sessions) and September 18 and 19 (Short Courses).

The Symposium was attended by 289 coating engineers and researchers. 239 attendees were from industrial companies and 50 attendees from academia and research institutions. Both Europe and Asia were represented in significant numbers.

Some comments from participants ...

"Great opportunity to network. I met some great new contacts."

"The variety of presentations was excellent. A lot of good down-to-earth presentations."

"The exhibit session was especially valuable. Keep encouraging companies to exhibit."

"What I learned from this symposium will be a great asset to my company."

"I appreciated learning new technology, the opportunity to connect with potential solutions, and the opportunity to network with technology leaders and colleagues."

"I saw a snapshot of what coating practitioners and coating-oriented academics are interested in, which was my goal in attending."

"Learning the latest in my field of research was very valuable."

## Location and Accommodations

ISCST 2005 will be held at the Grand Hyatt Denver, located in the heart of Denver.

## Activities in Denver

Located in a spectacular setting at the foot of the Rocky Mountains, Denver is one of America's fastest growing cities -- and one of its most exciting. The Mile High City entertains over 8.8 million visitors a year with people coming to enjoy the city's outstanding cultural attractions, museums, shopping, dining and nightlife. Blessed with 300 days of sunshine a year, Denver is a lively city with a great love of the outdoors. Here you'll find the nation's largest city park system, 90 golf courses and an incredible 650 miles of paved bike trails.

Denver has the tenth largest downtown in the U.S. - a bustling area centered around a mile-long pedestrian promenade that is lined with outdoor cafes and flower baskets. Down every street there are mountain views. The mountain panorama visible from Denver is 120 miles long and includes nearly 200 named peaks. Downtown Denver is home to three new sports stadiums, 300 restaurants, a restored historic district filled with 90 bars and brewpubs, a collection of museums, a variety of galleries and shopping, the second largest performing arts center in the nation, three college campuses and even a unique downtown amusement park, Six Flags Elitch Gardens.

Denver has one of the highest educated populations in America and a great love of the arts. The Denver Art Museum is in the process of doubling with a new wing designed by Daniel Libeskind. The Denver Performing Arts Complex is the second largest in the nation with ten theatres seating 10,000 people for theatre, symphony, opera and ballet. Denver has an amazing collection of museums devoted to the wonders of Planet Earth. The Denver Zoo is the fourth most popular zoo in the nation and is undergoing a \$130 million improvement program. Ocean's Journey Aquarium has been acquired by Landry and will undergo major improvements, while the Denver Museum of Nature & Science just added a space museum and the world's most advanced digital planetarium.

## **Hotel Reservations**

To make a reservation, call the Hyatt Regency Denver at 1-800-233-1234, 1-303/295-5718. Make sure to identify yourself as an attendee of the ISCST Symposium to receive the special rate of \$129, single occupancy, \$129, double occupancy, \$154, triple occupancy and \$179, quadruple occupancy, per night, plus tax. Reservations should be made by August 16, 2006 to receive this special rate. After this date reservations will be accepted on a space and rate available basis. You can reserve a room with a credit card or check (in U.S. dollars). A first night deposit is required at the time of reservation. Room reservations cancelled within 72 hours prior to day of arrival will be charged one night's fee. No-shows will be charged the first nights room deposit.

For more information about the Hyatt Regency Denver go to http://denverregency.hyatt.com/property/index.jhtml

## Transportation

#### FROM DENVER INTERNATIONAL AIRPORT:

THE SUPER SHUTTLE: \$18 per person each way \$32 round trip Blue vans with yellow writing on the side that say SUPER SHUTTLE Runs 6:00 am -Midnight, about every 20 minutes Reservations are not required Shuttle ticket counters are located on Terminal Level 5, across from the rental car agencies. For ticket information call 1-800-258-3826 or 303-316-3865

TAXI: Yellow Cab - \$45

For driving directions go to http://denverregency.hyatt.com

For Additional Information Contact: Mr. Teny Gorka, The Tiara Group, LLC tgorka@thetiaragroup.com 805-659-2298 • 877-235-4653 • FAX 805-659-1493



#### Symposium Registration

Register online at www.iscst.org or complete and mail or fax to us the Registration Form below. Provide credit card information or enclose a check payable in the appropriate amount to The Tiara Group. You may also call Mr. Terry Gorka at 805/659-2298 to register over the phone. We'll be happy to hold a seat for you for a limited period until payment is received.

#### THE TIARA GROUP, LLC

530 West Ojai Ave Suite 108 • Ojai, CA • 93023-2471 Tel: 805-659-2298 • Fax: 805-659-1493 • e-mail: admin@thetiaragroup.com

q Dr. q Mr. q Ms.	
Name:	<b>.</b>
Position/Title:	Last
Company/Institution:	
Address:	
City, State/Province:	
Zip/Postal Code:	
Country:	
Phone:	
e-mail:	

- q I plan to attend the opening reception on Sunday, Sept. 10, 6:30-8:30
- q I would like vegetarian lunches.
- q Please e-mail information on the Golf Outing
- q Please do not include me on the registrant list for this Symposium for distribution to participants.

Registration (must be postmarked by August 10)	\$545 \$595 -\$50 \$245 \$795 \$495
Short Courses: Science & Technology of Coating & Drying Processes q The Role of Modeling & Visualization in the Coating Process q Total Amount Due:\$	\$995 \$795

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Cancellations: There is no charge for cancellations received in writing prior to August 20, 2004. After that date, no refunds will be given, but Symposium proceedings will be provided. If you cannot attend, you are welcome to send a replacement at no additional charge.