



# Inter-Society Color Council News

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Number 372

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1998

## FROM THE PRESIDENT'S DESK

ELLEN CARTER

By the time you receive this *Newsletter*, the Williamsburg Conference on Color and Design, 21st Century Technology and Creativity and the winter board meeting will have occurred. However, because of publication deadlines, highlights from these activities will have to wait for the next issue's President's Column. In this column, let me welcome our new sustaining members and invite you to our long-range planning weekend.

At the beginning of last year, we began looking at the sustaining member category. We started the year with two companies as sustaining members — BYK-Gardner and Labsphere. During the year, Hunter Associates Laboratory and Chromatics Color Sciences International joined the group. Now the 1998 year has brought two more sustaining members: Minolta Corp. and Dave Spooner of rhoMetrics.

The participation of these new sustaining members highlights both the diversity of the membership, and the commonality of interest and goals that leads to involvement in the ISCC.

Minolta is the world-wide manufacturer of light and color related equipment, software and systems for manufacturers in the food processing, textile, plastics, paint, ink and printing, paper, computer display, video broadcasting and animation industries. The Instrument Systems Division includes the technologies of color and spectrophotometer color control systems, light and color meters, CRT and LCD color analyzers, CRT convergence meter, and digital laser three-dimensional imaging systems.

In contrast, David L. Spooner is one person running his own company. He is an individual who has been a long-time ISCC member, dedicated to the field of color. He is currently serving a three year term on the Board of Directors of the ISCC. Last November Dave Spooner came to me to check that it would be "okay" for him to become a sustaining member. He said, "I really want to do this, and I want to do this as an individual to be an example to the other members of ISCC, showing that anyone who believes in the ISCC and its work can support it by being a sustaining member." Thank you, Dave. And welcome as a sustaining member. We love

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your spirit.

Dave Spooner and Minolta do share interests in the goals of the ISCC – particularly education. Dave, through his company, rhoMetrics, has continued research on the many factors affecting color measurement such as translucent blurring, and presented numerous papers around the world on the results. He is tireless in his efforts to educate those interested in color to the intricacies of color science. Likewise, recently Minolta has announced the establishment of its Light and Color Applications Center, a new operation dedicated to providing technical consulting, support, training and educational services to users of light and color measurement, and control band imaging technologies.

Speaking about the goals of the ISCC, periodically – roughly every eight to

ten years, the board of the ISCC sets aside a time to reflect on the directions and goals of the ISCC and examines whether the ISCC is meeting the needs of its members and the greater color community. That time has come again. We have scheduled a Long-Range Planning Weekend in May. There is more information about this in other parts of this *Newsletter*. We would like to have any and every member who is interested participate. "How?" you might ask. There are several ways: you can give your views and ideas in the Individual Members Group Survey either by mail or email; let the directors know your opinions or questions, or attend and participate in the Long-Range Planning Weekend in person. All are welcome. The ISCC is only as strong as its membership.

*Ellen C. Carter*

## COLOR RESEARCH AND APPLICATION

### IN THIS ISSUE, APRIL 1998

**W**e start off this issue in the field of color vision, dealing with the very practical issue of evaluating color vision deficiencies. For most observers, color matching requires mixing three primary lights to form a satisfactory match, hence the term trichromatic match. However, a certain proportion of the population can match all colors to their own satisfaction using only two primary lights, or even occasionally with one (hence, the terms dichromat and monochromat may be applied). These variations have been linked to differences in the photoreceptors in the eye. Over 80 years ago, Ishihara developed a quick and easy procedure to categorize observer's color perception. It has become the benchmark technique for identification of color vision deficiencies. This procedure consisted of having a person examine a set of color images called pseudochromatic plates. Each plate consisting of a colored test pattern against a colored back-

ground, were designed on the results of color-matching experiments. The test pattern can be distinguished from the background only by its color. The colors used for each pair of test pattern and background are carefully selected to be indistinguishable to people missing one type of cone receptor. Thus, the ability to perceive the pattern indicates the presence of that cone. By looking at the observer's responses to approximately 20 plates, the color vision of the observer can be categorized fairly well. Many other color vision deficiency tests have been developed over the years based on this same principle, but are generally available to greater or lesser extent. In our first article, Stephen Dain, Simone Gray, and Leigh Tran look at the relative performance of the newest pseudoisochromatic plate test, the Hahn Test. In "Colorimetric Analysis and Performance Assessment of the Hahn New Pseudoisochromatic Colour Vision Test," they compare its screening, and qualitative and quantitative diagnosis capabilities to the other pseudoisochromatic color vision tests.

For the next article we move to the chromatic adaptation transforms by Hiroaki Sobagaki and Yoshinobu Nayatani. To compare experiments

that utilize different illumination and viewing conditions and have observers adapt to changed conditions within the experiments, it is necessary to transform the observed and predicted results from the test illuminance to a common normalized illumination. This concept has already been built into the color-appearance models of both Nayatani and Hunt. However, in "Field Trials of the CIE Chromatic Adaptation Transform," the procedure is specifically established and then used to test the CIE Chromatic Adaptation Transform.

Our third article also looks at some aspects of the CIE system of colorimetry. In 1992, William A. Thornton published the first three parts of a series of articles "Toward a More Accurate and Extensible Colorimetry" in successive issues. In these articles, he described a visual colorimeter-spectroradiometer and a series of experiments that he had completed using that instrument. Among other things, he reported large errors in the computed tristimulus values (using the 1964 CIE Standard Observer) for lights judged to be matching in his apparatus. Last year Part IV, which extended the range of brightness levels and field sizes studied, appeared. Now in this issue, Hugh S. Fairman joins with Dr. Thornton in "Part V. Testing Visually Matching Pairs of Lights Possible Rod Participation on the Aguilar—Stiles Model." In this part, the authors develop an analytical expression for determining the mismatch due to rods. They then go on to determine the amount of rod participation possible in the experiments described in Parts I-IV. Finally, they conclude that rod participation is not an appreciable contributor to the large tristimulus errors documented in the earlier parts of this series.

For our final article we turn to the field of graphic arts that has also been a subject in the last two issues. This month's article, entitled "Neugebauer Revisited: Random Dots in Halftone Screening," echoes the model of two issues ago, and the pattern question discussed in the last issue. Two issues

## OBITUARY

### CHARLES D. REILLY

Charles (Chuck) D. Reilly, (1921 - 1997) who retired as a Research Fellow from DuPont's Engineering Physics Laboratory in 1983 and was the 1987 recipient of the ISCC Godlove Award, died Saturday, December 13, 1997 at his home in Longmont, Colorado.

The Godlove nominating committee cited Reilly for "his long term contributions to the field of color science". He was the co-inventor and major contributor to the development of the Cube Root Coordinate System, the basis for the CIELAB 76 Equations and all modern extensions like CMC and CIE-94. He led the DuPont development of many color instruments, as well as the color science underlying their technology. The "Colormaster" and "Du Color" colorimeters are two examples of such devices which gained wide use internationally.

During his 30-year career, Chuck was considered especially productive in adapting basic science to the manufacturing world. He was directly involved with research which led to major improvements in the measurement and control of coloring processes used in finishes, textile fibers, plastics, pigments, printing and lithographic products, photo products and dyes.

In addition to his technical contributions, Chuck devoted much energy towards teaching a whole generation of younger DuPont scientists, in a quiet unassuming manner. He was an advisor, sponsor, teacher, confidant and role model to countless color scientists who continue to contribute to the field through research, publication, committee participation and organizational leadership.

Chuck was elected Fellow of the Optical Society of America in 1978. He served with distinction on the OSA Uniform Color Scales Committee, resulting in a more uniform color coordinate system intended to replace Munsell System. He also received the Bruning Award from the Federation of Societies for Coatings Technology in 1988 for his contributions to color science. In 1996 the DuPont Company honored Chuck Reilly with the Lavoisier Medal, the company's highest scientific award, citing his achievements in the theory, instrumentation, measurement and control in applied optics and color.

*Dave Alman , Allan Rodrigues and Paul M. Tannenbaum  
DuPont*

ago, Dr. Marc Mahy developed an analytical model of a printer that relates the color to the amounts of colorants in "Calculation of Color Gamuts Based on the Neugebauer Model." He examined the natural and hybrid boundaries of color gamuts as well as the physical boundaries, then described the calculation of color gamuts of "well behaved" processes based on the Neugebauer model. Then in the last issue, Bezerra and his co-authors described a study that used partitive color mixing theory to predict colors produced by ink-jet printer, in "Colour Matching for Ink-Jet Prints on Paper" using two, three, and eight color mixtures, as well as the overlap considerations. In this issue, Geoffery L. Rogers explicitly calculates the halftone color as a function of the dot sizes for a dichromatic print without

(Cont.. on pg. 10, Middle Col.→)

## 1997 ISCC AND CAD/SPE RETEC JOINT ANNUAL MEETING

**D**uring September 14-17, 1997, ISCC and CAD (Color & Appearance Division)/SPE (Society of Plastic Engineers) had their annual meeting back to back at the Marriott Inner Harbor in Baltimore, MD. The Attendance was very good with 133 people attending ISCC, 538 attending CAD/SPE, and 74 attending both meetings.

**ISCC Annual Meeting Sunday, Sept. 14 Education Committee** - met with presentations from Joel Pokorny on "Congenital and Acquired Color Vision Deficiencies"; Dr. Cynthia Brewer and Judy Olson, "Designing

Color Displays for Color Vision Impairment"; and John Werner "Aging Through The Eyes of Monet". Project Committee 51 Revision of ISCC Technical Report 89-1, on "Guide to Material Standards and Their Use in Calibration and Verification" — Jack A. Ladson, Project Chair. The committee met to report the status of the revision. Hugh Fairman presented a chapter on bandpass, bandwidth, wavelength and specular port errors. Spooner presented material on translucency blurring. Ladson reviewed the one year project plan completion schedule. He invited the members of the ISCC and the color community to contribute to this work. Of particular interest are materials on fluorescence measurement and haze evaluation. Please contact Jack Ladson at:

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jladson@estee.com

Interest Group III - Art, Design and Psychology chaired by Shashi Caan and Curt Fritzeen. The speakers were Dr. Allen Granda on Visual Communication, Dr. Geraldine Herbert with a talk entitled "Medicine Cures the Body, but Art Heals the Spirit", Dr. Leonard Oberascher on Full Scale Modeling of Color in Architectural Design and Magenta Yglesias on Clients and Color.

#### **Monday - Sept. 15**

Interest Group II - Industrial Applications of Color Group met with presentations by Barry Ruben, "New Iridescent Fabrics"; David Spooner, "The Colorimetry of Holograms: Flake Pigments"; Dr. Glenn Miller, "Correlating Visual Observations and Instrumental Measurements for Materials of Different Surface Properties"; Odeda Rosenthal, "Color Blindness is not a Joke"; Tien Rein Lee, "Exploring the Possibility of a Device - Dependent Color Matching and Management Method: An Application of a Graphic Color System in Printing Related Color Reproductions".

#### **IMG Group Meeting Newcomers Meeting**

Interest Group I - Fundamentals and Applied Color Research Group met with presentations by Hugh Fairman, "Some Interactions of Specimens and Instrument Geometrics"; James Worthey, "Calculation of Metameric Reflectance"; William Thornton, "Note on Strong Metamerism and Color Orders System"; Diego Socolinsky and Lawrence Wolff, "On the Intrinsic Geometry of Color." and Yan Liu and James Shiley, "A very Large Hue Change of a Tourmaline From the Umba Valley."

CIE TC-2-25, Fluorescent Measurements met.

On Sunday, there was a wine and cheese mixer, and Monday's lunch was the Awards Luncheon where Ann Laidlaw was presented the Nickerson Award. Dr. Henry Hemmendinger was presented the Godlove Award.

On Monday night the social event was a buffet at Camden Yards followed by an Orioles-Indians baseball game.

#### **Society of Plastic Engineers, Color & Appearance Division**

The CAD meeting started on Tuesday, Sept. 16 and was 50% papers/presentation and 50% breakout sessions with instrument suppliers. The instrument suppliers represented were BYK-Gardner, DATACOLOR, Gretag Macbeth, Hunter, Minolta and X-Rite. Papers presented were Scott Hietzman and John Sheets, "Understanding Test Variation - A Plastics Case Study"; Robert Lee and Robert Gray, "Pigment and Light Stabilizer Interactions on Polyolefins"; Rick Johnston, "Color Fundamentals: The Basics for Automated Production"; Donald Hone, "Weatherable High Gloss Black Automotive Exterior Trim Material - A Comparison"; Chun Lee and Ranesh Shraff, "Effect of Elongational (Extentional) Viscosity on the Titanium Dioxide (TiO<sub>2</sub>) Dispersion of Highly Loaded (50-70%) White Concentrates"; Lynn Bente and Doug Koerner, "The Mass Coloration of Non-Migratory Transparent Colorants for Thermoplastic Elastomers"; Rodney Williams, "Nine Leadership Issues for Success"; Michael Yu and Scott Brewer, "Designing The Ideal Carbon Black for Fine Denier Fiber Usage"; A. Knebelkanp, H. Buskies-Keup, G.E. Hahn and W. Schafer, "High Performance Dispersing Waxes for Polyolefin Color Concentrates"; David Spooner and Jack Ladson, "Color Measurement Errors Resulting from Instrument Flash Source Included Transient Photochromism"; Peter Solera, Michael Nirsberger and Noe Castillo, "Measuring Stabilizers in Pigmented Plastics with Near Infrared Spectroscopy".

On Tuesday, the CAD had their awards luncheon honoring outgoing chairpersons: George Rangos - Chair (Plaque), Gary Beebe - Chair Elect (SPE Pen), Terry Golding - Treasurer (SPE Calculator), Aram Terzian - Secretary (SPE Pen and Pencil), Austin Reid - TPC Chair (Plaque), Bruce Mulholland - TPC Secretary/Chair Elect (SPE Pen). John Copp was presented a plaque for achieving SPE Honored Service Member, and Sharon Ehr was presented the 1997 CAD Outstanding Achievement Certificate. SPE Cross pens were awarded to the following members for completing their items, TPC -Shelby Brannon, Sandra Davis, Brian Teunis, BOD - Bob Charvat, Dennis Meade, Bill Jarret Erwin Ratajczak, Councilor John Copp. Best Paper Awards were presented for 1996 RETEC to Dwight Holtzen "Extrusion Die Plate Out - A Possible Cause", and 1997 ANTEC to Bruce Mulholland, "Introduction to Color Theory". The paper award is a plaque and a \$500 honorarium.

At Wednesday's luncheon, we were treated to an excellent presentation by NASA on Mars.

I wish to thank the sponsor of the coffee breaks, the ball game and reception: Coffee breaks - Penn Research, CIBA Additives, Radiant Color, Bayer; Baseball tickets - EM industries and Reception Sponsors, BASF, DAYGLO Color, Englehard/Mearl, Millenium Inorganic Chemical and Sun Chemicals.

*Gary E. Beebe  
Chairperson*

*1997 ISCC/SPE Annual Meeting*

Ed. Note: A detailed meeting report will be published in the June issue of Color Research and Application

## REQUEST for NOMINATIONS

### NICKERSON SERVICE AWARD

**T**he Inter-Society Color Council's Nickerson Service Award was established in 1980 to recognize outstanding long-term contributions toward the advancement of the Council and its aims and purposes. The contributions may be in the form of organizational, clerical, technical, or other services that benefit the Council and its members. Candidates for the award must be members of the Council and must have been active in the affairs of the Council. If you would like to nominate a person for this award please contact Robert Marcus at Datacolor International, 5 Princess Road, Lawrenceville, NJ 08648, tel: 609-924-2189, ext. 7323, fax: 609-895-7438, email: marcus@dcitclwr.usa.com before April 25, 1998.

*Robert Marcus*

## NEWS FROM MEMBERS

**I**n 1995, the German Association of Contact Lens Specialists/Optom-etrists (VDC) awarded the VCD Peter Abel Award for excellent scientific work on contact lens optics for the first time. M. Melgosa, E. Hita and M.J. Velasco, all from the University of Granada, Spain, were selected as the 1997 award recipients.

As the winner, Manuel Melgosa presented the opening lecture at the 43rd International VDC Conference in Bonn, Germany on Friday, September 26, 1997. Below is a summary of his presentation, "Performance of a color indicator in a disinfecting solution for the maintenance of soft contact lenses (\*)," which is co-authored by the other two award recipients.

(\*) Published in *Optometry and Vision Science*, 74 (4), 231-235, 1997

**Dr. Manuel Melgosa** is a member of ISCC from Spain.

**Jack A. Ladson:** Jack is preparing a workshop for Estée Lauder Co. on Color and Appearance and Industrial

Application of Color Technology. He is using the Farnsworth-Munsell Hue Test and the Ishihara type plates to evaluate and train observers and color matchers.

Did you know that of the 43 members of the Conference Committee for the Sixth Color Imaging Conference in Scottsdale, AZ, 15 of them are members of Inter-Society Color Council. They are in alphabetic order:

Karen Braun  
Mike Brill  
Rob Buckley  
Mark Fairchild  
Ron Gentile  
Chris Hauf  
Tim Kohler  
John Meyer  
Ricardo Motta  
Todd Newman  
Alan Robertson  
Gary Starkweather  
Michael Stokes  
Joann Taylor  
Joel Trussell

Inter-Society Color Council is also one of the Cooperating Societies.

## COLOUR BETWEEN ART AND SCIENCE OSLO INTERNATIONAL COLOUR CONFERENCE

**T**he Organizing Committee extends an open invitation for papers to be presented at the conference "Colour Between Art and Science." Presentations should not extend 20 min.

The conference will focus on the role of colour in the arts and sciences, and how different disciplines can shed light upon colour in the polarities and intercourse between them. Due to the subjectivity of chromatic response, the emphasis throughout the conference will be on what colour as a source of response offers to aesthetic and scientific practice.

The aim of the conference is to bring to light the status of colour in our times. We are therefore inviting artists and scientists representing different attitudes towards the phenomenon of colour. We believe that this will stimulate discussion and provide groundwork for future exploration.

Simultaneously a comprehensive catalogue will be published, in which all the participants will be presented. The catalogue will consist of essays, articles, contributions to the conference and a catalogue section from the exhibitions. The main museums and galleries in the center of Oslo are preparing exhibitions related to *Colour between Art and Science*. During the conference, *Ultima*, our leading contemporary music festival, will focus on colour in music. Colour in filmmaking will be featured at *The Film House*.

The topics for the seminar sessions are: 1. Colour in Art. 2. Colour in Philosophy. 3. Colour in Religion. 4. Colour in Social Science. 5. Colour in

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### Natural Science.

We also accept Microsoft WORD Mac or PC combined with a hard copy printout. The Scientific Board will review all submissions and select papers for presentation by 1 March 1998.

**Participants:** The conference will be of interest to individuals, groups, organizations, and institutions where colour is the main or part time topic.

**Conference language:** All lectures will be presented in English.

We regard the conference, *Colour between Art and Science* as a valuable project of cultural exchange. It will be the major cultural event in the city of Oslo from 8 - 11 October 1998. The conference will take place at the Radisson-SAS Scandinavia Hotel,

centrally located in Oslo, - and within walking distance of the main museums, galleries and other sites of interest. We will make sure that our participants experience convenience during their stay with us.

For further information please contact Conference Secretary Ms. Ane Forsmo or Adm. Leader Mr. Erik Wessel. Tel: (+47)22995680, Fax: (+47)22995681. Helen Simonsen, Institute Leader Erik Wessel, Adm. Leader; Harald M. Anthonsen, President, AIC, Norway.

Dr. Danny C. Rich  
Datacolor Int.

companies serving both the coatings and plastics industry in the southern hemisphere.

**2) 1998 Panamerican Coatings Expo**, is the FSCT's second Expo for the Mexican Coatings Industry. Last held in 1996, the FSCT will co-sponsor the event with the Mexican Paint Manufacturers Assoc., ANAFAPYT. It will be held at Mexico City's premier convention facility, the World Trade Center, on July 23-24. The show will include a one-day technical seminar.

**3) ICE'98** — FSCT Annual Meeting and International Coatings Expo and Technical Conference — October 11-16, 1998, Ernest N. Morial Convention Center, New Orleans, LA. Conference 11-13, 1998, Exposition and Annual Meeting & Technical Program — October 14-16, 1998. With over 75 years of providing education and technical programs for the coatings industry, the FSCT will host **ICE'98** — the largest exposition of coatings raw materials, production and laboratory apparatus and equipment, and services. In conjunction with the Expo, the Federation will host its Annual Meeting program featuring technical presentations from leading coatings experts. The Technology Conference offers one- and two-day seminars which provide hands on training, as well as lecture type instruction geared for all levels of the coatings industry.

FSCT Roon Awards Committee Chairman Clifford K. Schoff of PPG Industries, Inc. has announced a Call for Papers for the 1998 competition. Prospective authors have the opportunity to earn up to \$4,000 in cash prizes for outstanding papers.

The annual awards are sponsored by the Coatings Industry Education Foundation (CIEF) and were established to honor the late Leo Roon, founder of Nuodex Products Co., with support funds coming from the Roon Foundation. The awards will be presented at the FSCT International coatings Expo and Annual Meeting in

## COLOR MARKETING GROUP ANNOUNCES UPCOMING COLOR FORECASTING CONFERENCES

Color Marketing Group announces its Spring and Fall International Conference dates and locations for 1998.

In Spring 1998, CMG members will be forecasting for Consumer markets in the year 2000. Over 600 members will meet in The Broadmoor, Colorado Springs, CO. April 19-21.

In Fall 1998, CMG members will be forecasting colors for Contract/Commercial markets in 2001. The meeting will be in Le Centre Sheraton Hotel Montreal, Montreal, Quebec, Canada, Oct. 4-6.

For further information contact:  
Color Marketing Group,

5904 Richmond Hwy., Suite 408,  
Alexandria, VA 22303 USA.

Tel: 703-329-8500.

Fax: 703-329-0155.

email: [cmg@colormarketing.org](mailto:cmg@colormarketing.org)  
Web Site: [www.colormarketing.org](http://www.colormarketing.org)

## FEDERATION OF SOCIETIES FOR COATINGS TECHNOLOGY

The following three conferences are sponsored by the Federation of Societies for Coatings Technology.

**1) ICE Latinoamerica '98**, a trade show for the South and Central American Coatings Industry is scheduled to be held April 15-17 at the Miami Beach Convention Center. The show will also include a two-day conference on environmental and regulatory issues.

Being held in conjunction with the successful "Plásticos de las Americas," a show directed to the Latin American plastics manufacturing industry, ICE Latinoamerica '98 will also provide a unique opportunity to those supplier

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New Orleans, LA, October 14-16, 1998.

To submit a paper for the competition, the following rules must be observed: (1) The paper must describe original work not previously published or presented; (2) The information must be directly related to the protective coatings industry; (3) It must be of such a caliber that it reflects a step forward in real scientific contribution to the coatings industry; and (4) It must be accompanied by a clearance for publication. The paper must also be prepared by someone associated with the organic coatings industry, including raw material suppliers and educators.

All of those interested in entering the competition must send a letter of intent, along with the title of the proposed paper and a brief abstract by April 15, 1998 to: Roon Awards Competition, c/o FSCT, Attention: Michael G. Bell, Director of Educational Services, 492 Norristown Rd., Blue Bell, PA 19422-2350, or you can FAX the information to 610-940-0292.

Entries that arrive after the April 15 deadline will be considered for the 1999 competition.

#### STUDENT PAPERS INVITED FOR 1998 A.L.HENDRY AWARDS COMPETITION

Student authors are encouraged to submit entries in the 1998 Southern Society for Coatings Technology Alfred L. Hendry Award Competition.

This year's award again features cash prizes to both the student author (or authors) and the author's sponsoring lab. The student receives a \$1,000 cash award and expenses covering attendance at the FSCT International Coatings Expo and Technology Conference in New Orleans, LA, October 14-16, 1998 to receive the honor and suitably inscribed certificate for the best paper submitted for the competition. The competition is administered by the FSCT Educational Coordinating Committee and several committee members will judge the entries. In addition, the laboratory of

the sponsoring school will also receive a grant of \$500.

Submitted papers must describe the results of original research on a subject related to coatings technology, or present a significantly insightful, comprehensive review of a field of coatings technology. Work done on coatings related topics as part of an undergraduate research project or as a senior thesis is appropriate for submission.

Those wishing to enter the competition must send a letter of intent, along with the title of the proposed paper and a brief abstract, by May 1, 1998 to: Hendry Awards Competition, c/o FSCT, 492 Norristown Rd., Blue Bell, PA 19422-2350. The deadline for receipt of manuscripts is July 1, 1998.

The A.L.Hendry Award is sponsored by the Southern Society for Coatings Technology and commemorates the industry contributions of the late Alfred L.Hendry, president of A.L.Hendry Co. in Tampa FL.

For information about any of the three conferences mentioned above, contact: Federation of Societies for Coatings Technology, 492 Norristown Road, Blue Bell, PA 194 22.

Tel: 610-940-0777

Fax: 610-940-0292.

*Lisa McGlashen*

## THE SOCIETY FOR IMAGING SCIENCE AND TECHNOLOGY

**T**he Society for Imaging Science and Technology (IS&T) will hold **NIP14: International Conference on Digital Printing Technologies** at the Westin Harbour Castle in Toronto, Ontario, Canada from Oct. 18-23, 1998. Exciting, vibrant and cosmopolitan, Toronto (Huron Indian word for "meeting place") is Canada's largest city. Dr. David Dreyfuss of Lexmark Interna-

tional, Inc. will serve as General Chair; tel: 606-232-4011, fax: 606-232-3900, email: dreyfuss@lexmark.com.

The Society's NIP Conferences have emerged as the preeminent forum for presentation and discussion of advances in the field of non-impact and digital printing technologies. With a comprehensive technical program of more than 150 contributed papers by leading scientists and engineers from industry and academic organizations throughout the world, the Conference participants will learn of the latest developments in printing processes and materials, emerging technologies and future applications of digital printing. Planned session topics include: ink jet processes and materials, electrostatic marking processes and materials, photoreceptors, thermal printing, textile and fabric printing, quality control instrumentation, print and image quality, color science and image processing, production digital printing, novel digital printing systems, liquid toner processes and media for digital printing.

Keynote addresses will highlight each of the conference days to bring broader perspective to industry-wide issues and market trends. In addition, an Exhibition of digital printing products, components, materials and equipment is planned, a Print Gallery, will exhibit print samples from the latest technologies, and there will be an extensive program of Tutorials providing instruction in introductory and advanced topics related to digital printing.

The NIP14 Conference Committee invites submission of technical papers representing original work in the science and technology of digital printing. Interested parties should send an abstract of approximately 200 words and a biographical sketch of approximately 75 words by email to: Steve Korol, NIP14 Publications Chair, at steven.v.korol@tek.com (for questions, call Steve at 503-685-2140 or fax 503-682-1183). Please indicate a preferred session assignment, a preference for oral or poster presentation and provide complete

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author contact information (affiliation, mailing address, phone, fax and e-mail). The deadline for abstract submission is April 3, 1998. Full paper texts are due (in electronic form) on July 20, 1998.

## COUNCIL ON OPTICAL RADIATION MEASUREMENTS

**C**ORM has several standing technical committees which provide inputs to the Council on state-of-the-art in specific area of optical radiation measurement. This information is then shared with NIST and used in developing the periodic CORM Reports on recommendations for NIST research and development. Currently the Technical Committee on Optical Properties has a subcommittee OP-1 on "Inter-Comparisons of Spectral Reflectance and Transmittance Measurements." They are soliciting participants for round-robin type intercomparisons of industrial laboratories who make spectral diffuse reflectance factor measurements (UV-VIS-NIR), especially industrial laboratories who then process those data for use in color and color-difference analysis. If you would be interested in participating in such a study, please send information about your instrumentation (brand, spectral range, bandwidth, etc.) and the level of accuracy and precision that you believe that you maintain. Send all information to the committee chairman at:

Dr. Danny C. Rich  
Datacolor International  
5 Princess Road  
Lawrenceville, NJ 08648  
Tel: 608-895-7427  
Fax: 609-895-7461  
Danny @dcitclwr.usa.com

## THE COLOR ASSOCIATION OF THE UNITED STATES (CAUS)

**F**rom the January Issue of CAUS News which is devoted to the American male: his color taste, shopping habits and color psychology.

**The Male Color Psychology:** Men tend to buy colors that symbolize and express being male. Boys more often than not tend to be raised in blue, which most men regard as a true and trustworthy color for males. Hence, every conceivable shade of blue, from a very pale sky blue to a deep indigo, is a possible favorite among men.

Orange is another male favorite. International Safety Orange, intense enough to signal instruments that might cause injury and slightly abrasive to most women's eye, is popular among men.

Construction workers, hunters and rural outdoorsy types wear it happily.

Green, like orange, also suits the male psyche. Purples, especially plums and burgundy shades, in the proper place, have gained a following amongst younger men in the last decade, perhaps, because more menswear designers offer more shades of purples in their line.

A Brooks-Brothers-type pink shirt would be well received by most males. However, any shade of pink that is too bright would tend to be rejected. Yellow, like pink or purple, is appropriate in certain accessories, and styles such as a tie, a shirt, or a plaid.

Men, by and large, dress to fit into a group or a situation. A frequently asked question is what will the others be wearing. While a woman would not entertain the idea of showing up at a party wearing the same dress as another guest, a man would tend to be concerned with having his outfit blend in. Men prefer to simplify their dress

into a uniform. This perhaps explains why the combination of khaki pants and a white shirt and black belt has become so popular.

According to Art Okun of Dan River, who is a member of the CAUS Men's Forecasting Committee, "Every man has a favorite color. My son-in-law likes green, maybe because he has red hair. His other favorites duplicate those of his own father. These shades reflect his mother's color choices for her husband of environmental blues, browns and khakis." Most men, Art added, are happy if they have a brown, a blue and a gray suit. In the last few years a black suit has been added to the line-up. Many stylish men simply do not wish to be bothered with thinking about what to wear so they evolve a signature style. For example, Fred Pressman, who started Barney's, owned a black knit tie that he wore with practically everything.

Jo-Ann Goldberg of RE&H and a member of the CAUS Men's Committee, noted that her husband sets a dress standard for the other men at the major insurance company where he works. His business wardrobe creates a look that the others can emulate. He abandons his navy and gray suit uniform in his free time and changes into colorful plaid flannels, jeans and gum shoes.

Color in men's clothing may be evolving toward more sophisticated sensibilities. Men are more involved in color choices, have a greater interest, stake and desire to make statements through their dress. Young men who work in art field tend especially toward more individual color styling. A twenty-seven-year old graphic designer told us he looks for something unique in color that will fit into his wardrobe, yet be versatile. "I want to be able to wear it in five years," he said.

—Margaret Walch, Associate  
Director

**Men in Black:** Black is an extraordinary color. It combines elegance, sex appeal, and practicality. It is extremely versatile; of all the colors one might wear, it goes most easily from day to night. Black camouflages almost anything that may end up on

(Continued→)



you during the course of a busy day; puddle splash, ink, beverages, etc. (firsthand advice from a former bartender known as "Spill"). It's a cliché to say that everyone in New York wears black, but, if you look around the city, you'll notice that women in black dot the streets. Recently I have also noticed men are donning this practical color, recognizing it as being wearable and stylish as well.

I asked three men of different backgrounds about their wardrobes. The men unanimously agreed that black is a comfortable yet stylish color that is easily worn in many different situations. One of the men in an office that allows casual dress, said that black is particularly popular with the single men in the office who are more concerned with looking stylish than the married men.

I am partial to men in monochromatic dress of any color. Think Sean Connery, Tom Cruise, Brat Pitt — what colors do you see them in when you picture them in your head, dressed, of course. Would Will Smith and Tommy Lee Jones have had the appeal they did if their recent box office hit had been titled, "Men in Beige" or "Men in Fuchsia"? I tend to doubt it.

— *Jill Yoseloff, Parsons School of Design student & CAUS intern.*

CAUS holds (along with the NIST) all of the United States color standards, as well as the US Armed Forces shades.

Now in a unique service to members, CAUS is offering a special military standard color card for a limited time. The "United States Army Color Card — The Official Colors for Branches, Agencies, etc.." presents, in silk swatches, 27 US Military color standards on a special chart. The colors range from bright hues such as Bluebird to neutrals like US Army Buff. No American company should be without this excellent source color from all the military branches — US Army, Navy, Air Force, and Marines. This color card is the only authentic source of military colors available anywhere.

Members can obtain the **United States Army Color Card** exclusively

through CAUS. It will be available beginning March 1998. The cost is \$75 per card.

As always, you, are welcomed to make an appointment to stop by the CAUS offices and preview this indispensable card. If you would like to purchase the US Army Color Card or find out more about this offer and other CAUS services, feel free to contact the CAUS office anytime.

The Color Association of The United States  
409 West 44th Street  
New York, NY 10036  
tel: 212-582-6884  
fax: 212-757-4557

## AMERICAN ASSOCIATION OF TEXTILE CHEMISTS AND COLORISTS (AATCC)

This is a report of the activities of RA36, Color Measurement Research Committee for the year 1997.

RA36 met three times, in February, May and November. The Committee has been active in three major areas concerning color measurement: (1) *Color Technology in the Textile Industry, 2nd Edition* was completed and published. It is now available for sale from AATCC.

(2) A subcommittee on Lighting Communication was formed to examine and disseminate information describing the complications of using many different light sources in our industry.

(3) Several Test Methods and Evaluation Procedures were submitted to letter ballot. The committee reaffirmed with revisions, Evaluation Procedure 6 (Instrumental Color Measurement) and Evaluation Procedure 8 (AATCC 9-Step Chromatic

*Transference Scale*). Test Method 173 (CMC: *Calculation of Small Color Differences for Acceptability*) was submitted to TCR letter Ballot, revised, and resubmitted to committee letter ballot.

In addition, the Committee put on a session of the Color Workshop at AATCC Headquarters, Research Triangle Park, NC. The Committee also worked on developing a visual assessment procedure, and continues plans to revive the Glenn Color Rule.

*Respectfully Submitted*  
*Andrew Fritchley*  
*Secretary, RA36*

## DETROIT COLOUR COUNCIL (DCC)

Greetings to all! This new year brings new changes to the DCC Board. The Board would like to extend their appreciation to the leadership Daniel MacDonald provided as last year's DCC President. Departing after many years of service are James Grady, Pat Oldenkamp and Robert Santine. We thank them for all their past help and wish them a fond farewell. Joining the Board in 1998 are Wendy Lorenzen from BASF Company and Ken Maes from Standard Products Company.

We begin this year's activities with our first of four informative programs. In March, George Moon will present views on the influences of Europe on Automotive design. June's meeting topic will be on the regulatory and ecological issues regarding pigments. Also in June we will have our DCC Golf Outing. September's meeting topic will be on the color matching of different materials covering both exterior and interior challenges; presented using a panel discussion format. The fourth meeting is in November and will be presented by the Lighting Committee who will be issuing their update report on the automotive practices for visual evaluations. We will conclude this busy year with the perfect warm-up for the holidays, our annual Christmas

*(Continued→)*

Holiday Dinner Dance, on December 11 at Forest Lake Country Club.

John T. Loftus  
1998 resident  
Detroit Colour Council

## THE SIXTH COLOR IMAGING CONFERENCE: COLOR SCIENCE, SYSTEMS AND APPLICATIONS

The Scottsdale Color Imaging Conference has become the premier technical conference for scientists, technologists and engineers working in the areas of color science and systems and their application to color imaging. The conference is sponsored by Society for Imaging Science & Technology and Society for Information Display. ISCC is one of the Cooperating Societies. The conference is international in nature. In previous years one third of the participants came from outside the United States and Canada.

This color imaging conference is a broad mix of professional interests that is the hallmark of this conference. The focus of course is color—color as a critical element of the research and application efforts of this segment of the professional community. Beyond representing all areas of color imaging, this year's conference will focus on communication of color.

With this call for papers we are urging you, the members of the color imaging profession, to submit a paper to the technical program committee. All submitted papers will be refereed by the technical committee in order to ensure that the conference continues to provide significant and timely information on color imaging to its participants.

Please submit a 2-3 page abstract (1,000+ words), indicative of the final paper content, a list of keywords, and a short biography by April 4, 1998 to papers@imaging.org, or Color Abstracts; IS&T; 7003 Kilworth Lane, Springfield, VA 22151

Electronic Submissions are preferred. If submitting via e-mail, please use "Color 6" in the subject line. Electronic abstracts should be in PDF, RTF or plain text format.

If you have any questions, please contact the Technical Program Chairs Jack Holm and/or Todd Newman listed below.

Jack Holm  
Hewlett-Packard Corp.  
1501 Page Mill Road, 2U19  
Palo Alto, CA 94304, USA  
Tel: +1-415-236-2436  
Fax: +1-415-857-4320  
jack\_holm@hp.com

Todd Newman  
Silicon Graphics, Inc.  
2011 N. Shoreline Blvd.  
Mountain View, CA 94043  
Tel: +1-650-933-1614  
Fax: +1-650-932-0317  
tdn@sgi.com  
To get on the Color Systems mailing list, please write to: IS&T; 7003 Kilworth Lane, Springfield, VA 22151  
Fax: 703-642-9094  
email: info@imaging.org.

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(CR&A In This Issue,  
Cont. from pg. 3)

the incorrect assumption of random positioning of the dots, and statistical independence of the screens.

Let me close this column by calling your attention to the Review section. Again in this issue we have a large number of book reviews. The seven books reviewed are *Reliable Spectroradiometry* by Kostkowski, *The Reproduction of Color*, 5th Ed. by Hunt, *Color Bytes* by Bourges, *Munsell Color System: A Language for Color* by Luke, *Computergrafik und Farbmetrik* by Richter, *Color & Cognition in Mesoamerica* by MacLaury, and *Sensory Qualities* by Clark.

Dr. Ellen C. Carter  
President  
ISCC

## TECHNICAL ASSOCIATION OF GRAPHIC ARTS (TAGA)

**TAGA to Hold 50th Anniversary  
Conference in 1998**

The Technical Association of the Graphic Arts will hold its 50th Annual Technical Conference at Marriott's Lincolnshire Resort near Chicago, IL, USA, on April 26-29, 1998. TAGA is considered by many to be the home of the science and engineering of the graphic arts industry. It is a place where professional graphic arts scientists and engineers meet to exchange knowledge and learn how the different aspects of printing technology work together.

The conference, **TAGA: 50 Years of Graphic Arts Technology & Beyond**, will feature dual track sessions on the topics of Integrated Manufacturing Processes, Color Technologies, Color and Imaging, Computer-to-Plate Workflow, Press and Plate Technologies, Ink Technologies, and Paper Technologies. Half-day tutorial programs will be offered on Sunday, April 26. Tutorial sessions will include Digital Printing; Digital Workflow; Digital Photography; A Review of Display Technologies; Color Management Systems; An Introduction to Radiometry; Photometry; Photometry and Color; Automated Systems for Web Inspection; and Print Analysis.

According to TAGA President, John Long of Mitsubishi Imaging, "TAGA is the only industry association that provides a broad technical coverage of all aspects of printing. The technical people who attend can interact, exchange views, discuss research and broaden their view of current applications in the graphic arts industry. In the last few years, I have been able to get the background information on thermal plate and CTP platesetters by attending TAGA and discussing their

(Continued→)

research with the presenters. Both the proceedings and the conference help me stay current on the broader topics in the graphic arts: ink, paper, color and process control."

TAGA was founded in 1948 to provide a worldwide forum for the advancement of the graphic arts industry through the dissemination of information on the latest research and development and practical information regarding emerging graphic arts technologies.

Plan to attend to share information and ideas with your peers at TAGA 98. Many special events are planned in conjunction with this 50th Anniversary gala celebration. Don't miss it! To request a conference brochure or membership information, contact TAGA, 68 Lomb Memorial Drive, Rochester, NY 14623-5604;

Tel: 716-475-7470

Fax: 716-475-2250

email: info@taga.org. Visit our Web Site <http://www.taga.org>.

*Karen Lawrence, TAGA*

## UNIVERSITY OF WISCONSIN - MILWAUKEE

College of Engineering & Applied Science, Center for Continuing Engineering Education announces a three-day continuing education seminar, *Color and Color Control - In Paint, Coatings and Plastics*, from April 1-3, 1998 in Milwaukee, WI.

The objective of this applied course is to teach practical aspects of color technology in coatings and plastics. The basic concepts of color science from the light source to the colored object and finally the observer will be discussed. Suggestions will be offered on how to set up a realistic tolerance for an application and managing errors. In addition, in-class application of many instruments will be demonstrated during topic discussions.

Suggestions will be offered on how to set up a realistic tolerance for an

application and managing errors. In addition, in-class application of many instruments will be demonstrated during topic discussions.

Fee: \$1,900. It covers notebook, program materials, break refreshments and lunches. Lodging and other meals NOT included. A Certificate of Participation is presented to each registrant.

Location: This program will be held at:

University Center for Continuing Education

161 W. Wisconsin Avenue

STE 6000

Milwaukee, WI 53203

For More Information:

Roger Hirons, Program Director,

Tel: 414-227-3105.

email: rhirons@csd.uwm.edu.

Murali Vedula, Program Director,

Tel: 414-227-3121

email: mvedula@csd.uwm.edu.

Dawn Zawko, Program Assistant,

Tel: 414-227-3106

email: dzawko@csd.uwm.edu.

*Murali Vedula, Ph.D.*

Program Director - Manufacturing Engineering

## INTERNATIONAL CONFERENCE & SYMPOSIUM ON NATURAL COLORANTS

The Third International Symposium on Natural Pigments for use as Nutraceuticals and Colorants for Foods, Beverages, Confectionery and Cosmetics will be held April 19 to 22, 1998 at the Hyatt Regency, Princeton, NJ (not in Sevilla, Spain as originally planned). It

is co-sponsored by The Hereld Organization and the International Association of Color Manufacturers (Washington DC).

Already, well over 100 participants from the US, Canada and more than 30 foreign countries have pre-registered for the conference. They are academic and industrial scientists; regulatory, marketing and trade-association personnel, suppliers of color-measuring instruments/controls and consultants engaged in researching or involved with the production, modification, stabilization, formulation, use, analysis or sale of natural colorants for all applications. Details of the programs are available from The Hereld Organization, 200 Leeder Hill Drive, Hamden, CT 06517.

(tel/fax 203-281-6766.)

The Hereld Organization  
Suite 341, Whitney Center  
200 Leeder Hill Drive  
Hamden, CT 06517

## BOOK REVIEW:

**Foundations of Vision** by Brian A. Wandell, Sinauer Associates, Inc., Sunderland, MA, 1995, xvi + 476 pp., hardcover, \$49.95

The book is divided into three sections. In the first section, "Encoding", there are three chapters, entitled; "Image Formation", "The Photoreceptor Mosaic" and "Wavelength Encoding". In the first chapter, basic concepts of the physics of optics and image formation on the retina are discussed. Introduction of a linear systems method and their application to the process of retinal image formation is emphasized. In the second chapter, the photoreceptor cells, rods and cones, are described and the significance of their different distribution patterns on the retina are explained. The distribution of the long (L), medium (M) and short (S) wavelength sensitive cones are treated individually. It is noteworthy to mention that the

(Continued→)



author gives a special emphasis to the sparse distribution of S cones, which has been a special interest to vision scientists. The final chapter of this section deals with "Wavelength Encoding" and scotopic and photopic sensitivities of the visual systems. There is a detailed discussion of photopic wavelength encoding and color matching. There is also a brief discussion of the 1931 CIE systems of colorimetry.

The second section deals with "Representation", where one finds chapters on "The Retinal Representation", "The Cortical Representation", "Pattern Sensitivity" and "Multiresolution Image Representation". In the first two chapters in this section, the anatomy and physiology of the visual pathways is discussed. The chapter on pattern sensitivity offers an excellent overview of spatial and temporal visual sensitivities and their interrelations. The last chapter on this section "Multiresolution Image Representations" provides insight into how multiresolution theories of spatial vision have contributed to the efficient coding and representation of images.

The final section moves into higher-level perceptual and cognitive aspects of vision and is appropriately called "Interpretation", and contains chapters on "Color", "Motion and Depth" and "Seeing". Due to the author's research and expertise on color vision, the chapter on color is particularly strong. Color appearance and its relation to spectral sensitivity and color matching is discussed. Spectral image formation and surface reflectance estimation are also introduced. The portion dealing with the theory of color constancy is excellent. These topics are richly illustrated with clear examples and sample calculations. The chapter on motion and depth explains how the visual system computes and synthesizes these attributes from the available information.

In the final chapter the visual information that integrates pattern, color, motion and depth to give us our visual experience is explained.

This is a well written book that can be used both as a text and as a reference. It should and must occupy a prime spot in every scientist's or engineer's library.

but a small supply is still available from Nick Hale, 147 Caribbean Ct., Naples, FL 34108. \$35.00 prepaid.

Nick Hale

## SCIENCE FAIR PROJECT

A few days ago, Cynthia Sturke, ISCC Office Manager received the following letter that was forwarded to her from John Wiley & Sons Subscription Customer Service.

Hi. My name is Brittany Danko. I am 11 years old and am in Clark Middle School in Hammond, Indiana. I hope you can help me.

I have been working on my science fair project. I added food coloring to cream cheese calling it rainbow cheese. I then tested people to see which color they liked. My categories are elementary, middle, high schools and adults. My results are that elementary kids liked yellow, middle school kids liked blue, high school liked blue and adults liked white. (I used red, blue, and yellow food coloring and left one container of cream cheese plain.) My project proved my hypothesis (that color would affect the perception of taste).

My problem is this. Now that I have the results, I don't know how to interpret them. Why do younger kids like yellow? Why do middle school kids like blue? What about the color of the cream cheese made it taste different. Can you help me?

My project is due Friday. I have everything complete except my interpretation. Can you tell me where to look for this information? Or can you help me?

Thank you very much for your time.

Brittany Danko  
bld@mail.netnitco.net

## LONG RANGE PLANNING MEETING 1998

**M**ark your calendars now for May 16 and 17 for the 1998 Long Range Planning Meeting in Washington, DC. area. Saturday, May 16 is scheduled for a half-day ISCC Board Meeting followed by one and a half day sessions dedicated to planning the future of our Inter-Society Color Council into the next millennium.

Lou Graham of Louis Graham & Associates of Greensboro, NC has engaged the services of a professional facilitator. The specific place and agenda will be announced in the near future. Please call Magenta Yglesias, (202-328-2120 or 410-226-5604) for more information and inclusion of any item that you like to have included in

the agenda for the Long Range Planning Meeting '98,

Magenta Yglesias  
ASID

## ISCC-NBS COLOR NAMES & COLOR CHARTS

**I**SCC Project Committee 2 resulted in the publication of the ISCC-NBS Color Names, Method and Dictionary in 1965 (NBS Circular 553) and the Color Charts. Both then were available from NBS (now NIST). Circular 553 was succeeded by NBS Spec. Publ. 440 and is still available from NIST, Gaithersburg, MD 20899. NIST no longer has the ISCC-NBS Color Charts,

## ADDITION TO USNC/CIE REPORT ON ISCC NEWS #371

**Alan Kravets was elected to a three year term as a Director of USNC (1997-2000).**

### GENTLE REMINDER!

All appropriate information submitted to this *NEWS* publication is the full and complete responsibility of the sender.

This publication and the ISCC assumes no responsibility for information changes and inaccuracies.

Thanks,  
The Editor

## C A L E N D A R

Please send information on Member Body and other organization meetings involving color and appearance functions with dates, places, and information source to:

Cynthia Sturke  
ISCC Office Manager  
11491 Sunset Hills Rd.  
Reston, VA 20190  
tel: 703-318-0263  
fax: 703-318-0514  
email: iscc@compuserve.com

## 1998

**COLOUR and IMAGING WEEK at DERBY**, March 23-27, University of Derby, United Kingdom, inf.: Linda Marshall; tel: +44(0)115-9376070;

**ICE LATINOAMERICA '98**, Apr. 15-17, a trade show for the South and Central American Coating Industry at the Miami Beach Convention Center. It is being held in conjunction with lasticos de las Americas." For information, please call FSCT at 610-940-0777 or fax : 610-940-0292.

**COLOR MARKETING GROUP (CMG)**, Spring International Conf., Apr. 19-21, The Broadmoor, Colorado Spring, CO. Inf.: 5904 Richmond Hwy., Suite 408, Alexandria, VA tel: 703-329-8500, fax: 703-329-0155; email: colorcmg@erols.com

**TAGA 98, 50TH ANNIVERSARY CELEBRATION**, Apr. 26-29, Technical Association of the Graphic Arts, Marriott Lincolnshire Resort, Chicago, IL, inf.: Karen Lawrence, tel: 716-479-7470

**COLOR & APPEARANCE DIVISION, SOCIETY of PLASTIC ENGINEERS**, CAD/(SPE) Annual Meeting-ANTEC 98, April 26-30, Convention Center, Atlanta, GA; CAD Sessions: April 28, 1998

**TAPPI**, May 4-6, Technical Association of the Pulp and Paper Industry ; Sheraton New Orleans, LA, inf: Lisa Archer; tel: 800-332-8686, ext: 225

**CORM 98**, May 17-21, Council for Optical Radiation Measurements , Annual Conference and Business Meeting with Joint CIE Division II, at NIST Optoelectronics Division, Boulder CO inf.: N.L Johnson, tel: 612-733-5939, email: nljohnson@mmm.com.

**CIE Division II**, May 18-19, Commission International de l'Éclairage, Boulder, CO, see CORM 98 meeting, Inf.: CIE email: ciecb@ping.at

**SID 98**, Society for Information Display, May 17-22, Anaheim Convention Center, Anaheim, CA inf: Lauren Kinsey, SID, 1526 Brookhollow Drive, Suite 82, Santa Ana, CA 92705  
tel: 714-545-1526; fax: 714-545-1547;  
email: socforinfodisplay@mcimail.com

**ASTM, COMMITTEE D-1**, Paint, and Related Coatings, Materials and Applications, Omni Inner Harbor, Baltimore, MD, Inf.: Scott Orthey, tel 610-832-9717; fax: 610-832-9666

**ASTM, Committee E-12 ON APPEARANCE**, June 17-19, Atlanta Hilton, Atlanta, GA, inf.: Bode Buckley, tel: 610-832-9740; fax: 610-832-1547.

**1998 Panamerican Coatings Expo.** will be held at the World Trade Center in Mexico City, on July 23-24. For information, call FSCT at 610-940-0777; fax: 610-940-0292.

**Argencolor 1998** - The 4th Argentine Congress on Color, August 3-6, School of Fine Arts, Misiones University, Misiones, Argentina, inf.: Prof. Mirta Rossetti, email: rossetti@obernet.com.ag.

**AATCC International Conference and Exhibition**, Sept. 22-25, American Association of Textile Chemists and Colorists, Marriott, Philadelphia, PA inf.: Shirley Clifton, tel: 919-549-8141; fax: 919-549-8933.

**Color and Appearance (CAD) Annual Conference (RETEC)**, "Riding the Wavelengths of Color", Sept. 27-29; Cleveland Downtown Marriott, Cleveland, OH.

(Continued→)

**ISCC ANNUAL MEETING (Oct. 2-4); , INTER-SOCIETY COLOR COUNCIL;** Marriott Inner Harbor Hotel, Baltimore, MD ; inf.: ISCC office, tel: 703-318-0263 and OSA ANNUAL MEETING, Oct. 4-8; Optical Society of America ; Baltimore Convention Center, Baltimore, MD inf.: OSA, tel: 202-223-0920; fax: 202-416-6100.

**COLOR MARKETING GROUP (CMG),** Fall International Conference, Oct. 4-6, Le Centre Sheraton Hotel, Montreal, Canada, Info: CMG, 5904 Richmond Hwy, Suite 408, Alexandria, VA 22303

**AIC Interim Meeting, Oslo, Norway,** Oct. 10-11, Association Internationale de la Couleur, Inf.: Prof. Mitsuo Ikeda, fax: +81-775-61 26 63, email: miked@bkc.ritsumei.ac.jp.

**Colour Between Art and Science; OSLO INTERNATIONAL COLOUR CONFERENCE 1998,** Oslo, Norway, Oct. 8-11, National College of Art and Design, NCAD, Institute of Colour, Ullevålsveien 5, N-0165 Oslo, Norway, For further information please contact Conference Secretary Ms. Ane Forsmo or Adm. Leader Mr. Erik Wessel; Tel: (+47)22995680, Fax: (+47)22995681; email: colour@chaos.shks.no; <http://samson.shks.no/colour/>

**ICE '98 - Federation of Societies for Coatings Technology's Annual Meeting and International Coatings Expo and Technical Conference—Oct. 11-16,** at Ernest N. Morial Convention Center, New Orleans, LA.

**TAPPI Conference,** Oct 18-23, Technical Association of the Pulp and Paper Industry, Milwaukee Hilton, Milwaukee, WI

**IS&T/SID, Sixth Color Imaging Conference,** Nov 16-19, Society for Imaging Science and Technology/Society for Information Display, Sunburst Hotel, Scottsdale, AZ, inf.: IS&T Conference Manager, 7003 Kilworth Lane, Springfield, VA 22151, tel: 703-642-9090; fax: 703-642-9094; email: info@imaging.org; internet: <http://www.imaging.org>.

## 1999

**ASTM COMMITTEE D-1, Paint and Related Coatings, Materials and Applications,** Jan. 24-27, The Peabody Memphis, Memphis, TN, inf.: Scott Orthey, tel: 610-832-9717; fax: 610-832-9666

**ASTM COMMITTEE E-12 ON APPEARANCE,** Jan 24-26, The Peabody Memphis, Memphis, TN, inf.: Bode Buckley; tel: 610-832-9740; fax: 610-832-1547

**ISCC & TAGA ANNUAL MEETINGS May 5-7, INTER-SOCIETY COLOR COUNCIL** and May 2-5, Technical Association of the Graphic Arts Technical Conf. Westin Bayshore Hotel, Vancouver, British Columbia, Canada; inf. Prof. Bob Chung; tel: 716-475-2722

**SID 99,** May 16-21, Society for Information Display inf.: SID tel: 714-545-1526, email: socinfo@mcimail.com.

**ASTM COMMITTEE D-1, Paint and Related Coatings, Materials and Applications,** June 13-16, Omni Rosen Hotel, Orlando, FL ; inf.: Scott Orthey, tel: 610-832-9717; fax: 610-832-9666.

**TAPPI, Oct. 17-22, Technical Association of the Pulp and Paper Industry Conference,** Omni Durham Hotel, Durham, NC, inf: Lisa Archer, tel: 800-332-8686, ext: 225

**OSA ANNUAL MEETING,** Optical Society of America, Santa Clara, CA, inf.: OSA, tel: 202-223-0920, fax: 202-416-6100

**AATCC, INTERNATIONAL CONFERENCE AND EXHIBITION,** Oct. 12-15, American Association of Textile Chemists and Colorists, Convention Center, Charlotte, NC, inf.: Shirley Clifton, tel: 919-549-8141; fax: 919-549-8933

## 2000

**ASTM COMMITTEE D-1, Paint, and Related Coatings, Materials and Applications,** Jan 23-26, Hyatt Regency, New Orleans, LA inf.: Scott Orthey; tel: 610-832-9717; fax: 610-832-9666.

**ASTM COMMITTEE E12 on APPEARANCE,** Jan 24-26, Hyatt Regency, New Orleans, LA, inf.: Bode Buckley; tel: 610-832-9740; fax: 610-832-1547.

**ISCC & CPMA ANNUAL MEETINGS;** April, INTER-SOCIETY COLOR COUNCIL and Color Pigments Manufacturers Association, Charlotte, NC., inf.: Romesh Kumar tel: 401-823-2161; email: romesh.kumar@clariant.com

**SID 2000,** May 14-19, Society for Information Display. Long Beach CA, Info:SID, tel: 714-545-1526; fax: 714-545-1547; email: socforinfo@mcimail.com  
WWW home page: <http://www.sid.org>.

**AATCC INTERNATIONAL CONFERENCE AND EXHIBITION,** Oct. 15-18, American Association of Textile Chemists and Colorists, Benton Convention Center, Winston-Salem, SC, inf.: Shirley Clifton, tel: 919-549-8141; fax: 919-549-8141



# J O B S W A N T E D !



This Section is intended to help ISCC members that are in need of, and are looking for employment. Here is an opportunity to use the resources at hand.

There is no charge for this service, however, the restrictions are as follows:

1. This service is for ISCC members' use only.
2. No more than 50 words may be used to describe yourself.  
(Not including name address and/or telephone number).
3. If you are using a P.O. Box, you must supply a complete address.
4. No Agency representing member(s) is allowed.
5. Neither the ISCC News nor the editors are responsible for any errors.
6. You must advise us in writing when you have obtained employment.

We hope this new section will be of value to you, the ISCC member. If you have any suggestions/criticisms, please send them to the editor. Let's make this work!

## SEEKING EMPLOYMENT

### SALES/ MARKETING IN COLOR

BS in Chemistry/Math. 20 years experience in instrumentation, sales, sales management, marketing, key account development. Past eight (8) years devoted to the color industry. Member of: ACS, ISCC, SIC, IFT, ITT, SPE, Paint/Coatings. Cannot relocate away from Northern New Jersey.

William Tuting

507 Shirleen Lane

Mine Hill, NJ 07803

Tel : 973-328-7689

fax: 973-328-8654

email: btuting@worldnet.att.net

## SEEKING EMPLOYMENT IN R&D POSITION IN COLOR

PhD (expected, 1997) Color Vision, MS Biophysics, BS Biomedical Engineering. Highly motivated, adaptable and dependable individual seeking R&D position. Interdisciplinary background and research experience in color, color vision, biomedical instrumentation, colorimetry, photometry and reflectometry. Working knowledge of computer graphics, image analysis/processing, mathematical modelling. Computer and statistics skills include Pascal, C C++, Matlab, Assembly, S, SAS, Steplt.

Jun Xu

The University of Chicago, Visual Science Center

939 E. 57th Street, Chicago IL 60637

Tel: 773-702-1987, Fax: 773-702-4442

email: junxu@midway.uchicago.edu

## SEEKING EMPLOYMENT RELATED TO COLORATION

Noted Bulgarian color and light expert, returning from visiting scholarship in Japan, seeks short or long term employment in the West. Thirty years' extensive and varied experience in visual and instrumental color measurement in many systems. Capable in research, teaching, program development, quality control. Multilingual.

Assoc. Prof. Dr. Todor Kehlbarov

BG-1000 Sofia, P.O. Box 1089

Bulgaria

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