

Inter-Society Color Council *News*

Number 364 November/December 1996

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Season's Greetings

Wishing each and
everyone a very Merry
Christmas and a Happy
and Healthy New Year!

Gultekin Celikiz-ISCC News Editor

50 YEARS AGO IN ISCC NEWS - NOV-DEC 1946

R. S. HUNTER JOINS THE HENRY A. GARDNER LABORATORY, INC.

Under date of October 16, we received from Mr. Henry A. Gardner, President, Henry A. Gardner Laboratory, Inc., the following announcement concerning the new affiliation of Richard S. Hunter, long and favorably known to his many friends in the Optical Society of America, the American Ceramic Society, the National Bureau of Standards and the ISCC. We are sure they join us in extending our earnest congratulations. Mr. Gardner, after reminding the editors of Hunter's work on the gloss, reflectance and color characteristics of materials, and that he is the new chairman of the American Ceramic Society delegation to the ISCC, and a member of the ISCC subcommittee on Problem 12 which is studying illumination and viewing conditions in the colorimetry of reflecting materials, writes:

Richard S. Hunter, formerly, specialist in methods of color and gloss measurement at the National Bureau of Standards, has joined the Henry A. Gardner Laboratory, Inc., at Bethesda, Maryland. As their chief optical engineer, he will develop apparatus and techniques for measuring gloss, reflectance, color turbidity, and other optical properties of materials.

Mr. Hunter is a graduate of George Washington University. At the National Bureau of Standards, which he joined in 1927, he did important research on gloss, its recognition, description and measurement, on reflectometry, and on photoelectric tristimulus colorimetry. He developed a multipurpose photoelectric reflectometer which is widely used to measure the reflectance, color and gloss of reflecting materials. A number of other instruments of his design are applied to various special problems. As his contribution to the war effort, Mr. Hunter developed a simple device for aiming the flashes of sunlight from signaling mirrors used by downed aviators to attract the attention of possible rescuers.

(This is where the article ended 50 years ago in the ISCC News. The editor wanted to bring you, the members, up to date with Mr. Hunter.)

(Continued→)

As a result of his early research in gloss evaluation, Mr. Hunter published "Methods of Determining Gloss" in the NBS Journal of Research. This work later became part of the ASTM test for Specular Gloss (of paint finishes) D523. This method eventually found its way into the gloss test methods of several foreign countries, as well as the method published by the Paint Testing Committee of the ISO. In 1952, after leaving Gardner Laboratory, Mr. Hunter established his own laboratory. Hunter Associates Laboratory occupied 16,000 square feet of space in Fairfax, VA. In 1975 John Wiley published Mr. Hunter's book "The Measurement of Appearance." In 1987 a second edition of this book, co-authored by Richard Harold was printed. Mr. Hunter also moved his HunterLab into a bigger facility in Reston, Va. In 1982, Mr. and Mrs. Hunter established the Richard S. Hunter Professorship of Color Science at Rochester Institute of Technology.

Mr. Hunter was an honorary member of ISCC and a charter member of ASTM Committee E-12 on Appearance. He has been honored with many awards: including ASTM Award of Merit, Brunning Award of the Federation of Societies for Coatings Technology (FSCT), Canner Packer Award (Citrus Colorimeter), Technical Association of the Pulp and Paper Industry (TAPPI) Testing Division Award, Richardson Award from the Optical Society of America, ISCC Macbeth Award, Shugar Memorial Award from Baltimore Coatings Society and in 1991 the ISCC Godlove Award.

Mr. R. Hunter was an active Chairman Emeritus of HunterLab until his death in Jan. 16, 1991.

(The Editor thanks Mr. Harry Hammond for supplying the background material for this article.)

*Harry K. Hammond III
BYK-Gardner, USA*

PRESIDENT'S COLUMN

I would like to use the President's Column this month to report on the ISCC Fall Board meeting that was held on Saturday, October 5th. The site of the board meeting is selected based on future annual meeting locations. And Baltimore is big in our future. The first time that we held an annual meeting in Baltimore was in 1988. Now we will return there for our next two annual meetings, however members should note that these meetings are at rather unusual times for us. September in 1997 and October in 1998. Back to the board meeting and back to Baltimore all the members of the Executive Committee were present as well as five out of the nine board members: Bill Vogel, Mark Fairchild, Wade Thompson, Helen Epps, and Jack Ladson. We also were pleased to have the following committee chairs present as guests: Gary Beebe (1997 Annual Meeting), Shashi Caan (Interest Group III, Tek Celikiz (Publications), Harry Hammond (History Co-Chair), Romesh Kumar (Arrangements), and Magenta Yglesias (Long Range Planning). Finally, our Office Manager Cynthia Sturke attended, making a lively total of 17. I would like to thank Romesh for his usual good job at arranging the hotel, meeting room and menus for the day.

I shall highlight some of the items of interest discussed at the meeting. More information about many of these items can be found later in the *Newsletter*. First here are some items from the various standing committees. The board approved Godlove Award Subcommittee's recommendations that Henry Hemmendinger should receive the 1997 Godlove Award. Congratulations Henry! Magenta Yglesias did a detailed survey of the recommendations from the last two long range planning seminars in 1981 and 1991, with a view to determine where we are today. Joy Luke produced a brief history of the ISCC that we hope to have available for members and newcomers soon. Vivianne Smith

reported that the theme of the Education Program at the next annual meeting will be color vision deficiencies.

Other ISCC members have been very busy planning our future meetings, which were reported on at this board meeting. First the annual meetings: Gary Beebe has the planning in the final stages for the 1997 meeting with the Color and Appearance Division of the Society of Plastic Engineers. Mark Fairchild, 1998 Meeting Chair, is coordinating the schedule for the 1998 annual meeting with the color and vision groups of the Optical Society of America (OSA) to be held the first week in October. Finally we have agreed to work with the Technical Association of the Graphic Arts (TAGA) for successive meetings bridged with a symposium in 1999. The Symposium will be May 5, and the ISCC meeting will follow on May 6 & 7, 1999.

We are very excited about the 1998 Williamsburg Conference that Wade Thompson is chairing. The topic is "Color and Design: 21st Century Technology and Creativity," and it will be held February 22 - 24, 1998 in Williamsburg, Virginia. Mark your calendar for all these events. Cindy Brewer is in the early planning stages for the Second Panchromatic Conference to be held in Williamsburg in 1999. The topic for that conference is "Color in its Surround."

On a less exciting note, Project Committees 49 and 50 were discontinued in part due to lack of interest or chairmen. This brings me to my final point. We are always looking for a few good people to volunteer. Specifically, we could use help in the Vice Chair category for Interest Group II and III. We are also forming an ad hoc committee to build our sustaining membership category. Please encourage your company or employer to become an ISCC sustaining member, and if you want help on that ad hoc committee or in any other way, please contact me. Let me personally thank you all the board members and committee chairs and members who are already active volunteers.

Ellen Carter President, ISCC

GODLOVE AWARD

HENRY HEMMENDINGER TO RECEIVE GODLOVE AWARD

At the Awards Luncheon during the Inter-Society Color Council (ISCC) Annual Meeting in Baltimore, Maryland (Sept. 14-17, 1997), Dr. Henry Hemmendinger will be honored with the presentation of the prestigious Godlove Award. The Godlove Award, named for Dr. I. H. Godlove, is the highest honor bestowed by the ISCC, and is given in recognition of a lifetime of distinguished service to the color community.

For half a century Dr. Hemmendinger has been a mainstay of the color-technology community. His career has focused on quantifying performance errors in colorimetry, incurred by photometric equipment and also by human observers. Dr. Hemmendinger has brought to bear a deep knowledge of how spectral curves can aid in the formulation of products with desirable appearance attributes. He is also a leader in understanding metamerism (breakdown in color matches by change either of illuminant or observer).

Of special note is Dr. Hemmendinger's work to establish and to publish methods for precision spectrophotometry of reflecting materials. He is devoted to getting good practice and good standards into the hands of industrial colorimetrists, a task in which his contribution has been compared to that of Deane Judd at the National Bureau of Standards. He has presented numerous papers on this subject and is a leading expert on spectrophotometric precision and accuracy. He has assumed the role of mentor in this area with vigor and authority.

In addition to this major calling, Dr. Hemmendinger has contributed to many technological innovations, especially in collaboration with Hugh Davidson (who received the Godlove Award in 1977). In the 1950s Davidson and Hemmendinger became pioneers of computer-directed colorant formulation, having developed the colorant-mixture analog computer, COMIC, whose lineage is still visible in the world of formulation products. In addition, Davidson and Hemmendinger evaluated the curve shapes for candidate formulations for the Munsell system in glossy paint. This was a significant achievement: current embodiments are nowhere near as color-constant. Many photographic products today are designed based on the rules they developed for the glossy Munsell Book of Color. Finally, Davidson and Hemmendinger developed the D&H Color Rule, a device to quantify the extent of observer metamerism. This rule is still viewed as indispensable in teaching the principles of observer metamerism.

In addition to these contributions, Dr. Hemmendinger has fruitfully combined his areas of expertise—e.g., he developed methods to use metameric pairs as a tool to assess instrument performance.

Dr. Hemmendinger received his A.B. and A.M. degrees from Harvard in 1935 and 1937, and his Ph.D. (in Astronomy) from Princeton in 1939. During World War II, he performed OSRD research on infrared-sensitive phosphors at the University of Rochester, and later became part of the Operations Research Group of the U.S. Navy. From 1946 to 1952, he was a group leader in color and spectrophotometry at General Aniline and Film Corp. In 1952 he established (with Hugh Davidson) the firm of Davidson and Hemmendinger, to do color consulting and color measurement. In 1970 he founded the Hemmendinger Color Laboratory (HCL), which is devoted to the preparation and distribution of spectrophotometric and colorimetric color standards. In 1994, Hugh S. Fairman joined him as a partner in HCL. Dr. Hemmendinger is a member of the American Society for Testing and Materials, a fellow of the Optical Society of America, and a lifetime member of the U.S. National Committee of the CIE.

*Dr. Michael Brill
Chairman of Godlove Committee*

COLOR RESEARCH AND APPLICATION

IN THIS ISSUE
December 1996

The graphic-arts industry is one of the areas where the addition of color has become dominant in the way that the consumer views the product. High-quality color images are expected. The problem of determining how much of each ink should be printed onto the substrate to render the desired color image is called the color separation problem. This is usually resolved by a several step technique characterizing the dynamic range of the printer through measured color samples, modeling the relation between the range and the colors mathematically, usually using the Neugebauer equations, then inverting the model using an iterative process. Needless to say the inversion is not without some difficulty, since it is dependent on the starting point and may yield multiple answers. In "Inversion of the Neugebauer Equations," Mary Mahy and Paul Delabastita use analytical techniques to proceed a long way toward solving the Neugebauer equation.

Over the past several years, we have been reporting on the development of several color appearance models. The Nayatani model and the Hunt model probably have the most extensive literature collection; however, they are not the only contenders. More recently descriptions and modifications of the RLAB model were published. In this issue, a new model, LLAB, is introduced by M. Ronnier Luo, Mei-Chun Lo, and Wen-Guey Kuo. "The LLAB(l:c) Colour Model" combines a chromatic adaptation transform derived by Lam and Rigg with a modified CIELAB uniform color scale. The model is capable of quantifying the change of color appearance occurring with changes in the viewing parameters such as varying light sources, different surrounds or production media, stimuli size, luminance levels, or with

achromatic backgrounds. However, it does not give predictions for chroma (as distinct from colorfulness), or for brightness, and it does not include any rod response.

Moving from how colors appear to how we remember colors, Kenji Uchikawa and Hiroyuki Shinodo look at the "Influence of Basic Color Categories on Color Memory Discrimination." Their research shows that two colors with a certain color difference are likely to be confused more easily when they fall into the same basic color category than when the colors are in different color categories. These results indicate that color memory is characterized by the color categories, suggesting a color-category mechanism in a higher level of color vision.

Our next article is in the field of measurement. Accurate measurements of the regular spectral transmittance of filters are important in the fields of filter radiometry, photometry, and colorimetry. Industry seeks common ground by trying their measurements to those of national standardizing laboratories. The reliability of the results of measurements are confirmed by intercomparison of results among national standards laboratories. "Comparison Measurements on Regular Spectral Transmittance" is a comparison of the scales of regular spectral transmittance of the Metrology Research Institute in Finland and the Swedish National Testing and Research Institute presented by Farshud Manoochehri, Leif Liedquit and Erkki Ikonen.

In the next article, N. Kwallek, C. M. Lewis, J. W. D. Lin-Hsiao, and H. Woodson report on a study to investigate the relationships among the qualities of the color (hue, saturation, value, and coolness or warmth of the colors) on human performance, mood, and color preference in the office environment. In "Effects of Nine Monochromatic Office Interior Colors on Clerical Tasks and Worker Mood," the authors studied 675 subjects, and found significantly more errors in clerical tasks in certain offices. They

also found gender differences in both performance and mood.

The Munsell Color Science Laboratory at Rochester Institute of Technology established an Industrial Color Difference Evaluation Consortium in 1995 to improve the effectiveness of automated industrial-color difference evaluation. One of the objectives of the program was to provide guidance to industry on the effective application of computational color-difference evaluation. Several of the color difference metrics in common use now such as CIE94 and CMC include one or more adjustable parameters or factors. In the article, "Deriving Instrumental Tolerances from Pass-Fail and Colorimetric Data," in our Industrial Applications section, Roy S. Berns discusses the questions of the choice of color difference metric, the optimization of the l:c ratio, selection of values for the adjustable parameters, and whether or not to derive an ellipsoid.

I want to draw attention to one more item in this issue, a letter in the Communications and Comments column. Previously, we have had comments in this column discussing the CIE Standard Daylight Illuminants and also the difficulty of developing sources approximating the daylight illuminants. Now J. Schanda and B. Kránicz discuss the "Possible Re-Definition of the CIE Standard Daylight Illuminant Spectral Power Distribution." Perhaps this will lead to changes in the definition of the CIE standard.

Ellen C. Carter
Editor

Color Research and Application
(703) 527-6003



ANNOUNCEMENT 1997 ISCC ANNUAL MEETING

The 1997 ISCC Annual Meeting will be held September 14 - 15, 1997 at the Marriott Inner Harbor in Baltimore. It will be a joint meeting with the Color and Appearance Division of the Society of Plastic Engineers who will have their RETEC meeting on September 16 and 17, 1997. On the crossover afternoon/evening (Monday), there will be a buffet reception at Camden Yards followed by an Orioles baseball game. The major instrument suppliers will be setting up exhibits on Monday afternoon to be available for breakout tutorial sessions as part of the CAD RETEC. Registrations will be mailed out in the July timeframe with agenda's and speakers. To encourage attendance at both events, registrations will be reduced if attending both ISCC and CAD meetings.

If any companies are willing to sponsor coffee breaks, lunches or receptions, we will provide ample publicity. Please contact Gary E. Beebe at (215)-785-8497.



COLOR AND DESIGN : 21ST CENTURY TECHNOLOGY AND CREATIVITY 1998 WILLIAMSBURG CONFERENCE OF THE INTER-SOCIETY COLOR COUNCIL FEB. 22 - 24 1998

The accelerating rate of technological change has presented designers, artists and other creative professionals involved with color, new challenges, methodologies and design strategies within the studio and workplace. While increased efficiency may result from new technology, ever present is the challenge to preserve quality, creativity and uniqueness within the overall pursuit of excellence.

The **Inter-Society Color Council** is sponsoring a **Williamsburg Conference** focusing on Color and Design and the impact of technology on the pursuit of design and artistic excellence. The objective of this conference is to present current research and exchange information among color, design and technology specialists. A two and one-half day program of invited and contributed papers is planned. Contributed papers will consist of thirty minute presentations. A Conference Proceedings consisting of summaries of the papers will be available at the conference.

The organizing committee solicits papers on aspects of color, design and technology relating to the overall conference theme and the following seminar titles:

Day One: Technology and the Creative Process

Day Two: Education

Day Three: Visions for the Future

Information for Contributors: Abstracts must be submitted to the organizing committee by August 1, 1997. Authors will be notified of acceptance by September 1, 1997. Summaries of the papers of up to four pages will be required and must be received by November 15, 1997.

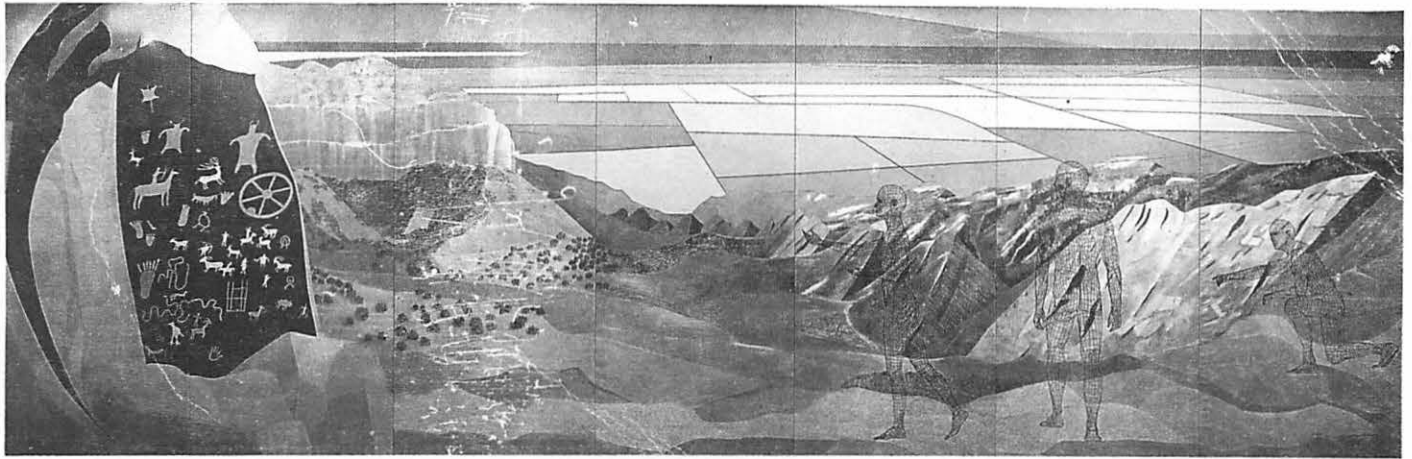
All accepted papers for the Conference will be submitted for review for inclusion in a special edition of Color Research and Application based on the Conference theme.

The authors, affiliations, principle author's address and daytime telephone number, title and abstract should be typed on one page. Submissions and requests for more information should be sent to:

Prof. Wade S. Thompson
Color and Design: 21st Century
Technology and Creativity
1998 ISCC Williamsburg Conference
1910 East Cardinal St.
Springfield, MO 65804

Organizing Committee:
Wade S. Thompson, Chair, Anna
Campbell Bliss, Magenta Yglesias

The Inter-Society Color Council, founded in 1931, is an organization of societies and creative individuals who work to propagate the understanding of color as it relates to art, science and industry.



NEWS ABOUT MEMBERS

Anna Campbell Bliss

Discoverers 1996, an oil painting and screen on canvas, 8' x 25', Salt Lake City International Airport, New International Facility. "The mural celebrates the extremes one finds in Utah from the natural beauty of the wilderness areas to highly cultivated lands and from the prehistoric Indian to pioneering computer developments that are transforming life here."

In commenting about the Airport Art Program for the dedication, Louis Miller, the former Executive Director said: "The new airport is a perfect enhancement. The committee had the vision to create a multimedia, provocative, interesting

collection that makes an eloquent statement about our state and unique environment. We constantly receive accolades and excited response to this collection. It makes the atmosphere of this public space a little less utilitarian in nature and a lot more human."

Mrs. Bliss commenting, "My work draws upon a wide range of interests and explorations seeking to make connections between nature and the constructed environment, poetry and math and between the computer and the more intuitive tradition of artistic experimentation."

Discoverers 1996 Technical: The computer was used in developing the concept from my photographic studies of southern Utah. The texture was programmed in the "C" language and the wire mesh figures created by Viewpoint of Orem, Utah. The latter were transferred photographically to screen and printed on the canvas Panels.

Magenta Yglesias

Let us salute Magenta Yglesias. Her book, "*The Little Raindrop That Lost Its Rainbow, A Fairy Tale*" has been published by Pyramid Atlantic, 6001 66th Avenue, Riverdale, MD 20737. Magenta both wrote and illustrated this colorful children's story, which integrates the colors of the rainbow and many of the cultural associations found with these colors. Young children will delight in the busy bees and the bright colors while they unconsciously learn about colors. Look for it at the museum stores or from the publishers.

Ellen Carter
President, ISCC

NEW MEMBERS

The following is a list of new members approved during the last board meeting in Baltimore.

Sandra Austin
5803 New England Woods Dr.
Burke, VA 27015
particular interest: Landscape design

Animesh Bose
RIT Munsell Color Sc. Lab.
9 Bellmahr .
Rochester, NY 14624
particular interest: Application of color modeling techniques in output devices to build CRDs of various color profiles and so forth

Gustav Braun
RIT
54 Lomb Drive
Rochester, NY 14623-5604
particular interest: Color management, color appearance gamut mapping, color modeling

Daniel Choi
Reed Spectrum
Holden Industrial Park
Holden, MA 01520
particular interest: Measuring and communicating color for & from customer

Douglas E. Corbin
95 Covington Rd.
Rochester NY 14617
particular interest: Color management for desktop publishing, correction of faded color films, and other color areas

Donnie Crew
Tennessee Electroplating
164
Viar Rd.
Ripley, TN 38063
particular interest: tight color control in automotive exterior application

S. T. Greer
S. T. Greer Associates Inc.
1301 Surf Court
N. Myrtle Beach, SC 29582-2642
particular interest: "is it good enough"

Joe Harrauld
Tennessee Electroplating
164 Viar Road
Ripley TN 38063
particular interest: Development & application of paints

Thomas Hiegel
Tennessee Electroplating
164 Viar Rd.
Ripley, TN 38063
particular interest: keeping up with all the new color changes

Alan Kravetz
Minolta Corp.
101 Williams Drive
Ramsey, NJ 07446
particular interest: design & application of color instruments

Catherine Lambrecht
Laurel Industries
280 Laurel Avenue
Highland Park, IL 60035
particular interest: industrial application of color

Tien-Rein Lee
NYU/Center for Graphic Communications
496 Laguardia Place, #3D
New York, NY 10012
particular interest: teaching color reproduction at University level both in Taiwan and USA (NYU). Working on a color order system that comes with a color preference system

Mary McKnight
NIST
Bldg 226, Rm B350
Gaithersburg MD 20899
particular interest: improved measurements and modeling of reflectance properties of coatings and rendering

Bartley F. McNally
U. S. Army,
Natick Research, Development & Eng. Center
SSCNC-TTa, Kansas St.
Natick, MA 01760
particular interest: quality control of contractor submissions of textile dyeing and printing products

Britt Nordby, past student member
Hüls America Inc.
Turner Place, P. O. Box 365
Piscataway, NJ 08855
particular interest: instrumentation: particularly calibration verification, repeatability & reproducibility

Robert Ozols
Ethan Allen Interiors, Inc.
2733 Altadena Lake Drive
Birmingham, AL 35243
particular interest: development of pigment/color matching, mixing & specifying systems

Yue Qiao
IBM Co./PBB1-003L
6300 Diagonal Highway
Boulder, CO 80301
particular interest: color modeling

Therese Rabel
Therese Rabel Art Consultant
38 Brandywine Court
Wyomissing, PA 19610
particular interest: forecasting actually almost all phases interest me - I would like to find more educational opportunities to learn

Payman Rahimi
Novo Industries Inc.
7611 Railhead lane
Houston, TX 77086
particular interest: being more familiar with color theories, getting more consistent, reproducible results in color tests and color readings, research & development on color matching techniques and survey on pigments in the market

Gerald Royce
Estée Lauder Company
350 South Service Road
Melville, NY 11747
particular interest: color matching, color formulation, color control

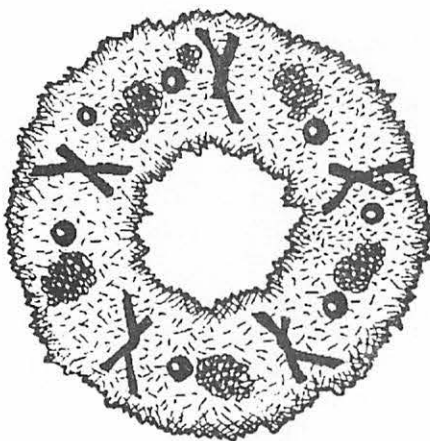
Jeffrey L. Throckmorton
Consultant For the Tintometer Ltd.
1905 Brookhaven Circle
Atlanta, GA 30319
particular interest: developing new color instrument for the chemical processing industries

Alain Tremeau
Institut D'Ingenierie De La Vision - Site GIAT Industries
3 rue Javelin Pagnon - BP 505
42007 Saint - Etienne Cedex 1, France
particular interest: Measurements and testing

Di-Yuan Tzeng
Graduate Student
Rochester Institute of Technology
Center for Imaging Science
317 Kimball Dr.
Rochester, NY 14623
particular interest: color modeling, colorimetry

Michael Vaughn
Eastman Kodak Co.
400 Denise Rd.
Rochester, NY 14612
particular interest: maintain understanding of what is being done in the industry relative to color.

Perry Williams
 TN Electroplating
 164 Viar Rd. Box 233
 Ripley, TN 38063
 Particular interest: color matching &
 color measurement
 Shuang Wu
 Schepen Eye Research Institute
 20 Staniford St.
 Boston, MA 02114
 particular interest: color monitors, color
 reproduction in printing industry



RIT ANNOUNCES UPCOMING SHORT COURSES

Rochester Institute of Technology, Munsell Color Science Laboratory announces its annual courses on color; **"Principles of Industrial Color Measurement,"** June 16 -18, 1997, **"Industrial Instrumental Color Matching,"** June 19, 1997, and **"Foundations of Color Management Systems,"** June 23 -27, 1997.

••"Principles of Industrial Color Measurement," will focus on the applications of colorimetry for industrial color control. Key topics include spectrophotometry; principles, geometry selection and methods of characterizing precision and accuracy; CIE colorimetry; derivation of colorimetry from tristimulus values through CIELAB and tolerancing: CMC & CIE94 equations, deriving visual tolerances from historical, pass/fail data additional topics include color vision; color order systems and metamerism. This course is taught by Drs. R. Berns and M. Fairchild of RIT.

••"Industrial Color Matching" will be taught by Ralph Stanzola, co-founder of Applied Color Systems and current President of Industrial Color Technology. His topics will include colorant identification via spectral analysis, additive functions of

reflectance (K/S) and transmittance (Beer- Lambert), semi-quantitative production batch adjustments, computer colorant formulation, methods to get the most out of your system, and a problem solving session.

••"Foundations of Color Management Systems," is a five-day intensive course to teach the underlying principles for implementing color management. The course is divided into three sections: colorimetry, modeling imaging peripherals for device profiles, and color appearance models. Participants can participate in any or all of the sections.

For further information on any of the courses, contact: Colleen M. Desimone, Munsell Color Science Laboratory, Rochester Institute of Technology, Chester F. Carlson Center for Imaging Science, 54 Lomb Memorial Drive, Rochester, NY 14623-5604; Telephone (716) 475-7189, FAX (716) 475-5988; e-mail cmd9553@rit.edu. Visit our WebSite at:

<http://www.cis.rit.edu/research/mcsl/courses.html>.



SOCIETY OF PLASTIC ENGINEERS Color and Appearance Division



The CAD/SPE held their 1996 RETEC with the St. Louis Section at the Hyatt Hotel at Union Station on October 1-2, 1996. Record attendance of over 530 people registered for the meeting. The following papers were presented: **"The Science of Color Demystified"**, Ron Harris, M.A. Hanna Color; **"A Systematic Study of Mass Coloration of Polyamide Resins"**, Lynn Bente/Doug Koerner, Keystone; **"Implementation of a New Method for Correction of Edge Loss Measurement Error"**, Dave Spooner, rhoMetric Association; **"Internet for the Polymer Chemist"**, Shiela Loggins, Ciba Additives; **"A New Concept in Color Matching"**, Jacques Gombert, SPC Software; **"Color Change and Weathering"**, Bryan Lewis, Americhem; **"Development of Easy to Disperse Quinacridone Pigments"**, Frank Lavieri, Hoechst-Celanese Corp.; **"Comparison of Metering Methods"**, Leo Roel, Movacolor; **"Extrusion Die Plate-out, A Possible Cause"**, Dwight Holtzen, DuPont; **"Coloration of Non-woven Polypropylene"**, Brain West, Techmer PM; **"Quantitative Characteristics of Powder Mixing Processes"**, Dr. Fernando Muzzio, Rutgers University; **"Perylene Based Pigments & Dyes for Plastics"**, Steve Goldstein, BASF; **"Pigmented Fiber Stabilization"**, Ranga Srinivagan, Ciba Additives; **"Color - You Gotta See It to Believe It!"**, Bob Charvat & Terra Community College; **"Effects of Accelerated Exposure Conditions on the Photo Degradation of BPA Based PC/ABS Blends"**, Dr. James P. Barren, James E. Pickett and Richard J. Oliver, all with GE Plastics; **"Color - You Gotta See It to Believe It! - Part II"**, Bob Charvat & Terra Community College; **"Light & Weather Fastness of Colored Plastics"**, Romesh Kumar / Heidi Menzel, Hoechst-Celanese Corp.; **"A Study of the Effects of Black Pigment**

Selection on Weatherable R-PVC, Gil Burkhart, *Cerdec*; **"Bridging the Disparity Between Visual Color Differences and Numerical Differences at Customers"**, Ed Tucker, *DSM Engineering*; The final presentation was a panel discussion on "Chlorine: The Next Element to Disappear From the Periodic Table".

Awards were presented to Professor Frederick T. Simon for SPE Fellow of the Society. This is only the second Fellow the CAD Division has honored in its history. Bill Longley received the SPE Honored Service Member Award.

Best paper awards were presented for the 1995 RETEC to David Mowery, MacBeth (A Complete Solution for Computer Formulation), Roger Reinicker, Ciba (A Unique, Highly Transparent, Yellow Pigment for Polyolefin Fibers and Robert Swain, Chroma), (Toxic Use Reduction Approach to Formulation). Best paper award was presented for the 1996 Antec to Bruce Mulholland, Hoechst Celanese, "Color Concerns in Polymer and Blends". This is Bruce's fourth consecutive award for Best Paper at ANTEC.

Best student paper award for 1996 was presented to Ramin Reshadat and Sina Sagad of the University of Toronto (In-Line Color Monitoring of Pigmented Polyolefins During Extrusion I: Assessment (and) II: Color Prediction).

The 1997 ANTEC will be in Toronto April 29 - May 2.

The 1997 RETEC will be a joint meeting with the ISCC at the Marriott Inner Harbor in Baltimore. The ISCC Annual Meeting will be September 14, 15 and CAD RETEC September 16, 17. Any company wishing to sponsor coffee breaks or lunch for the ISCC or CAD, please contact Gary E. Beebe at (215)-785-8497.

Gary E. Beebe

VISION RESEARCH

The following communication has been received from Hans Strasburg in Germany about two back-to-back upcoming issues of "Spatial Vision" which deal with the use of electronic displays in computer-based vision research. Some members of the ISCC community might be interested in obtaining copies of these two publications, Vol. 10/4 and 11/1 of Spatial Vision. The publisher will extend a discount if enough people want to purchase these single issues from any given organization.

The table of contents listed below is as of November 7, 1996

Special Issue on "The Use of Display Systems in Visual Psychophysics", Guest Editor: Hans Strasburger

- "High refresh rate and oculomotor adaptation facilitate reading from video displays" Montegut, M.J. and B. Bridgeman and J. Sykes.

- "P31 Phosphor persistence at photopic mean luminance level" Wolf, W. and H. Deubel

- "A pixel-resolution video swicher for eye contingent display changes" Van Diepen, P. M. J.

- "Characteristics of Sony multiscan 17se Trinitron color graphics display" Bohnsack, D. L., L.C. Diller, T. Yeh, J.W. Jenness and J. B. Troy.

- "Simple integrative method for presenting head-contingent motion-parallax and disparity cues on Intel-processor-based PCs" Szatmary, I. Hadain and B. Julesz.

- "Phosphor persistence of oscilloscopic displays: a comparison of four phosphors" Di Lollo, V., A.E. Seiffert, G. Burchett, R. Rabeeh, and T.A. Ruman.

- "Making things move; the options for computer-based displays" Cox, M.J.

- "A real time method for generating coherent motion display" Intriligator, J.

- "Accurate display timing for PCs" Goten, A. And M. Mackeben

- "Colour bit-stealing to enhance

the luminance resolution of digital displays on a single pixel basis" Tyler C.W.

- "Selective stimulation of colour mechanisms: An empirical perspective." J.J. Kulikowski, D.J. McKeefy and A.G. A.G. Robson

- "Raster-scan cathode ray tubes for vision research (limits of resolution is space, time and intensity, and some solutions)," Bach M., T. Meigen and H. Strasburger.

- "Calibrating screens for continuous colour displays", Shepherd, A.J.

- "A display controller for very brief image presentations", Finley, G.

- "Dots & Pixels, a C++ library for the display of random dot pattern", Verlinde, R.

- "VSApc: A C++ package for quantitative extracellular single-cell electrophysiology". Bohnsack, D.L. and J.B. Troy.

- "XPIP 2.2: x portable interface package", Leshner, G.W.

- "The Psychophysics Toolbox", Brainard, D.H.

- "The Video Toolbox software for visual psychophysics: Transforming numbers into movies", Pelli, D.G.

- "Pixel Independence. Measuring spatial interactions on a CRT display". Pelli, D. G.

- "Psychophysica: Mathematica Notebooks for Psychophysical Experiments", Watson, A. B. and J.A. Solomon

- "Gabor-wavelet decomposition based filtering of gray-level images for object recognition experiments", Fiser, J and I, King

- "PXL: A library for psychological experiments on IBM-PC type computers", Intel, H.

- "The use of VisionWorks in visual psychophysics research", Swift, D., S. Panish and B. Hippensteel

- "YAAP: Yet another adaptive procedure", Treutwein, B.

- "The Morphonome image psychophysics software and calibrator for Macintosh systems", Tyler, C.W., and B. McBride

- "d'plus: A program to calculate

(Continued→)

accuracy and bias measures from detection and discrimination data", Macmillan, N. A. And C.D. Creelman

••"A note on luminance calibration of raster-scan cathode ray tube: Temporal resolution, ripple and accuracy", Bach, M.

••"Bootstrap estimates of the statistical accuracy of thresholds from psychometric functions", Foster, D.H. and W.F. Bischof.

••"Efficient estimation of sensory thresholds with ML-PEST", Harvey L.O.Jr.

••"FORPXL (A Fortran interface to PXL, the psychological experiments

library", Jittner, M. And H. Strasburger

••"R-Contrast. Rapid measurement of recognition contrast thresholds", Strasburger, H.

••"Programs for diagnosis and therapy of visual field deficits in vision rehabilitation", Kaste, E., Strasburger, H., and B. Sabel

••"Visuelle Welts: A Windows program for demonstrating visual-perception phenomena", Hibner, R.

••"Anti-aliasing and dithering in the Freiburg Visual Acuity Test", Bach, M.

Dr. Joann Taylor

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email:joannt@teleport.com

NEWS FROM THE GRUPO ARGENTINO DEL COLOR (GAC)

In September 1996, half of the members of the Executive Committee of the Argentine Colour Group was renewed by elections. The new Committee members are:

President: Jose Caivano

Secretary: Antonio Alvarez

Treasurer: Liliana Garcia Ferre

Members: Cristina Manmanganiello

Juan Luis Ferrari

Salvador Melita

Diana Varela

Patricia Doria

Mauricio Rinaldi

Silvio Roldan

There is an e-mail address, where the people interested may ask to receive the Newsletter of the GAC (Boletín Informativo, in Spanish) in electronic format. Just send the message "Subscribe Boletín GAC" to <postmast@semvis.fadu.uba.ar>

A TRIVIA QUESTION

How many Williamsburg Conferences have been held by the ISCC? Send your guess to Ellen Carter by U. S. Mail or e-mail. The answer and more information on the upcoming Williamsburg Conference will appear in the next issue of ISCC News.

Ellen Carter
ISCC President
(703) 527-6003

COLOR MARKETING GROUP

HUES YOU'LL CHOOSE IN 1997

COLOR
MARKETING
GROUP



THE
ASSOCIATION
FOR
INTERNATIONAL
COLOR
DIRECTIONS

ALEXANDRIA, VA. - Consumers won't have to wait much longer to know what's hot and what's not for manufactured products in 1997. The colors forecast by Color Marketing Group (CMG) back in 1995 as expected "best Sellers" for 1997 are becoming evident in a wide variety of consumer products, as manufactured debut their 1997 product lines and colors.

CMG Consumer Color Directions™ Co-chair Michelle Lamb, Marketing Directions, Inc., Minneapolis, MN., says that we are seeing the expression of major color trends forecast by CMG for 1997. "We're definitely seeing the influence of browns, especially in the mid-range of browns touching red, and certainly the influence of red overall.

Rebecca Lee, CMG, Consumer Colors Current™ Co-chair from Quarry Tile, Spokane, WA., adds, "The 1997 palette also reflects a trend toward blackened colors that provide additional accents that work well with established colors and bring a sophistication that people want.

Both further agree on additional trends for 1997, including very strong influences from metallic, veiled colors, matte yet reflective surfaces and special finishes, which were forecast for 1997. Also, there will be an influx of "active brights" •• **Gypsy Orange, Magenta Madness, Lime Fizz, Bourbon Blue and Mardi Green** •• which can dominate in action/reaction, communications and fashion, but will play an accent role in home furnishings.

According to Color Marketing Group, look for the following colors on your favorite consumer products for 1997.

Flamin' Fuschia •• From the 1996 Consumer Colors Directions palette, this color has found its home as the new "mega magenta."

Lemonade •• A bright, acidic yellow with a green cast that catches your eye.

Butter •• A softer yellow with a green cast that satisfies the need for a more neutral yellow.

Day Lily •• A bright, stronger yellow-orange with a sun-washed personality.

New Penny •• Represents an orange-based metallic, with the feeling of copper.

Longhorn •• Shows the movement of brown to red, emulating the richness of cherry wood.

Parakeet •• A vibrant, yellow-green offering excitement to the fashion and action/recreation industries.

Botanical •• This warm, vegetable-dye green continues to emphasize the yellowing of the palette.

Electric Slide •• Another zip for fashion and action/recreation, this is the evolution of the forecast color Mediterraneo, a bright, fun and aquatic blue.

Blue Tune •• A luxurious, high-end and versatile, deep navy that stands on its own.

Pearl Blue •• An icy, soft gray-blue, good for a wide variety of industries.

Dallas Dusk •• Shows the new purple direction toward a grayed sophistication of lilac.

Rhino •• A deep, blue-gray neutral, darkened for a rich effect.

Texas Gold •• Pans out to the new, green-cast gold metallic.

As for the Blackened Colors, which will be appearing on automobiles, in home interiors, fashion, communications and other industries, look for these in 1997:

Prairie Olive •• The continuing influence of yellow on green looks new when it's dark.

Sabine •• It's deep, it's blue, it's green. Teal with a heavy dose of black.

Cabernet •• A best-selling, deep plum touched by brown that's as rich and smooth as its name.

Black Iris •• This deep, violet-tinged black plays a neutral role, providing a new personality to an on-going basic.

Plum Black •• Raisin with eggplant undertones, Plum Black reflects both depth and warmth.

Color marketing Group, founded in 1962 and based in Alexandria, VA., is an international, non-profit association of 1500 Color Designers. CMG members forecast Color Directions™ one to three

THE SOCIETY FOR IMAGING SCIENCE AND TECHNOLOGY (IS&T)

IS&T'S 50TH ANNUAL CONFERENCE - ANNOUNCEMENT AND CALL FOR PAPERS



IS&T will hold its 50th Annual Conference on May 18-23, 1997 at the Hyatt Regency Hotel in Cambridge, Massachusetts. This conference offers the opportunity for speakers to present state-of-the-art work and for attendees to gain insight into recent advances in imaging science and technology. The General Co-chairs, Mary McCann and John McCann have announced that the technical program will feature tracks covering specific topics of interest in imaging science and technology as outlined in the Proposed Technical Program.

- Silver Halide Technology
- Silver and Silicon Imaging
- Hybrid Imaging System

- Image Permanence
- Digital Printing Technology
- Imaging Materials and Media
- 3-D and Stereolithography
- Coating and Substrate Technologies for Imaging Systems
- Digital Photography
- Image Acquisition and Processing

We invite original contributions related to imaging science and technology as outlined above. Papers should be authoritative and complete in regard to advancing the state of knowledge in the subject matter and be accompanied by a well-prepared 20 minute presentation or an appropriate poster presentation. Authors will be invited to submit papers of merit to one of the Society's peer-reviewed technical journals. The conference language is in English.

If you wish to present a paper, please send a brief abstract (150-250 words) along with your bibliographical sketch, complete mailing and e-mail address; phone and fax numbers to: **50th Annual Conference, 7003 Kilworth Lane, Springfield, VA 22151; Fax: 703/642-9094; E-Mail: info@imaging.org; or submit your paper via IS&T's homepage at <http://www.imaging.org.meetings/50annual.html>. The deadline for submission is November 15, 1996. Please indicate your preference for poster or oral presentation format and your preferred session assignment.**

In recognition of the 50th anniversary celebration the conference will also feature events to recount our scientific history and predict our technological future. Both introductory level and advanced tutorials will also be offered. The conference also will include a limited table top exhibits. Contact Brad Burris, H.W. Sands Corp. for more information on exhibiting at 561/743-8090; Fax: 561/743-4088; E-mail: hwsands@mcimail.com.

For further information or receive the First Announcement and Call for Papers for meeting please contact, Kim Graziano, IS&T, 7003 Kilworth Lane, Springfield, VA 22151. Tel: (703) 642-9090; Fax: (703) 642-9094;

e-mail: info@imaging.org

Visit our homepage at <http://www.imaging.org>,

The Society for Imaging Science & Technology is an international non-profit society whose goal is to keep members aware of the latest scientific and technological developments in the field of imaging through conferences, journals and other publications.

IESNA NEWS

IESNA NEW YORK, SEPT. 25, 1996...The International Illumination Design Award (IIDA) committee of the Illuminating Engineering Society of North America (IESNA) announced the recipient of the 1996 IIDAs, comprising the Edwing F. Guth Memorial Awards, Paul Waterbury Awards for Outdoor Lighting, the Aileen Page Cutler Memorial Awards, and the Awards for Efficiency in Lighting for Commercial Buildings, sponsored by the Electric Power Research Institute. This year marked the twenty-second anniversary of the IIDA program, which has served the lighting industry by recognizing and honoring those who create pace-setting lighting designs and providing lighting education by example.

The 1996 awards were presented at the IIDA luncheon of the IESNA Annual Conference, held August 4 - 7, 1996 in Cleveland, Ohio. The IIDA program is one of the most important and visible programs of the IESNA. It recognizes the fruition of the work of the members of the IESNA and culminates the Society's research, development and education. Projects receive Special Citations, Awards of Excellence and distinction that emphasize both efficiency and aesthetics in lighting, while setting quality standards for the entire lighting industry.

The IIDA program is open to all professionals in the lighting community, without limitations as to professional affiliations.

The recipients of the 1996 IIDA program follows:

EDWIN F. GUTH MEMORIAL AWARD SPECIAL CITATION

The Ford Centre for the Performing Arts

Designer: Suzanne Powadiuk

Company: Suzanne Powadiuk Designs

Owner: Livet Inc.

Logan Museum of Anthropology

Designer: Peter Saylor

Company: Dagit-Saylor Architects

Designer: William Leeman

Company: Lightly Expressed

Owner: Beloit College

Cox Outpatient Center

Designer: Kevin Kerwin

Company: The Michael Fox Architects, Inc.

Designer: Danial Oakley

Company: Heideman + Associates, Inc.

Owner: Cox Health Systems

Edwin F. Guth Memorial Award of Excellent

Concord Mall Renovation

Designer: Alfred Borden IV, Julie Panassow

Company: The Lighting Practice

Owner: Urban Retail Properties Company

Pennsylvania Convention Center Trainshed

Designer: Lee Waldron

Company: Grenald Waldron Associates

Owner: City of Philadelphia, Pennsylvania Convention Authority

The "American Queen" Steamboat Interiors

Designer: Ronald Kurtz, Randy Burkett, Katherine Abernathy

Company: Randy Burkett Lighting Design

Owner: Delta Queen Steamboat Company

St. Paul Ramsey Pediatric Unit

Designer: Greg Lecker, Don Fairbanks, Guy Herr

Company: Randy Burkett Lighting

Owner: Health Partners/St. Paul Ramsey Medical Center

Charlotte Convention Center Public Concourse

Designer: Hayden McKay

Company: Hayden McKay Lighting Design

Owner: The New Charlotte Convention Center

The Neurosciences Institute Scientific Auditorium

Designer: Robert Fagnant

Company: Randall Lamb Associates

Owner: The Neurosciences Institute

California Center for the Arts, Escondido

Designer: Buzz Yudell, John Ruble, Neal Matsuno, Renzo Zechetto, Tina Beebe

Company: Moore Ruble Yudell Architects and Planners
Owner: Escondido Community Development Commission

The Double A. Restaurant

Designer: Celeste Gainey
Company: Gotham Light & Power
Designer: Wayne Schlock, Fernando Bracer, Cheryl Brantner
Company: Brantner Tower Design Associates
Owner: Andrew Altchek

Miller Commercial at Providence

Designer: Mary Peyton
Company: Mary Peyton/Lighting Consultant
Designer: Paul Mann
Company: The Lauck Group
Owner: Miller Commercial Realty

Edwin F. Guth Memorial Award

Hotel Kempinski
Design: Francis Krahe, Keith Kosiba, Elaine O'Neill
Company: Francis Krahe & Associates, Inc.
Owner: Flughafen Munchen GmbH

Paul Waterbury Award for Outdoor Lighting Special Citation

World Trade Center, Exterior Lighting
Designer: Daniel Edenbaum, Raymond Grenald
Company: Grenald Waldron Associates
Owner: Maryland Port Administration, State of Maryland

Paul Waterbury Award for Outdoor Lighting Award of Excellence

Night Illumination Scene of Byodo-In and Ujigama-Jinja in Kyoto
Designer: Satoshi Uchihara
Company: Uchihara Creative Lighting Design, Inc.
Owner: Byodo-In

Paul Waterbury Award for Outdoor Lighting Award of Distinction

Somewhere Over the Rainbow
Designer: Steve Vaughn, Seth Jackson, Lee Buckalew, Zeb Cochran
Company: Technical Productions, Inc.
Owner: Ringling Brothers and Barnum & Bailey Combined Shows, Inc.

The IIDA program is administered by the IESNA through its IIDA Committee, with the help of regional and section IIDA chairpersons and judges.

The IIDA Program continues to be highly respected in the lighting industry. The next IIDA program will be during the 1997 IESNA Annual Conference, August 17-20 Seattle WA. Committee applications and forms for project entry may be obtained in LD+A or from the IESNA office, 120 Wall Street, 17th floor, New York, NY 10005-4001. Or any IESNA office at (212) 248-5000, ext. 117.

The IESNA is the recognized authority in illumination. For more than 85 years its mission has been to promote good lighting practice and provide information to the lighting community for the benefit of society.

BOOK REVIEW

In a round about way I was informed about the following book, "COLOURSCAPE" by Michael Lancaster. It is published by Academy Edition.

Michael Lancaster is an architect and a color consultant. He has lectured extensively on the use of color. Henry Ford is believed to say: "I am willing to give people any color automobile they want as long as it is black." As every one knows, we are going through a color revolution. Look at the colors of products that are being offered. Michael Lancaster seems to know this, identifies this confusion and is trying to teach people "how to" choose color and appreciate color harmony. The following is a list of table of contents in this book:

Preface
 Introduction
 The Purpose of Colour
 The Evolution of Revolution
 The Nature of Colour
 Colour Perception
 In Search of Harmony
 Impressions and Expressions
 Colour Effects
 Colour and Space
 Colour and Place
 Colour Control
 Colour Planning
 Colour Strategies
 Colour Choices
 High Colour
 Future Colour
 Appendix: Colour Guidelines
 Notes
 Glossary
 Bibliography
 Index

COLOURSPACE is paperback, ISBN 1 85490 451 5
 246 x 225 mm, and 128 pages.

FRED BILLMEYER REPORTS ON ANNUAL USNC/CIE MEETING

The United States National Committee of the CIE (International Commission on Illumination) held its 1996 annual meeting in Albany, New York, October 26-28, 1996. Because the plans for the meeting were delayed, attendance was unusually low. About half of those present were the staff and students of the Lighting Research Center at Rensselaer Polytechnic Institute. In consequence, the meeting placed heavier than normal emphasis on general purpose lighting. And those coming from outside were able to enjoy the last of the region's fall foliage display as well as the amenities of the Desmond Hotel, one of the finest in the New York State capital region.

After Saturday evening meetings of the USNC Technical Council and Executive Committee, the technical program for this meeting took up the entire day on Sunday, with six papers and a closing panel discussion. After opening remarks by USNC vice president Terry McGowan (GE Lighting), the first technical paper was "Damage to Museum Objects Due to Light Exposure," presented by Prof. Christopher Cuttle of the Rensselaer Lighting Research Center.

Cuttle described his topic as a problem of the interaction of light and matter involving very complex chemistry and physics. Early studies had attempted to rely on "damage factors" proportional to the wave number (inverse of the wavelength) and thus to the photon energy. This did not work well, as different materials, such as paper and artists' materials, behaved quite differently to the same exposure. A period of data gathering followed. The present conclusions suggest that no particular wavelength region is much better or worse than any other across the spectrum. A good

objective for the museum is to provide illumination satisfying the viewers with the least amount of energy absorbed by the exposed object. (This paper has been published in "Lighting Research and Technology," vol. 28, No. 1, 1996.)

Prof. Alan Lewis, USNC President and Dean of the College of Technology, Ferris State University, spoke next on "Signal Light Standards and Sunglass Standards—The Making of a Dilemma." He described the problem as a serious auto accident that occurred when a driver wearing sunglasses completely failed to see a warning sign consisting of words spelled out with amber light emitting diodes (LEDs). Both the sunglasses and the LEDs met the appropriate color specifications, which were limited to chromaticity and luminance. Neither of the associations responsible for these specifications (which trace back to the CIE signal light standards) was aware of the other group, and both were confident that their product could not be at fault. What had happened was the following: The LEDs emit light in a very narrow wavelength region, about 570-610 nm. The sunglasses were made of what is called in the trade a "notch" filter, that is, a neutral colored glass with a sharp absorption band at about 565-605 nm. Thus the light emitted by the diodes was effectively absorbed before it got to the driver's eye. Neither specification said anything about this spectral behavior. The speaker noted that when the consensus standard system fails, as it did here, legislation is often the remedy selected, and this is almost always an expensive solution.

The next paper was "Research Towards a Mesopic Lumen," presented by Prof. Mark Rea, Director of the RPI LRC. He recalled that the lumen, the unit of light, comes in several varieties depending of the light level and what part of the retina it falls on. Consequently, there are several luminous efficiency functions describing how the effectiveness of light varies with the wavelength. The most familiar of these describes cone vision in the central fovea of the eye, at rather high intensities, called phototropic

levels. It was standardized by the CIE in 1964. In between photopic and scotopic intensities, and outside the fovea, is a middle region called mesopic, where both cones and rods contribute in amounts that vary with the illumination level. No one has yet formulated the series of luminous efficiency functions that are needed to describe the mesopic region, and that is the objective of Rea's research. He says it is still in progress with a long way to go, but early results are encouraging.

The following paper was directed to members of the USNC, who have voting privileges on new standards for colorimetry and related topics proposed by the CIE. It was presented by Philip Wychorski, USNC, Standards chairman (Eastman Kodak): "Overview of the CIE Standards." There is a lot of activity in this field, as the CIE begins for the first time to assume an active role as a standards-writing organization. All the documents of CIE colorimetry have only been recommendations, not standards, until very recently.

This reporter was unable to hear the remaining papers and panel discussion that completed this session. I thank Ellen Carter for sharing her notes with me, but mention these largely non-color-related topics only briefly. Mr. Rolf Bergman (GE Lighting) reviewed new technology discussed at the "Light Source VIII" conference. Most of this technology dealt with aspects of light sources other than their color. Prof. Cuttle then spoke again, on the subject of "Cubic Illumination." This is a technique for studying the distribution of illumination on an object by replacing the object with a cube having a photocell on each of its six faces. Vector analysis of the resulting six signals allows easy calculation of important lighting parameters.

The panel discussion closing this technical session posed questions about the role of the USNC and of the CIE in technical aspects of color and lighting: Should the USNC develop an agenda in the form of a prioritized set of actions? Would an inventory of centers of US lighting excellence be useful? How can

(Continued→)

the USNC encourage research? How can such research best be financed? Panelists included the USNC officers mentioned above, Jack Hsia, CIE President (NIST), Tom Lemmons, USNC publications chairman, and Norbert Johnson, director of CIE Division 2 on Physical Measurement of Light and Radiation (3M).

These are tough questions to answer, and there were no outstanding conclusions drawn as far as this reporter can see. Interestingly, the ISCC, and particularly its Interest Groups, was mentioned several times as a model on which the structure of the USNC might be based in the future. The real problem seems to be finding out more about the CIE's agenda; basing the USNC's on it, acknowledging that our interests lie mainly in Division 1, Vision and Color, and Division 2; Selling the agenda to US industry as useful to it, especially as many of the results in the form of CIE and CIE/ISO standards are getting written into laws; and figuring out how to finance the whole thing. One final recognized need was to find out more about how financing works.

The second morning of the meeting was devoted to reports from Division representatives and committees. Our representative in Division 1, Paula Alessi (Eastman Kodak), had supplied a lengthy written report, which was excerpted by McGowan. It did not seem much different from the report published in ISCC News No. 360, March/April 1996, pages 6-13. Norbert Johnson then gave some highlights of activity in Division 2. The most active technical committees at this time are those concerned with retroreflection, fluorescence, reformulation of standard illuminants A and D65, LED measurements, photometry using detectors as transfer standards, and geometric tolerances for colorimetry. In other divisions, a revision of the document on colors of signal lights was balloted recently and work on the fifth revision of the International Lighting Vocabulary was begun. In the US, this will be followed closely by ASTM Subcommittee on terminology of the Appearance Committee, under the

leadership of John Setchell (Eastman Kodak).

The Standards Committee reported that a proposed new CIE standard on Colorimetric Illuminants is now being circulated for comments prior to balloting. The Publications Committee provided a list of recent CIE publications; Those relating to color include No. 122 on the relationship between digital and colorimetric data for computer-controlled CRT displays; No. X010, the proceedings of CIE Symposium '96 on Colour Standards for Image Technology; and S003, Spatial Distribution of Daylight – CIE standard overcast sky and clear sky. Further information on all CIE publications can be obtained from the CIE Publications Office, c/o TLA Lighting Consultants, 7 Pond Street, Salem MA 01970-4819

Fred Billmeyer, Jr.

USNC/CIE: WHAT IS IT? HOW DOES IT OPERATE?

What is CIE? CIE is the abbreviation for the International Commission on Illumination taken from its name in French, Commission Internationale de l'Eclairage. More important than the name is what the CIE does. CIE is an organization devoted to international cooperation and exchange of information among 35 member countries on all matters relating to the science and art of lighting—illumination engineering, radiometry, photometry, and colorimetry. USNC is the abbreviation of United States National Committee. Each national committee of the CIE serves as the channel for information going to and coming from CIE.

Many of the ISCC members are familiar with CIE standard observers, CIE standard illuminants D65, C, etc., CIE color computations using chromaticity coordinates, CIE color difference computations using CIE 1976 $L^*a^*b^*$ or $L^*u^*v^*$. But many are

uninformed about how the CIE operates. The Central Bureau of the CIE is located in Vienna, Austria. It has a full-time secretary and a small staff. One of its important functions is the publication of CIE documents. CIE has an elected board of Administration composed of eight officers serving four year terms. The executive committee consists of the president and one person appointed by each of the 35 member countries. The technical work of the CIE is organized into seven divisions, each with its own objectives: Division 1, Vision and Color; Division 2, Physical Measurement of Light and Radiation; Division 3, Interior Environment and Lighting Design; Division 4, Lighting and Signaling for Transport; Division 5, Exterior and Other Lighting Applications; Division 6, Photobiology and Photochemistry; and Division 7, General aspects of Lighting. Each division is organized into Technical Committees that are given specific assignments to be completed within each quadrennial period. Membership in the USNC is open to anyone desiring to support the USNC and willing to participate in its activities.

The Secretary of USNC/CIE is Jonathan E. Hardis, and information can be obtained from him at; (301) 975-2373.

Harry K. Hammond III



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

CALENDAR

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

Harry K. Hammond, III, Hammond Consulting Services
9801 E. Bexhill Rd, Kensington, MD 20815
Phone/Fax: (301) 942-4446

Or

John Peterson, 8509 Imperial Drive
Laurel, MD 20708
Phone: (301) 725-7764

1997

ASTM COMMITTEE D-1 ON PAINT

Jan. 26 - 29
Fort Lauderdale, FL
Information: Scott Orthey
Phone: (610) 832-9717
Fax: (610) 832-9555

ASTM COMMITTEE E-12 ON APPEARANCE

Jan. 26 - 29
Fort Lauderdale, Florida
Information: Bode Buckley
Phone: (610) 832-9740
Fax: (610) 832-9555

IS&T / SPIE

Feb. 9 - 14
Electronic Imaging: Science and Technology
San Jose Convention Center
San Jose, CA
Information: IS&T Conference Manager
7003 Kilworth Lane
Springfield, VA 22151
Phone: (703) 642-9090
Fax: (703) 642-9094
email: info@imaging.org
internet: <http://www.imaging.org>

INTERNATIONAL CONFERENCE VISUAL SCALES

Photometric and Colorimetric Aspects

March 24-26

National Physical Laboratory Teddington
Middlesex, UK TW11 OLV

Information: Dr. Julie Taylor

Phone: 011-44-81-943-6539

Fax: 011-44-81-943-6283

email: jafw@newton.npl.co.uk

TAGA ANNUAL CONFERENCE

May 4 - 7

Technical Association of the Graphic Arts Annual
Technical Conference

Montreal or Quebec City, Canada

Information: Karen Lawrence

Phone: (716) 475-7470

SID 97

May 12 - 16

Boston, MA

Information: Lauren Kinsey, SID

1526 Brookhollow Drive

Suite 82

Santa Ana, CA 92705

Phone: (714) 545-1526

Fax: (714) 545-1547

email: socforinfodisplay@mcimail.com

IS&T 50th ANNUAL CONFERENCE

May 18 - 23

Hyatt Regency Cambridge Hotel
Cambridge, MA

Information: IS&T Conference Manager

7003 Kilworth Lane

Springfield, VA 22151

Phone: (703) 642-9090

Fax: (703) 642-9094

email: info@imaging.org

internet: <http://www.imaging.org>

COLOUR 97

May 26 - 30

8th AIC Quadrennial Meeting

Colour CE97 Executive Committee Meeting

May 25

Kyoto International Conference Hall (KICH)

Kyoto, Japan

Information: Paula Alessi

Eastman Kodak CO.

Phone: (716) 477-7673

Fax: (716) 722-1116

email: pjalessi@kodak.com

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IISCC ANNUAL MEETING

Sep. 14 - 17

Inter-Society Color Council Annual Meeting with Color
and Appearance Division of Society of Plastics
Engineers

Marriot Inner Harbor Hotel
Baltimore, MD

Information: Gary Beebe
Phone: (215) 785-8497

HFES 41ST ANNUAL MEETING

Sept. 22-26

Human Factors and Ergonomic Society
Albuquerque, AZ

Info: HFES P.O. Box 1369, Santa Monica, CA 90406-1369

Phone: (310) 394-1811

Fax: (310) 394-2410

email: 72133.147@compuserve.com

WWW Site: [http:// HFES.org](http://HFES.org)**AATCC CONFERENCE AND EXHIBITION**

Sep. 28 - Oct. 1

American Association of Textile Chemists and Colorists
Marriot Marquis

Atlanta, GA

Information: AATCC

Phone: (919) 549-8141

OSA ANNUAL MEETING

Oct. 11 - 19

Optical Society of America
Long Beach Convention Center
Long Beach, CA

Information: OSA

Phone: (202) 223-0920

Fax: (202) 416-6100

email: mfg@osa.org**IS&T 13th INTERNATIONAL CONGRESS**

Nov. 2 - 7

Advances In Non-Impact Printing Technologies
Sheraton Seattle Hotel
Seattle, WA

Information: IS&T Conference Manager
7003 Kilworth Lane

Springfield, VA 22151

Phone: (703) 642-9090

Fax: (703) 642-9094

email: info@imaging.orginternet: <http://www.imaging.org>**INTERNATIONAL COATINGS EXPO (ICE)**

Georgia World Conference Center

Nov. 3-5

Information: Federation of Societies for
Coatings Technology

Phone: (610) 940-6777

Fax: (610) 940 0292

IS&T / SID's FIFTH COLOR IMAGING CONFERENCE

Nov. 16 - 19

Transforms and Transportability of Color
Radisson Resort

Scottsdale, AZ

Information: IS&T Conference Manager

7003 Kilworth Lane

Springfield, VA 22151

Phone: (703) 642-9090

Fax: (703) 642-9094

email: info@imaging.orginternet: <http://www.imaging.org>**1998****TAGA ANNUAL CONFERENCE**

May 3 - 6

Technical Association of the Graphic Arts Annual
Technical Conference

Chicago, IL

Information: Karen Lawrence

Phone: (716) 475-7470

SID 98

May 17 - 22

Anaheim, CA

Information: Lauren Kinsey

SID

1526 Brookhollow Drive

Suite 82

Santa Ana, CA 92705

Phone: (714) 545-1526

Fax: (714) 545-1547

email: socforinfodisplay@mcimail.com**ASTM COMMITTEE E-12 ON APPEARANCE**

Jun. 16 - 18

Saint Louis, MO

Information: Bode Buckley

Phone: (610) 832-9740

Fax: (610) 832-9555

(Continued→)

AATCC CONFERENCE AND EXHIBITION

Sept. 22-25

American Association of Textile Chemists and Colorists

Convention Center

Philadelphia, PA

Information: AATCC

Phone: (919) 549-8141

OSA ANNUAL MEETING

Oct. 3 - 9

Baltimore Convention Center

Baltimore, MD

Information: OSA

Phone: (202) 223-0920

Fax: (202) 416-6100

email: mfg@osa.org

1999**TAGA ANNUAL CONFERENCE**

May 2 - 5

Technical Association of the Graphic Arts Annual

Technical Conference

Philadelphia, PA

Information: Karen Lawrence

Phone: (716) 475-7470

SID 99

May

California

Information: Lauren Kinsey

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1526 Brookhollow Drive

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Santa Ana, CA 92705

Phone: (714) 545-1526

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Oct. 12 - 15

American Association of Textile Chemists and Colorists

Convention Center

Charlotte, NC

Information: AATCC

Phone: (919) 549-8141

2000**SID 2000**

May

Toronto, Ontario

Canada

Information: Lauren Kinsey

SID

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Phone: (714) 545-1526

Fax: (714) 545-1547

email: socforinfodisplay@mcimail.com

AATCC CONFERENCE AND EXHIBITION

Oct. 1-4

American Association of Textile Chemists and Colorists

Marriott World Center

Orlando, FL

Information: AATCC

Phone: (919) 549-8141

2001**AATCC CONFERENCE AND EXHIBITION**

Oct. 7-10

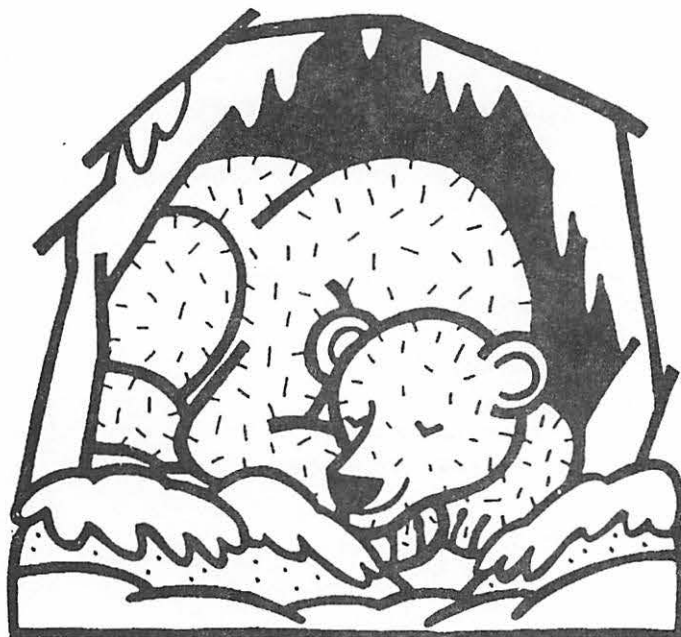
American Association of Textile Chemists and Colorists

Sheraton Hotel

Boston, MA

Information: AATCC

Phone: (919) 549-8141



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meeting reports



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