



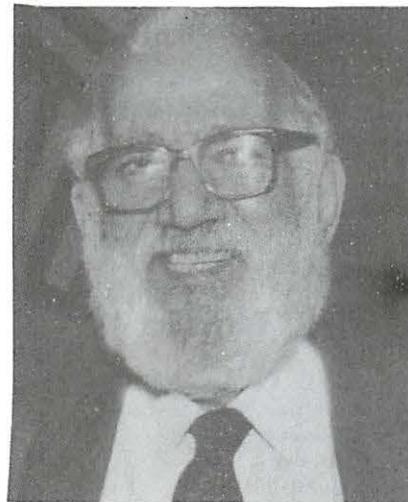
# Inter-Society Color Council News

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March/April

2001



**Max Saltzman**

April 17, 1917 - February 26, 2001

On February 26, ISCC Honorary Member, Max Saltzman passed away. Max' health had been steadily declining for the last several months and he died peacefully during the night. Max was an infamous and active member of the Society; his contributions to the ISCC were significant. From 1966 - 1968, he served on the Board of Directors. Saltzman organized the first Williamsburg Conference in 1966, the topic - instrumental color formulation. His attention to detail, his intense desire for collegial interaction, and his ability to ask insightful and probing questions defined the model for all future Williamsburg conferences. In 1986, he received the Macbeth Award for his pioneering research in dye identification of ancient textiles. To quote Ruth Johnston-Feller in her award citation (see ISCC News No. 302, July-August 1986), "His interest took him, in typical Saltzman 'back to basics' fashion, to the mountains of Peru to collect authentic examples of the dyes, and sources of those dyes, used in ancient Peruvian textiles. Fascination with historical textiles also led him to authorities and institutes of entomology in Europe, to obtain

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rare insect specimens from which the ancient red dye-stuff, Kermes, was obtained, whence he was able to 'correct the textbooks' concerning the true source of Kermes." Just last week, the nominating committee for the Godlove Award unanimously recommended to the ISCC Board of Directors that Max be awarded the Society's most prestigious award. (See Godlove Award article on page 4.)

Max received his B.S. degree in chemistry from the City College of New York in 1936. During World War II, he was in civilian service with the Chemical Warfare Service. Max used to tell the story about manufacturing fuses for hand grenades. As a member of the research department, a sampling procedure was put in place to test every 5th or 10th fuse and of course the test was destructive. They went down to the factory floor to see how the testing was going. A workman on the line saw them and came and commented, "You guys up in research must surely be smart. How did you know that every 5th fuse would be bad?" Max used to tell that story to illustrate how just using statistics did not make a difference unless you stopped and thought about what you had just calculated.

Following the war, Max joined the technical staff of Harmon Colors (later a part of Allied Chemical Corporation). From 1945 to 1961 he served in various research and development positions in the field of color pigments and color measurement. From 1961 to 1973 he held several management positions at the corporate headquarters of Allied. He retired as manager of color technology in 1973.

During the early 1960's, Max recognized the need for an academic program in color technology. Dr. Walter Bauer, a close friend of Max and Dean of the College of Science at Rensselaer Polytechnic Institute, took Max's advice and established a new research program at RPI and recruited Dr. Fred W. Billmeyer, Jr. to run the Rensselaer Color Measurement Laboratory. Max was an Adjunct Professor for most of the 20 years the Laboratory was in existence.

As is well known to most of the ISCC membership, Saltzman's and Billmeyer's interest in color education led to two editions of "Principles of Color Technology". This introductory textbook was based on their highly popular industrial short course of the same name. The book's phi-

osophy reflected Max's penchant for quality control and common sense.

In 1973, Max moved to Los Angeles and soon established a color identification laboratory in the Institute of Geophysics and Planetary Physics at the University of California at Los Angeles. Through this laboratory, he performed research on ancient dyestuffs. His interests expanded to include art conservation science, no doubt fostered by his close friendship with Robert Feller and Ruth Johnston-Feller. As a Fellow of the American Institute for Conservation of Historic and Artistic Works, he brought his practical approach to color measurement including the tremendous value of the spectral curve to a new population of scientists. In 1984, this organization honored him by asking him to present the George L. Stout Memorial Lecture, one of the most prestigious honors bestowed by this organization. During the 1990's, Max donated his extensive library to the National Gallery of Art, Washington, D.C.

Saltzman was a member of the American Chemical Society, the American Association of Textile Chemists and Colorists, the Society of Plastics Engineers, the Optical Society of America, the Society of Dyers and Colourists (U.K.), The Colour Group (Great Britain), the Dry Color Manufacturers' Association, the Los Angeles Society for Coatings Technology, the American Institute for Conservation, and the Federation of Societies for Paint Technology. In 1967, he was awarded the Federation's Armin J. Bruning Award.

On a personal note, Max reminds me of a prickly pear cactus. Large and dangerous spines abound, encircling intense purplish-red fruit. Until one becomes experienced harvesting the fruit, the probability is high of getting wounded. But the fruit is delicious, especially when added to a margarita. Over a period of years, I learned to harvest Max's knowledge about pigments, dyestuffs, quality control, and a myriad of other topics. As I rewrote the third edition of "Principles of Color Technology", Max became a household name, calling often and concerned that I would keep the book simple and

practical.

During my sabbatical at the National Gallery of Art, Washington, the phone calls came from me. As I began to learn about artist materials, I found that Max's knowledge and ability to communicate were keys to my personal learning. Have I been wounded during the 20 years I've known Max? Certainly, but nothing that a few prickly pear margaritas couldn't cure!

*Roy S. Berns  
March 1, 2001*

## **Memorial Research Fund**

In Max's memory, we are establishing a fund to support student research in art conservation science using color technology. The Saltzman family has requested that donations be directed to this fund. Checks should be made out to:

Rochester Institute of Technology:  
Saltzman Fund

and sent to: Roy Berns  
RIT Center for Imaging Science  
54 Lomb Memorial Drive  
Rochester, NY 14623-5604.

## **A Tribute to Max Saltzman...**

Among many rich memories, I will not forget Max's propensity for sending copies of all sorts of articles that he thought you'd be interested in. Usually with a brief note and his initials at the top, they remain today well distributed throughout the literature files collected by Ruth Johnston-Feller in the jobs she used to hold and by myself in the variety of subjects that I tried to cover.

Max would also supply you with samples. In his company, no, I should say- in his vicinity, one had to be most careful not to mention within ear-shot, to whomever you might be chatting with at the moment, that you were having difficulty finding a par-

ticular pigment, dye, or resin. Max prided himself in knowing where to get stuff. So, if he'd overheard your lament, the frequent result was that, within a day or two, you'd find that he'd arranged for you to receive a very generous sample of whatever it was you were looking for. Moreover, the stuff needs not to have come from his own company.

A particular instance stands out: When I was preparing to go to Florence, Italy, in 1967 to do what I could to help with the care of frescos and paintings that had been damaged during the flood of the Arno River, Ruth gave me a note from Max that contained a name of what must have been a very high official in the chemical firm of Montecatini. As I recall it was just a card with a name and phone number, but Ruth told me in no uncertain terms: "When you get there, you call that number! That comes from Max, and you use it!" Well, once I got reasonably settled, I did dial the number. Spoke to a secretary. The very next day a man impeccably dressed in a dark business suit arrived in a shiny black car driven by a chauffeur. He followed me about for well over an hour, all the while putting down in a little black book the names of solvents, resins, and adhesives that we felt were needed. At the very end of the visit, as he was about to enter the car to be driven back to Milan, he turned to me and said "By the way, who is this man, Max Saltzman?" The man obviously thought that, most assuredly, Max must be a personage of great substance and the highest respect. Well, yes, that he was. A few days later we received a very generous supply of everything on the list.

Throughout a busy and productive life, Max perhaps enjoyed most being able to introduce colleagues to the technical reports and the knowledgeable people that he felt were just the right publication or person that one "really ought to know" at some particular juncture in their career. Among the many facets his life, this thoughtful and generous encouragement, rendered largely behind the scene, accounts in no small measure for the profound influence that Max Saltzman had over so many years for so many of us who wished to learn and to understand, describe, and measure color.

*Robert L. Feller*

## **Max Saltzman to Receive The Godlove Award**

### **2001 Godlove Award Committee Report**

The 2001 Godlove Award Committee members are:  
Paula Alessi, Roy Berns, Joel Pokorny (chair),  
Arthur Shapiro, and Wade Thompson.

Nominations for the 2001 Godlove Award were solicited by an announcement in the ISCC Newsletter, by inclusion of a nomination form with the ISCC Newsletter and by an announcement on cvnet (). The Committee was charged with evaluating the candidates with the following criteria in mind: Candidates will be judged by their contribution to any field of interest related to color, whether or not it is represented by an ISCC Member-Body. The candidate's contribution may be direct, it may be in the active practical stimulation of the application of color, or it may be an outstanding dissemination of knowledge of color by writing or lecturing, based on original contributions of the nominee. Candidates need not have been active in the affairs of the ISCC, but they must be either current or former members of the ISCC. All candidates must have at least five years of experience in their particular field of color.

The committee considered three candidates. Though all have had distinguished careers in color science, it was felt that Max Saltzman's qualifications represented most closely the criteria outlined for the Award.

Max Saltzman has been active in the field of color for over 50 years. His contributions are enormous, though largely indirect. At every opportunity, Max has challenged color scientists, engineers, technologists, and artists to defend their beliefs. His purpose has not been to belittle them, but to insure that their knowledge is sound and that they have given considerable thought to their beliefs. He has thrown down the gauntlet at expert and novice with equal fervor. His goal has always been to bring a large dose of common sense to the forefront.

There can be no doubt that the book "Principles of

Color Technology” co-authored by Billmeyer and Saltzman has had a tremendous impact. Translated into German and Russian (without permission), it has been the primer for most color technologists worldwide. The book’s success is its accessibility and practicality. This was not fortuitous but by design, the book was for the common man and woman (the book is gender neutral, male and female observers depicted in the book were alternated throughout.)

To understand Max’s motives, and consequently, his contributions to the field, the final pages of the first and second editions of Principles of Color Technology should be read. It is titled “Back to Principles.” These few paragraphs summarize Max’s philosophy and in large part his motivation as a color curmudgeon. So many problems in color technology are often solved by using common sense and remembering the basics.

Max has had a dramatic impact in art conservation. He developed a novel technique of pigment identification using solution spectrophotometry that is still widely referenced. He was an active consultant for the Getty Conservation Institute and his advice was highly valued.

Max Saltzman was a scholar and an educator. He taught through example, by his book, by asking tough questions, and by his many conversations. Looking at the names of the Godlove Award recipients, it is clear that Max Saltzman’s name belongs on this list.

The Committee is unanimous in recommending Max Saltzman to be the recipient of the 2001 Godlove Award.

Respectfully submitted,  
*Joel Pokorny, Chair*  
*2001 Godlove Award Committee*



## **Request for Nominations Nickerson Service Award**

The 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:

Dr. Robert Marcus  
Datacolor International  
5 Princess Road  
Lawrenceville, NJ 08648  
609-924-2189x7323  
609-895-7438 (fax)  
*rmarcus@datacolor.co.*

Nominations must be received before April 15, 2001.



## **CIE Division Meetings**

CIE Division 2 is holding an experts symposium and tutorial session on radiometry, photometry and color of LED sources at the Gaithersburg Holiday Inn, Gaithersburg, MD on May 10, 11 & 12, 2001.

CIE Division 2 is holding it’s Annual Technical Meeting at NIST on May 16-19, 2001(location is the same as above)

CIE Division 1 is also holding its annual technical meeting prior to the ISCC/AIC meeting in Rochester, NY on June 23, 2001 at the Rochester Convention Center.



AIC Color '01  
June 24-29, 2001  
Rochester Riverside Convention Center  
Rochester, New York, USA



## Become an Exhibitionist!

The Inter-Society Color Council has the honor of hosting the 9th Congress of the International Colour Association on June 24-29, 2001. This Congress promises to be stimulating and innovative as state-of-the-art color science, technology, art, and design ideas are shared. We are expecting over 500 participants.

Now is the time to register for the conference exhibition, June 25 and 26. For registration information and other details see <http://www.iscc.org/aic2001/exhibition.shtml>.

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## AIC Hotel Information

Housing for the 9th Congress is available at special negotiated rates at the following downtown hotels all located within walking distance of the Rochester Riverside Convention Center.

Hyatt Regency	\$119/night
Four Points by Sheraton	\$101/night
Crowne Plaza	\$119/night

Contact DePrez Travel Bureau (listed on the reverse side of the enclosed registration form) ASAP for reservations and any questions you may have about the hotels.

**The AIC's hotel of preference is the Hyatt Regency.**

## AIC 9th Congress Offers Multiple Social Activities for Participants and Companions

AIC 01 will be hosting a number of exciting events for our social program. In addition to the Welcome Reception at the Rochester Institute of Technology and the gala banquet at the Rochester Convention Center, we have scheduled evening events to satisfy different types of interests.

We will sponsor an evening at Rochester's Frontier Field to enjoy a baseball game with the Rochester Red Wings. The Memorial Art Gallery will be the setting for another evening event; docents will provide gallery tours giving special attention to color. A Congress excursion to the 19th century will be held at the Genesee Country Village and Museum where we will view historic buildings and live demonstrations of crafts.

Also, each day there are planned events for the companion program to include a historic village walking and shopping tour, a historic house tour with the Landmark Society of Rochester, a winery tour, and a tour of the George Eastman House and International Museum of Photography and film.

**There has been a pre-conference tour added to the previously announced program.**

An additional Corning Museum of Glass and Finger Lakes Winery Tour will be offered on Saturday, June 23rd at 9:00 a.m.

An updated registration form has been inserted in this issue to reflect this additional social event.

# **CORM Annual Conference and Business Meeting 13 – 16 May 2001**

**Green Auditorium of the Optical Technology Division  
National Institute of Standards and Technology  
Gaithersburg, Maryland USA**

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**100 Years of Optical Radiation Standards  
for Commerce for the United States and in the  
Global Community:**

***Shrinking Uncertainties for a Shrinking World***

The 2001 Annual Conference and Business Meeting and committee meetings of the Council for Optical Radiation Measurements (CORM 2001) will be held at NIST in Gaithersburg, Maryland. This year will be the 100<sup>th</sup> anniversary of the founding of the National Institute for Standards and Technology. CORM 2001 will recognize and celebrate NIST's past and ongoing work on optical radiation measurements and standards to the benefit of commerce in the US as well as NIST's cooperation with standardizing bodies around the world. There will be several technical sessions covering: the history of NIST activities in optical radiation standards, recent developments at NIST and at other standards laboratories around the world, progress in scale realizations and transfer standards, and results from recent inter-comparisons in optical radiation measurements. The meeting will conclude with a self-guided tour through the NIST Optical Metrology Division laboratories. **The Grum Memorial Lecture will be given by Dr. Joanne C. Zwinkels of the National Research Council of Canada, Institute for National Measurement Standards.**

Immediately preceding CORM 2001 will be the 2<sup>nd</sup> *CIE Expert Symposium on LED Measurements, "Standard methods for specifying and measuring LED and LED cluster characteristics."* Immediately following CORM 2001, CIE Division 2 on the Physical Measurement of Light and Radiation will hold its annual technical meeting. Several of the Division 2 technical committees will hold status meetings. Information on the CIE meetings can be

found on the CIE Division 2 website:  
(<http://physics.nist.gov/cie2>).

As part of the celebration and to honor our visitors from CIE Division 2, CORM is sponsoring a field trip to the National Gallery of Art in Washington, DC on Sunday afternoon, May 13<sup>th</sup>. A lecture on the importance of lighting in the measurement and restoration of the appearance of paintings and a free chamber concert in the Gallery gardens are planned as parts of this outing. Reservations for this field trip are limited and are on a first come - first served basis.

**Hotel Information-**A block of reduced rate rooms will be available May 13-17, 2001 at the Holiday Inn - Gaithersburg, #2 Montgomery Village Avenue, Gaithersburg, Maryland. Single occupancy rates are \$95 per night plus tax. The Holiday Inn is located 1/2 mile off Interstate I-270, Exit 11A, on the corner of State Route 355 and Village Avenue. Complimentary transportation service is available from the Shady Grove Metro station on the Red Line out of Washington. Both Ronald Reagan Washington National and BWI airports are served by the Metro. The cut-off date for hotel reservations is May 1, 2001. Any reservations made after that date will be accepted on a space and rate availability basis only. Please call the hotel at 1-301-948-8900 or via fax at 1-301-258-1940 and ask for the "CORM 2001" conference rate when making your reservation. **Early conference registration is strongly recommended.** A discount is offered for advanced registration postmarked prior to Monday, April 3, 2001. Since there are CIE meetings just prior to and immediately after CORM 2001, many CIE delegates may choose to stay for the CORM meeting and the block of reserved rooms may be fully booked before the May cut-off date.

The CORM Sub-Committee meetings will be held in several different conference rooms in the NIST Admin. Bldg. Please check the Holiday Inn lobby or NIST Admin. Bldg lobby for sub-committee meeting information. **Transportation between the Holiday Inn and NIST will be provided.** The CORM Grum Memorial Banquet will be held at the Holiday Inn, Gaithersburg on Tuesday evening, May 15th.

**Transportation**-Baltimore-Washington Intl Airport (BWI), Distance: 35 miles (56 km) east. Approx taxi fee: \$50. Scheduled van service (Super Shuttle-Blue Van). Fare approx. \$35. Alternate van svc - Montgomery Shuttle.

Washington Dulles Intl Airport (IAD), Distance: 5 miles (8 km) north. Approx taxi fee: \$45. Scheduled van service (Super Shuttle-Blue Van) 800-258-3826 Fare approx \$35. Alternate van service - Montgomery Shuttle

Ronald Reagan Washington National Airport (DCA), Distance: 22 miles (35 km) north. Approx taxi fee: \$30. Scheduled van service (Super Shuttle-Blue Van). Fare approx \$25. Alternate van service - Montgomery Shuttle.

**Super Shuttle-Blue Van** 800-258-3826  
[www.supershuttle.com/was.htm](http://www.supershuttle.com/was.htm)  
Reservations required 24 Hrs in advance  
**Montgomery Shuttle & Van Service**  
301-881-8800  
**Atlantic Airport Shuttle** 301-699-3000  
[www.atlanticshuttle.com MC/VI](http://www.atlanticshuttle.com/MC/VI)

**Conference Coordinators**-Should you need any assistance with your registration or with any other information about CORM 2001 please do not hesitate to contact the coordinators:

Danny C. Rich, Sun Chemical Corp.  
201-933-4500, ext 1144  
201-933-5658 fax  
[RichD@sunchem.com](mailto:RichD@sunchem.com)

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319-295-4340 319-295-5624, fax  
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## Alvin O. Ramsley

Alvin Olsen Ramsley, 81, of Sherborn, MA died Friday, Feb. 9, 2001, at the Beth Israel Hospital, Boston. He was the husband of Florence (Jensen) Ramsley of Sherborn. Born in North Bergen, NJ, he was the son of the late Christopher and Martha (Lauvrak) Ramsley.

Mr. Ramsley was a cum laude graduate of the Houghton College, Houghton, NY, where he received his Bachelor of Science degree in chemistry. He received his Master of Science degree from Columbia University in inorganic chemistry. He was a retired physical chemist with the U.S. Army Soldier systems command in Natick. During his career, he received numerous awards and certificates, among them at 1982 Certificate of Achievement award "Technical Director's Gold Pin Award for Research" for his research on the development of the U.S. Army's temperate battledress, or camouflage uniform, considered a major advance in surveillance protection.

He was a member of the American Chemical Society for more than 50 years, the American Association of Textile Chemists and Colorist, the Optical Society of America and the Inter-Society Color Council. He was a veteran of World War II, serving in the U.S. Army.

Mr. Ramsley was an active member of the Pilgrim Congregational Church, Sherborn; where he served on the Board of Deacons. He was past president and secretary of the Sherborn Lions Club, a former chairman of the Sherborn Planning Board and a member of the Sherborn American Legion Post.

Besides his wife, he leaves two sons, Walter C. Ramsley of Framingham and Kenneth R. Ramsley of Ashland; three grandchildren and 11 cousins, 10 in Norway and one in Wisconsin. He was the grandfather of the late Jenny Ramsley. A memorial service was held Feb. 14th at the Pilgrim Church, Sherborn. Donations can be made to the Memorial Fund of the Pilgrim Church, Main Street, Sherborn, MA 01770; or to Houghton College, 1 Willard Ave., Houghton, NY 14744-0128.

## COLOR RESEARCH AND APPLICATION

**In This Issue, April 2001**

This issue begins and ends with items by researchers working within the International Commission on Illumination, CIE, but trying to reevaluate portions of CIE colorimetry. Color is an extremely important coding for signals, not only for traffic control when driving a car, but also for air and maritime navigational guidance, control and warning, as well as railroad signaling. As a basis for the first article, Foong C. Soon and Barry L. Cole ask whether the newly revised recommendations for signal colors designate colors that can be reliably recognized by both young and older subjects in both dark- and light-adaptation levels. Their article, "Did the CIE Get It Right? A Critical Test of the CIE Color Domains for Signal Lights," summarizes the development of the regions for the signal colors, the CIE recommendations, the observations of subjects, and discusses the possible causes of variation between observer populations.

Our next authors wondered about the effect of light level on how we see colors. This has been studied since about the 1950s, when Brown found that discrimination ellipses increased significantly in area and tended to be oriented on the tritanconfusion line when the luminance level diminished. However he looked at only 3 pairs of chromaticity coordinates at different luminance levels. In "Chromatic Discrimination in Relation to Luminance Level," A. Yebra, J. A. García, J. L. Nieves, and J. Romero report on a systematic study with 18 chromaticity coordinates at from 2 to 6 luminance levels distributed throughout the CIE chromaticity diagram.

In the last issue, we had an article on a cross-cultural color naming study. In this issue, James A. Schirillo and Adam Reeves report on color naming in a very different type of research project. The mid spectral region 500 to 530 nm is generally considered green, and appears that way when presented as a steady stimuli. However researchers have reported that when the stimuli is flashed for a brief

interval colors from yellow to blue have been reported depending on the conditions. In an attempt to study the M-cone response in isolation, the authors conducted a research project on "Color Naming of M-Cone Incremental Flashes."

Our next article is part of the body of research to develop improved color-difference metrics. In the article "Analysis of Five Sets of Color Difference Data," Rolf Kuehni describes the systematic optimization of recent color-difference data to establish the effect of various parameter changes. The purpose of this work was to determine the similarities and differences in the various data sets that could lead to further improvement in predicting average small color-difference judgments in the range from 0.5 to 15 units of difference. The analysis included adjustments of  $X$ -value, power,  $a$  factor, chroma and hue factor,  $\Delta L$ , local scale, and optimization by quadrant and sub space.

Our next author, Lewis D. Griffin takes on a very complex task of examining the "Similarity of Psychological and Physical Colour Space Shown by Symmetry Analysis." Color and brightness are perceptual qualities, which have both a psychological and a physical structure. Shape and size are aspects of both psychological and physical structures. Griffin cites the analysis of brightness as a simple case. Then increasing in complexity is the space of illuminant colors. Finally, the focus of his article is the even more complex case of reflectance colors, in particular those of Lambertian surfaces. For the body colors, data on the psychological structure was gathered from a questionnaire and a color naming system. The physical structure was determined from a contemporary model of the processes of color vision. Then the symmetry between the two structures was analyzed.

In the past I have said that the human observer is very good at judging whether two juxtaposed color samples are the same or different. It would be ideal if research could involve this type of judgment. However, for many reasons it is often not possible or reasonable to have the colors that we wish to compare placed side by side. Often we have to rely on our memory of the color. Our last research ar-

ticle of this issue examines the matching technique known as color memory matching. While some studies have been made of color memory matching, generally this has only been examined for the case of observers with normal color vision. J. Pérez-Carpinell, V. J. Camps, M. D. de Fez, and J. Castro report on "Color Memory Matching in Normal and Red-Green Anomalous Trichromat Subjects."

In the last issue, Rolf G. Kuehni described a research project determining unique hues using Munsell color chips. In this issue's Communications and Comments section, he compares the unique hues to the focal colors from the World Color Survey. While the other three unique hues have good agreement with focal colors, he found that unique green is different from focal green.

In the book review section, Kurt Nassau reviews *The Colour of Metal Compounds* by Bartecki and Burgess. Finally in the news section Michael H. Brill, chair of CIE TC1-56, has issued a challenge to research laboratories to volunteer to test the foundations of colorimetry. This is such an important issue that we hope this call will be met by more than one laboratory.

*Ellen C. Carter,  
Editor, CR&A*



## **Coloration Technology: JSDC Relaunched**

One of the oldest and most widely recognised scientific journals on colour science and technology has been relaunched for 2001 with a new title and new format. For 116 years the **Journal of the Society of Dyers and Colourists (JSDC)** has been published containing chiefly peer-reviewed papers dealing with subjects such as dyes and pigments, dyeing theory and practice, colour physics and a host of

As of this year, it will be retitled **Coloration Technology** and the first issue will be published this month. Commenting on this change, the editor of Coloration Technology Carmel McNamara said, 'The Society's decision to consolidate publication of news and feature articles in a new members' quarterly magazine has enabled us to re-establish our journal as one of the leading publications for peer-reviewed papers on colour science and technology. We felt that a change of name was necessary to reflect this.'

In addition it highlights two other recent developments. The first was the setting up of an International Editorial Panel to assess contributions and advise on journal policy. More recently we have appointed an academic editor to help us develop in a way that should be more attractive to authors of high-quality scientific papers, and hence improve the quality of the publication as a whole.'

Another recent development is an accelerated publication procedure that offers authors the opportunity of having papers published by the Society more quickly than was possible in the past.

The new academic editor is Dr. David Hinks, a graduate of the University of Leeds and currently a faculty member at the North Carolina State University (NCSSU). Dr Hinks has interests in a wide range of colour-related topics and has been a member of the International Editorial Panel since its inception. Coloration Technology is published six times a year. It contains full research papers and abstracts, together with occasional book reviews.

Inquiries regarding subscriptions are welcomed and should be sent to the offices of the Society.

Individual articles are available for purchase via the Society's website.

For more details visit: [www.sdc.org.uk](http://www.sdc.org.uk)



## How Our Eye's Lens Yellowes with Age

At the NIST Conference on Digital Cinema 2001 (11-12 Jan), I was asked whether different standard observers (and telecine storage standards) are needed according to sex and ethnicity. I responded that the most significant differences among human observers (other than dichromacy among some males, rare tetrachromacy among females, and occasional other forms of color blindness) is due to the yellowing of the lens with age. Perhaps it would be appropriate to archive digital cinema according to the color-matching functions of the target audience, and age would be the best index.

In my answer I quoted a rule for predicting the progressive effect of lens yellowing [1]: "Henry Hemmendinger has observed that the lens transmission spectrum approximates a color-correction filter that converts one blackbody spectrum to another; he notes that our world apparently grows colder by one reciprocal megakelvin each year." An explanation of Henry's statement might be helpful, so I give one here.

First, one must understand that, by interposing a filter between the eye and a scene composed of nonfluorescent objects, the effect is the same as if the filter is placed over the incident light source so as to modify its spectral power distribution.

Next, we need to characterize natural light sources. A natural light can be idealized as a black body with a particular Kelvin temperature  $T_0$ . Furthermore, the spectrum of this light can be approximated by Wien's law—i.e., the spectrum is proportional to  $\lambda^{-5} \exp(c_2/[T_0 \lambda])$ , where  $\lambda$  is wavelength and  $c_2$  is a constant [2].

Given the above spectrum of a light external to the eye, a color-correction filter (such as one made by Kodak) changes its apparent

temperature to a temperature  $T$  (which depends on  $T_0$ ) according to the rule  $1/T = 1/T_0 + 1/T_f$  (where  $T_f$  does NOT depend on  $T_0$ ). The color-correction filter has a transmittance that is exponential in  $1/\lambda$ , so it adds to a color temperature the way resistors add in parallel [3,4]. This rule is very important commercially, because a single color-correction filter transforms all black-body spectra to other black-body spectra, and hence preserves "naturalness" in a scene.

Now, suppose the age dependence of the human lens acts as a color-correction filter, and we look at lights through this lens "now" and "a year from now". The temperature of light  $T_0$  "now" is  $1/T = 1/T_0 + 1/T_f$

The temperature of the same light "a year from now" is  $1/T' = 1/T_0 + 1/T_f'$ . Here,  $T$  and  $T'$  depend on  $T_0$ , but  $T_f$  and  $T_f'$  do *not* depend on  $T_0$ . Because it is conventional to record all temperatures in millions of Kelvin degrees (called megakelvins), the inverse temperatures are in "reciprocal megakelvins."

What is the relationship of  $1/T_f'$  to  $1/T_f$ ? Henry Hemmendinger says that  $1/T_f' - 1/T_f = 1$  reciprocal megakelvin. This rule does not depend on how old you are "now" or on the temperature of the light you are looking at.

Here is a numerical example of Henry's rule. Let the perceived temperature of a light "now" be  $T = 5000K = 0.005$  megakelvins. Hence  $1/T = 200$  reciprocal megakelvins. Henry's rule says that, "a year from now", the same light will have an apparent color temperature  $1/T' = 1/T - 1/T_f + 1/T_f' = 1/T + 1$  (in reciprocal megakelvins).

Since  $1/T = 200$  reciprocal megakelvins,  $1/T' = 201$  reciprocal megakelvins, and  $T' = 4975$  Kelvins. Hence the near-solar temperature of 5000K is reduced by 25 degrees Kelvin—a modest and credible amount. Of course, due to

“parallel resistor” addition of temperatures, different black-body radiators reduce in temperatures by different amounts, but the “inverse temperatures” always increase by 1 reciprocal megakelvin.

Henry’s rule is a very significant empirical observation, based on extensive experiments and analyses. Some of the results appear in the last section of Ref. [5]. It might be useful to look at further data to see if the rule holds up.

*Michael H. Brill*

[1] M. H. Brill, Musings on Gertrude Stein and observer metamerism, *Color Res. Appl.* **25** (2000), 88-89.

[2] G. Wyszecki and W. S. Stiles, *Color Science* (2<sup>nd</sup> Ed., Wiley, 1982), pp. 12-13.

[3] H. P. Gage, Color filters for altering color temperature: pyrometer absorption and daylight glasses, *J. Opt. Soc. Am.* 1933; **23**: 46-54.

[4] C. McCamy, A nomograph for selecting light-balancing filters, *Photog. Sci. Eng.* 1959; **3**: 302-304.)

[5] P. K. Kaiser and H. Hemmendinger, The Color Rule: A device for color-vision testing, *Color Res. Appl.* **5** (1980), 65-71.



## News From Members...

On Friday, March 30th, **Color Psychology in the 21st Century** will be presented by ISCC Member, **Meg Miele**, Department of Social Science, Fashion Institute of Technology, at the office of CAUS (The Color Association of the US) from 9:00a.m. to Noon.

This workshop will be followed by a luncheon. For reservations and registration fees, contact the CAUS office at 212-947-7774.

## The Technical Association of the Graphic Arts (TAGA)

The heady days of the dot-com market free-for-all are gone, and U.S. and world markets are returning to a more realistic grounding. Whew! It was a lot of fun while it lasted, but on the other hand we don’t have to listen to hoards of near-sighted prophets proclaiming the end of the printed world.

Now, managers everywhere, including both printing executives and their customers, are no longer inclined to put their money into wild and unproven ‘e-ventures.’ Profitability and efficiency are back in vogue and this year’s TAGA Annual Conference is prepared to help you meet the challenges of change head-on!

Although Pets.com and Napster have bitten the dust, Jupiter Communications estimates that \$350 billion will be spent on Internet infrastructure over the next three years, of which 74% will be spent by companies on more pragmatic methods of integrating systems, streamlining operations, and improving relations with customers.

Check out TAGA sessions on the effect of blankets on print quality, reusable plate technologies, paper creasing in web offset printing, one fluid offset printing processes, and much more.

In addition to great technical papers, TAGA has scheduled tutorials for printers and print suppliers. If 2001 is going to be a tight year, let your competitors do the suffering. “Market hype” is out and real know-how is in...and San Diego, CA is the right place to be May 6-9, 2001.

To receive a copy of the complete TAGA 2001 Annual Conference agenda and registration information call TAGA at 716-475-7471 or end your request to *TAGAOfc@aol.com*. Check TAGA’s website at [www.taga.org](http://www.taga.org) for regular agenda updates.

*Karen Lawrence*  
TAGA

**RIT'S MUNSELL COLOR  
SCIENCE LABORATORY  
SUMMER SCHOOL OF INDUSTRIAL  
SHORT COURSES**

**JUNE 18-23, 2001**

For 2001 the MCSL will be offering a week-long summer school of industrial short courses. Participants will be able to choose from one or more (up to three) of the following two-day intensive courses.

**June 18-19**

***Principles of Color Technology***

**Roy S. Berns and Mark D. Fairchild**

This course introduces basic colorimetry through derivation of the CIE system of tristimulus values, color spaces such as CIELAB, and color difference equations such as CIE94 and CMC. It also describes instrumentation for colorimetry and the evaluation of measurement accuracy and precision. Colorimetry is used in a variety of industries including coatings, textiles, automobiles, plastics, and image reproduction. It is safe to assume that any colored product has undergone some form of colorimetric evaluation during its manufacture or use.

**June 20-21**

***Optimization Techniques for Color Reproduction*  
\*NEW COURSE**

**Noboru Ohta and Mitch R. Rosen**

High quality color imaging systems such as television, printing and photography require optimal spectral characteristics for each system component. This course introduces the use of numerical optimization for determining these characteristics. Optimization techniques currently employed in the industry are explored through interactive discussions and intensive in-class programming assignments plus one "homework."

***Vision and Psychophysics***

**Ethan D. Montag and Mark D. Fairchild**

This course provides an overview of the structure, function, and performance of the human visual system as well as providing a detailed introduction to visual psychophysics. Virtually every application of color or imaging produces an object to be viewed and evaluated by human observers. Understanding of human vision and the psycho-

physical techniques used to measure human visual performance provides significant insight into a variety of problems. Psychophysical experiments allow quantitative measurement of visual perceptions and have applications in areas such as color tolerances, image quality, algorithm evaluation, etc.

***Instrumental-Based Color Matching***

**Roy S. Berns**

Instrumental-based color matching exploits colorimetry, color physics, and computer science, resulting in systems that aid colorists in matching existing and new colors. Color mixing "laws", such as Kubelka-Munk theory for complex subtractive mixing, are used to determine colorants and their amounts in order to match a standard. This course will cover the basic concepts of color mixing for transparent and opaque materials, colorant identification, spectral matching, and colorimetric matching. Through hands-on laboratories, participants will learn the importance of the colorant database and attaining the least metameric match.

**June 22-23**

***Color Appearance Models***

**Mark D. Fairchild**

This course provides a detailed review of the CIECAM97s color appearance model as well as covering the fundamental phenomena and techniques of color appearance modeling. Color-appearance models extend basic colorimetry, as typified by CIE tristimulus values, to the prediction of color matches and color appearance across widely varying viewing conditions. Advances in open systems for electronic image reproduction have accentuated the need for accurate and efficient color appearance models to allow transformation of image data across media and viewing conditions.

***Device Profiles for Color Management***

**Roy S. Berns and Mitch R. Rosen**

Device profiles incorporate device characterization, color gamut mapping, and color appearance models. This course will focus on device characterization techniques and their implementation into an ICC-compatible device profile. Device characterization describes the relationship between a device's user controls, such as digital counts, and its spectral and colo-

rimetric output, that is, its color. Three techniques can be used to characterize a device: direct measurement and multi-dimensional interpolation, multiple-linear regression, and analytical modeling. The last two techniques will be used to characterize desktop scanners, digital cameras, computer-controlled CRT displays, and desktop printers (inkjet and electrophotographic).

**Color Reproduction, Jonathan S. Arney**

The basic principles behind the detection and reproduction of color will be modeled in terms of five generic functions in an idealized "Maxwell Color Copy System". Several color reproduction systems, including TV, color film, electrophotographic copy machines, and various hybrid systems will be examined in terms of the five generic functions (capture, processing, transmission, processing, output). The chemical and/or physical mechanisms of the components will be examined in terms of their impact on the quality of color reproduction. Specific attention will be given to different mechanisms of output, including CRT, continuous tone film, and halftone printing.

For more information: [www.cis.rit.edu/mcsl](http://www.cis.rit.edu/mcsl)



**AATCC  
Renames Their Journal**

American Association of Textile Chemists & Colorists is one of the largest textile associations in the world, with more than 7000 members. When it was founded in the twenties, American Dyestuff Reporter became the official news media for AATCC. American Dyestuff Reporter, however, was not owned by AATCC. In the sixties AATCC formed their own journal; Textile Chemists and Colorists. Last year AATCC bought American Dyestuff Reporter and for a while their journal had dual name; Textile Chemists and Colorists and American Dyestuff Reporter.

Starting 2001, the Association changed the name of the journal to "AATCC Review".

**ASTM E12.14 Experiment At  
AIC/ISCC Rochester**

**"Multidimensional Characterization of  
Appearance"**

In a prior article in the ISCC News, Mary Mcknight described the activities of one subcommittee, E12.14-Multidimensional Characterization of Appearance, ASTM Committee E12-Color and Appearance. In particular, she outlined new visual experiments and instrumental techniques currently under study which will ultimately lead to new standards for distinctness-of-image (doi) and orange peel (peel). To date, we have determined that imaging (spatial) technologies provide better correlation with visual assessment than flux (geometric) assessments. In retrospect this should be obvious since the attributes captured by the image are the same ones we see, while in the geometric case we must infer the appearance attribute(s) indirectly from change in flux as a function of angle.

The first set of experiments (visual and instrumental) were based on a generic set of black ACT Laboratories orange peel panels. The attribute steps for both "doi" and "peel" were fairly large and distinguishable. For our second set of experiments we have developed a number of new black panels where the steps in "doi" and "peel" are much tighter. We wish to determine the point at which we obtain just noticeable differences. Several members of our committee are currently working on a protocol for the new experiment.

What is most exciting about this activity is that we plan to set up a booth in the Convention Center at the June AIC/ISCC Meeting and use "volunteer" participants from the meeting and "walk throughs" at the exhibitions as subjects. In this manner, we should get some of the most critical eyes in color science. Hopefully, the endeavor will be fun for all and provide much needed data.

*Paul M. Tannenbaum  
Dupont*



## CAUS

### Ten Unmistakable Things about Japan

Editor's note: Associate Director Karyn Valino recently visited Japan. She gives her impressions in summary form below.

1. Color - for anyone who loves color, Japan is an intoxicating place to be. Not only because of the bright neon lights of the Tokyo, the architecture and natural landscape, but because of everything else in between. In Japan, socks are one of the most popular gifts to give and there is an unbelievable selection of colors and styles to choose from. Even everyday appliances such as refrigerators, vacuum cleaners and humidifiers come in a selection of colors. Who wouldn't take a little pleasure in wearing turquoise socks or using your ultra-cute pink vacuum cleaner?
2. Cell Phones - Everyone was on their cell phones, not talking on them, but sending and receiving E-mail. The phones are all light colored - white or pastel and ergonomic, not hard edged like North American cell phones. All cell phones are accessorized with little figures, bells and stickers. Animated screen savers can be downloaded off the Internet for your phone. The newest feature is a phone that has a camera in it, to send full color pictures from your phone.
3. Everything is a cartoon - Adorning everything from beverage cans to beauty products, cute cartoon characters are not just for kids in Japan. Even companies like banks use cartoons in their advertising and brochures.
4. Vending machines - As long as you've got some yen, you'll never go thirsty in Japan. There are brightly-lit vending machines selling hot & cold canned beverages on every block. The trick is figuring out what the drinks are. Also to be bought - cigarettes, ice cream bars and fresh flowers.
5. Single Front Kick Pleat Tweed Skirts - Standard uniform for girls under 30. Local shops carry racks of them. Must be worn with #6 and #7.
6. Textured Hosiery - More complex and interesting than just fishnet stockings. The hosiery department of the depatos (department stores) is always a mob scene of girls fighting for the last pairs of Calvin Klein and Anna Sui hose.
7. Knee high boots - either with a 3-inch heel or a 4-inch platform with a 3-inch heel. It is now illegal to drive in Japan wearing Platform Boots or Shoes.
8. Bicycles - the bicycle racks at the train stations are like parking lots. Hundreds and hundreds of bicycles, ridden by men in business suits and girls in their skirts and boots. Many people take a friend on the back of the bike, standing on the axle. What a civilized way to get around. Bike locks are optional.
9. Para Para dancing - An amazing phenomenon, hundreds of teens enthusiastically moving in synchronicity to dance music at night clubs. Each song has different moves - which include elaborate hand gestures but their feet remain still. This is a sight worth seeing.
10. Electronics - I found myself gazing longingly at min-disc players, stereo systems and cordless phones. Even someone like me who has no interest in electronics would be enticed by the amazing selection of color, sleek models and cool new features.

*Karyn Valino*  
Associate Director, CAUS



## What Would Music be without Color?

Until I began working at HunterLab and then the ISCC, I had never realized or even considered the effect that color has on our lives and even more so, how people take color for granted or what goes into color matching. I had never heard of metamerism or realized that colors could change appearance given the light source. I have found that there is so much more to "color" than just that beautiful, new box of Crayolas we were all introduced to at a young age. Color is everywhere around us and is universal – as is music.

I love music and it occurred to me the other day that so many songs we listen to and enjoy have a color in the title. I wondered just how many songs boasted colorful titles and how important that color was to the song.

Consider the following: The Blue Danube, Rhapsody in Blue, Blue Suede Shoes, Blue Moon, Blue Bayou; Purple Rain, Purple Haze, Purple People Eater; Red Sails in the Sunset, Roses are Red, Red River Valley, Rudolph the Red Nosed Reindeer; The Yellow Rose of Texas, Itsy Bitsy Teenie Weenie Yellow Polka Dot Bikini, Tie a Yellow Ribbon Round the Ole Oak Tree, Yellow Submarine; It's Not Easy Being Green, Greenfields, Wearin' of the Green, Greensleeves, Green Tambourine; Orange Colored Sky, Orange Krush, Orange Blossom Special; Jeanie with the Light Brown Hair, Little Brown Jug, Don't it Make My Brown Eyes Blue; A Whiter Shade of Pale, White Light, White Heat, White Christmas; Black Water, Paint It Black, That Old Black Magic and Black and Blue, Bye Bye Blackbird; and the list just goes on and on and on.

How did the composers decide on the color they chose? Can you imagine how memorable Rudolph would be if his nose wasn't red? Or if the Pink Panther wasn't Pink? Would that Purple People Eater have been such a catchy tune? Or would Kermit have been happier being brown? If you really have a lot of time on your hands you could de-

vised word games like: The Pink Panther lived in The Red River Valley and played the Green Tambourine while dancing in his Blue Suede Shoes and singing The Yellow Rose of Texas.

A cursory search on a popular website to see how many times specific colors appeared in song titles (knowing "blue" would be at the top, given the music genre by the same name) came up with the following results:

Blue 32000	Black 9340	Red 7577
White 5642	Brown 5071	Green 4744
Yellow 1539	Orange 982	Purple 857

Music without color – it paints a drab picture. Personally, I think I will keep looking for the Rainbow Connection and perhaps I'll Always Be Chasing Rainbows. In the meantime, try to follow The Doobie Brothers' advice and "Listen to the Music" - with a colorful ear, of course!

*Cynthia J. Sturke*  
*ISCC Admin. Asst.*

(By the way, rainbow hits on the website: 2384)

### Detroit Colour Council Announces 2001 Meetings

March 22      Troy Marriott  
Speaker:      Bill Porter  
"History of Automotive Design"

May              Southfield, MI  
"Computer Color Rendering"

Sept. 11      MSU Management  
Education Center  
Troy, MI  
Panel discussion on "Weathering"

Nov.              Centerpoint Marriott  
Pontiac, MI  
Speaker:      George Moon  
"2001 Auto Show Review"

## **CORM** **Fourth Oxford Conference on** **Spectrometry**

The Fourth Oxford Conference on Spectrometry will be held from **June 9th to June 13th, 2002** at Davidson College, Davidson, NC. The previous three Oxford Conferences have all been highly successful, both in their scientific content, with the Third Oxford Conference in Egham, UK drawing a large group of scientists from throughout the world. This conference, as with the previous three, will have published proceedings. Davidson College is conveniently located less than 1/2 hour from Charlotte Intl Airport. Papers are invited in the field of spectrometry, color science, appearance measurements, and related fields. Proposals should be submitted to either Dr. Art Springsteen or Miss Teresa Goodman.

### **Program and Session Chairs:**

**Day 1- Spectrophotometry Advances in Instrumentation-** Dr. Jim Nobbs (Leeds University) **Colorimetry of Fluorescent Materials-** David M. Burns (3M Company) **Standards and Intercomparisons-** Dr. Joanne Zwinkle (NRC)

**Day 2- Materials and Methodology Appearance Measurement-** Dr. Michael Pointer (NPL) **Standards and Techniques-** Richard Harold (Avian Group USA/BYK-Gardner)

**Day 3- Radiometry and Colorimetry of Displays Standards and Methodology-** Dr. Steve Brown (NIST) **Measurement Techniques-** Dr. Julie Taylor (NPL)

For further information on the conference, including presentations and poster papers, please contact the following organizers:

Dr. Art Springsteen (Chairman)  
c/o Avian Technologies  
P.O. Box 1076 New London, NH 03257 USA  
603-526-4479 603-526-2087(fax)  
[arts@aviantechnologies.com](mailto:arts@aviantechnologies.com)

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011-44-020-8943 6863  
011-44-020-894 36458 (fax)  
[teresagoodman@npl.co.uk](mailto:teresagoodman@npl.co.uk)

## **Reprints and** **Testing Manual Availability**

Reprints of the 20-page chapter on **Color and Light** from ASTM Paint and Coatings Testing manual are again available from ISCC. This fundamental material, written a few years ago by Billmeyer and Hammond, is still very timely and quite worthwhile reviewing by anyone working in the fields of color evaluation or standardization. Copies of the entire 78-chapter, 900 page Testing Manual are available from ISCC Sustaining Member, BYK-Gardner USA, Columbia, MD or from ASTM, West Conshohocken, PA.

Harry K. Hammond III  
Co-author, Color and Light

### **PUBLICATIONS AVAILABLE FROM ISCC**

#### **"Color and Light"**

by Fred W. Billmeyer Jr., & Harry K. Hammond, III.  
**ASTM Paint Manual**, Chapter 40, 23 pages  
\$5 each or 20 copies \$50.00

Authorized reprint from:  
ASTM Manual 17, Copyright 1996  
American Society for Testing and Materials  
100 Bar Harbor Dr., W. Conshohocken, PA 19428

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#### **"Demystifying Color"**

by Bob Chung  
11 pages (color)  
\$5 each or 20 copies/\$50.00

Discusses and explains ten myths about color.

**Either publication can be ordered by sending a check or money order (if pre-paid, s&h will be included) to:**

Inter-Society Color Council  
Cynthia J. Sturke, Admin. Asst.  
11491 Sunset Hills Road  
Reston, VA 20190



## CALENDAR



Please send any information on Member-Body and other organization meetings involving color and appearance functions to:

Cynthia Sturke  
 ISCC Office  
 11491 Sunset Hills Rd., Reston, VA 20190  
 703-318-0263 tel 703-318-0514 fax  
 email: [iscc@compuserve.com](mailto:iscc@compuserve.com) website: <http://www.iscc.org>

## 2001

- March 22** DCC Meeting, "History of Automotive Design, Speaker: Bill Porter  
 Troy Marriott, Troy, MI Contact: Jim Keiser, [james.r.keiser@dupont.usa.com](mailto:james.r.keiser@dupont.usa.com)
- April 1-3** Color Marketing Group Spring International Conference, Orlando, FL  
 703-329-8500 [cmg@colormarketing.org](mailto:cmg@colormarketing.org)
- April 23-27** ASPRS Annual Conference, St. Louis, MO, 301-493-0290;  
 fax: 301-493-0208 [www.asprs.org](http://www.asprs.org).
- May 6-9** TAGA Annual Technical Conference, San Diego, CA. Info: 716-475-7470;  
 fax: 716-475-2250, [TAGAOfc@aol.com](mailto:TAGAOfc@aol.com); website: <http://www.taga.org>
- May 10-12** CIE Experts Symposium on Light Emitting Diodes, Holiday Inn, Gaithersburg, MD  
 Contact: Y. Ohno, NIST, [Ohno@nist.gov](mailto:Ohno@nist.gov)
- May 13-16** CORM 2001: 100 Years of Optical Radiation Standards for Commerce for the United States and in the Global Community - Shrinking Uncertainties for a Shrinking World  
 NIST, Gaithersburg, MD. Contact: Danny Rich, Sun Chemical Inc. (GPI),  
 201-933-4500 x1144 or [RichD@sunchem.com](mailto:RichD@sunchem.com)
- May 17-20** 2001 CIE Division 2 Annual Meetings, NIST, Gaithersburg, MD, contact: Y. Ohno,  
 NIST, [Ohno@nist.gov](mailto:Ohno@nist.gov)
- June 18-23** RIT's Munsell Color Science Lab Summer School of Industrial Short Courses  
[www.cis.rit.edu/mcsl](http://www.cis.rit.edu/mcsl)
- June 19-22** ASTM E12 Committee on Color Appearance, Four Points by Sheraton, Rochester, NY  
 Contact: Bode Hennegan 510-832-9500 [bhennegan@astm.org](mailto:bhennegan@astm.org)
- June 24-29** ISCC/AIC Mtg, Rochester, NY; Paula J. Alessi, 716-477-7673; Fax: 716-722-1116  
[paula.alessi@kodak.com](mailto:paula.alessi@kodak.com)
- Sept 11** DCC, Panel Discussion on "Weathering", MSU Management Edu. Ctr., Troy, MI  
 Contact: Jim Keiser, [james.r.keiser@dupont.usa.com](mailto:james.r.keiser@dupont.usa.com)

**Sept 23-25** CAD/SPE RETEC 2001 "Hot Color - - -Cool Plastics", Marriott Resort Hotel, Marco Island, Florida. Chair: Gary Beebe, A. Schulman, 330-239-3059  
gary\_beebe@aschulman.com

**Oct 21-24** AATCC International Conference and Exhibition, Palmetto Expo Center, Greenville, SC, Contact: Shirley Clifton 919-549-8141 919-549-8933 fax

**Nov. 5-9** IS&T/SID 8th Color Imaging Conf., Color Science, Systems & Applications, Scottsdale, AZ. Fax: 703-642-9094, info@imaging.org

## 2002

**Feb 23-25** ISCC Williamsburg Conference, Solutions for Industrial Color Problems, Chair: Ralph Stanziola, rascolor@juno.com

**April 20-23** ISCC/Detroit Colour Council Joint Meeting, Troy, MI Chair: Jim Keiser, james.r.keiser@usa.dupont.com

**Oct 1-4** AATCC International Conference and Exhibition, Charlotte Convention Ctr, Charlotte, NC Contact: Shirley Clifton 919-549-8141 919-549-8933 fax

**June 9-13** Fourth Oxford Conference on Spectrometry, Davidson College, Davidson, N.C. Info: Art Springsteen arts@aviantechnologies.com Teresa Goodman tmg@npl.co.uk

## Jobs Wanted!

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, fax, email)
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 editor are responsible for any errors.
6. You must advise us in writing when you have obtained employment.

Contact the ISCC News Editor, Prof. Gultekin (Tek) Celikiz for more information. celikizg@aol.com

Issue #390

March/April 2001

**Editor:** Prof. Gultekin (Tek) Celikiz  
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celikizg@aol.com

**Please note: Next issue deadline for material submission is April 1st.**

**All submissions must be in English.**

## Advertising Policy

The ISCC advertising policy for the Inter-Society Color Council News is as follows Pre-paid color-related advertising will be accepted thirty days in advance of the publishing date. The rates are:

\$ 100	business card-size ad
\$ 250	1/4 page ad
\$ 500	1/2 page ad
\$1,000	full page ad

Artwork must be publisher ready and will be returned within 30 days after publication. The publishers reserve the right to determine the acceptability of the advertising. A 20% discount is offered for a yearly contract. Contact: Tek Celikiz, Editor or Cynthia Sturke, ISCC Office Mgr.

