

Inter-Society Color Council *News*

IN THIS ISSUE

MORE ANNUAL REPORTS:

AATCC
APA
DCC
DCMA
SMPTE

UCLA SHORT COURSE ANNOUNCEMENT

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MORE ANNUAL REPORTS

AMERICAN ASSOCIATION OF TEXTILE CHEMISTS AND COLORISTS (AATCC)

AATCC COMMITTEE RA36, COLOR MEASUREMENT: RICHARD HAROLD, CHAIRMAN

Committee RA36 met three times during 1986: in February, May and November. The annual Color Measurement Workshop was conducted at the AATCC Technical Center, Research Triangle Park, in October, and consisted of lectures, discussions and laboratory sessions on the topic of color measurement in the textile industry.

Three items were submitted to committee letter ballot. The first of these, AATCC Method 110-1979, "Reflectance, Blue and Whiteness of Bleached Fabric," resulted in one negative vote regarding the Procedure's title. The Method will be revised accordingly and re-submitted for committee letter ballot. The proposed new AATCC Evaluation Procedure for "Standard Depth Scales for Depth Determination" was also subcommittee to committee letter ballot, resulting in two negative votes which were editorial in nature. These changes will be written into the revised method. Finally, AATCC Evaluation Procedure 1 "Gray Scale for Color Change: was submitted for committee letter ballot, and resulted in affirmative votes including editorial comments. The comments have been incorporated into the Procedure text.

AATCC Test Method 153-1978, "Color Measurement of Textiles: Instrumental" is under study. Committee members are considering different recommendations regarding weighting factors for use in tristimulus calculations. This issue will be discussed during 1987.

The Color Measurement Workshop is scheduled for September 23-24, 1987.

The slate of delegates to the Inter-Society Color Council was updated to consist of Harold, Connelly, Sweeny, Gore, Jay, and Laidlaw.

Submitted by Ann Campbell Laidlaw, Secretary, RA-36

AMERICAN PSYCHOLOGICAL ASSOCIATION (APA):

The following bibliography represents recent publication in the area of color vision by psychologists. It is hoped that these references might be useful for those interested in the contributions of psychology to research in color science.

Arend, L., & Reeves, A. (1986). **Simultaneous Color Constancy.** *Journal of the Optical Society of America A*, 3, 1743-1751.

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Cicerone, C. M., Volbrecht, V. J., Connelly, S. K., & Werner, J.S. (1986) **Perception of blackness.** *Journal of the Optical Society of America A*, 3, 432-436.

Coletta, N.J., & Adams, A.J. (1986), **Adaptation of a color-opponent mechanism increases parafoveal sensitivity to luminance flicker.** *Vision Research*, 26, 1241-1248.

DeValois, R. L., Webster, M.A., DeValois, K.K., & Lingfelmach, B. (1986), **Temporal properties of brightness and color induction.** *Vision Research*, 26, 887-897.

D'Zmura, M., Lennie, P., & Maloney, L. T. (1986), **Mechanisms of color constancy.** *Journal of the Optical Society of America A*, 3, 1662-1672.

Eisner, A. (1986), **Multiple components in photopic dark adaptation.** *Journal of the Optical Society of America A*, 3, 665-666.

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tial frequency. *Journal of the Optical Society of America A*, 3, 916-920.

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Houck, M.R., & Hoffman, J.E. (1987), **Conjunction of color and form without attention: Evidence from an orientation-contingent color after effect.** *Journal of Experimental Psychology: Human Perception and Performance*, 1986, 12, 186-199.

Kaiser, P.K. & Ayama, M. (1985), **Just noticeable inhomogeneity criterion for determining wavelength discrimination functions.** *Vision Research*, 25, 1327-1330.

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Lindsey, D.T., Pokorny, J. & Smith, V.C. (1986), **Phase-dependent sensitivity to heterochromatic flicker.** *Journal of the Optical Society of America A*, 3, 921-927.

Laura, S. M., Merry, D. F., & Jacobson, A. R. (1986), **The effects of set size on color matching using CRT displays.** *Human Factors*, 28, 49-61.

Maloney, L.T., & Wandell, B. A. (1986), **Color Constancy: A method for recovering surface spectral reflectance.** *Journal of the Optical Society of America A*, 3, 29-33.

Miyoshi, A., Kaiser, P. K., & Nakatsue, T. (1985), **Additivity of red chromatic valence.** *Vision Research*, 25, 1885-1891.

Neff, D. L., & Green, D. M. (1987), **Masking produced by spectral uncertainty with multicomponent maskers.** *Perception and Psychophysics*, 41, 409-415.

Piantanida, T. P. (1985), **Temporal modulation sensitivity of the blue mechanism: Measurements made with extraretinal chromatic adaptation.** *Vision Research*, 25, 1439-1444.

Skowbo, D., & Michaud, L. (1985), **Individual differences in McCullough effects: A study of twins.** *Perception and Psychophysics*, 38, 208-210.

Stefurak, D. L., & Boynton, R. M. (1986), **Independence of memory for categorically different colors and shapes.** *Perception and Psychophysics*, 39, 164-178.

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Wandell, B.A. (1985), **Color measurement and discrimination.** *Journal of the Optical Society of America A*, 2, 62-71.

Young, R. A. (1986), **Principal-component analysis of macaque lateral geniculate nucleus chromatic data.** *Journal of the Optical Society of America A*, 3, 1735-1742.

Zaidi, Q. (1986), **Adaptation and color matching.** *Vision Research*, 26, 1925-1938.

Edward J. Rinalducci

DETROIT COLOR COUNCIL (DCC)

The DCC met four times in the '86-'87 season. Education was the theme in September as two college educators and one industry program leader formed a panel and discussed various approaches to training people in color technology. In November another industry panel examined the status of natural and artificial weathering of automotive colored plastics, coatings and textiles. The March speaker was a designer who explored the application of color and design in nature to industrial designing. The year was highlighted in May by a joint symposium with the Canadian Society for Color at which six invited speakers discussed all aspects of automotive color design at an all-day session with 325 registrants.

The DCC spearheaded issuing of SAE Recommended Practice J1545, "Instrumental Color Difference Measurement for Exterior Finishes, Textiles and Colored Trim."

Four program meetings are planned for the '87-'88 year. President for 1987 is Robert Schneider of Ferro Corporation; Vice-president is James Keiser of DuPont Coatings.

W.V. Longley, Del. Chairman

DRY COLOR MANUFACTURERS' ASSOCIATION (DCMA)

The DCMA is an industry trade association representing small, medium and large pigment color manufacturers throughout the United States and Canada, accounting for approximately 95% of the production of color pigments in this country. Foreign pigment manufacturers with sales in the United States and Canada and suppliers of intermediates to the pigments industry are also members of the Association.

DCMA has continued to make itself available to the ISCC and its members in areas where it can be of help concerning color pigment and the color pigments industry.

J. Lawrence Robinson, Executive Vice President DCMA

SOCIETY OF MOTION PICTURE AND TELEVISION ENGINEERS (SMPTE)

"Today's Technology – Tomorrow's Reality" was the theme of the Society's 128th Technical Conference and Equipment Exhibit held at the Javits Convention Center in New York City from October 24-29, 1986. Of the 113 papers presented during the technical sessions, color was the subject of many:

The Stability of Kodak Professional Motion Picture Film Bases

FICA – An Inexpensive Method for Preservation and Long-Term Storage of Color Films

A New Digital Color Video Negative Analyzer for Motion-Picture Film

Modern Method for Producing Tints and Tones in Monochrome Films

High-Efficiency Film Projection with Curved Screens

An Original Solution for the Antialiasing in Video Graphics and Its Implementation on Thomson's Minipaint

Criteria for the Evaluation of Three-Dimensional Graphic Systems

Visual Effects: Creating the Impossible

FuturVision 360 Motion-Picture Exhibition System

Lighting for the TV Camera – A Matter of Balance

A New Eastman Color Negative Film

New Fujicolor Intermediate Film

A Digital Color Effects System

An Innovative Luminaire That Simplifies Shooting in Fluorescent-Lit Locations

Camera Lens and Light Source Filtering Recommendations for Application in Fluorescent and High-Intensity Discharge Lighting Situations

Development of an Eye-Movement Analyzer and Its Application to the Study of Quantitative Evaluation of Psychological Effects Caused by HDTV Displays

There are two significant SMPTE groups addressing color problems. A Study Group of the Working Group on High-Definition Television (HDTV) Electronic Production will design and define the color specifications for HDTV electronic production that will be acceptable for all types of display technology – CRT, projection CRT, laser projection, plasma display, LC Display, etc. The goal is colorimetrically "future proof" origination specifications. The principal color issue or problem is in the domain of color measurement and specification, i.e., there are inadequate standards of color measurement for pulsed and nonpulsed displays. Participation is multidisciplinary as it includes broadcasters, equipment manufacturers, and program producers.

A working group of the Television Committee is establishing specifications for a professional studio picture monitor by defining the radiometric energy of the phosphor set, correlated color temperature, and luminance level of the white point, test targets and metrology, setup procedures, and procedures, and controlled viewing or surround specifications.

Anyone interested in participating should contact Sherwin H. Becker, Director of Engineering, SMPTE, 595 West Hartsdale Avenue, White Plains, NY 10607.

The Society presented a number of awards in recognition of outstanding achievements:

The 1985 Journal Award for motion pictures was presented to W. Tuckerman Biays, Aquacolor Pictures, for his article "Aquacolor Underwater Cinematography: Breaking the Available Light and Color Barriers Underwater."

For his outstanding contribution to motion-picture and television technology, Roland J. Zavada, Eastman Kodak Co., was awarded the Agfa-Gevaert Gold Medal for his advancement of the Interface between motion-picture and television imaging systems.

John L. Baptista, MGM Laboratories Inc., was the recipient of the Herbert T. Kalmus Gold Medal Award in recognition of his significant contributions to the development of the Eastman Color Print-II Film Process System.

The following is a list of papers on color published in the SMPTE Journal during 1986:

Acker, D.E., **Color-Correction Techniques – Analog and Digital**, March, 287-294.

Daily, R. T., **Computer Graphics: New Emphasis on Image Quality**, June, 645-648.

Holoch & Myer, **Improved PAL Using a Combination of NTSC, SECAM, and PAL**, July, 707-712.

Strolle, C.H., **Cooperative Processing for Improved NTSC Chrominance/Luminance Separation**, August, 782-789.

Orsburn, M.L., **Scene-by-Scene Color Correction: The Next Generation**, August, 790-795.

Leiner, H.R., **Digital Medical Image Storage on VHS Cassette**, August, 805-810.

Powell, S.J., and Reinking, F.R., **Eastman Color High-Speed Negative Film 7292**, September, 870-873.

Ghazey, M., **Painting in a Composite Frame Buffer**, October, 998-1003.

Watney, J.P., **Picture-Quality Criteria, Error Statistics, and Error Correction for the D-1 Format DVTR**, December, 1222-1229.

Yamada, M. and Fukuda, T., **Quantitative Evaluation of Eye Movements as Judged by Sight-Line Displacements**, December, 1230-1242.

Roland J. Zavada, Chairman, SMPTE Delegation

PHOTOMETRY AND COLORIMETRY FOR INFORMATION DISPLAYS

When: November 9-13, 1987

Where: G-33 East, UCLA Extension Bldg.

Fee: \$1195, includes a lab kit and the textbook

OVERVIEW

The course provides comprehensive coverage of photometry and colorimetry as it applies to self-luminous and illuminated displays and controls. Basic concepts of electromagnetic radiation and the visible spectrum, as well as the international agreements relating photometry and colorimetry to spectroradiometry are discussed, along with the appropriate units and

metrics. A thorough review of color theory and characterization, including the basic color balance experiment, the 1931 CIE color space, and on up to CIELUV space is given. The visual and psychophysical aspects of color and visible radiation are reviewed and classroom demonstrations utilize modern micro-processor-controlled spectroradiometers. Participants have an opportunity to perform photometric measurements and color balancing experiments in evening laboratory sessions. The technical aspects of the spectroradiometers are discussed in detail with diagrams on microprocessing capability, detector characteristics, optics, and theory of operation and limitations. (Twenty percent of class time is devoted to laboratory demonstrations and experiments. A kit of laboratory materials providing test charts, color tables, gray shade scales, etc., is included in the course fee.

**COORDINATOR AND LECTURER:
LAWRENCE E. TANNAS, JR., MSEE**

Displays consultant, Tannas Electronics, Orange, California.

Mr. Tannas is an information displays authority with prior experience as a manager at Aerojet Electrosystems Company. He lectures internationally, holds several patents, has authored numerous technical papers, has invented electronic display systems and devices, and edited the book, *Flat-Panel Displays and CRTs* (Van Nostrand Reinhold, 1985). He is a fellow and vice president of the Society for Information Display (SID); senior member of IEEE; member of USNC/CIE, ISCC and program chairman of the 1988 ISCC meeting; member of AIAA, SPIE, Human Factors Society, American Optical Society, and others. He received the NASA Certificate of Citation for contribution in displays. For *technical* information about the course, call M. Lawrence E. Tannas, Jr. at (714) 633-7874. For *registration* information call the Short Course Program Office at (213) 825-3344.



CALENDAR

1988

SOCIETY OF PHOTOGRAPHIC SCIENTISTS AND ENGINEERS, Jan. 10-15

International Symposium & Exposition on Electronic Imaging Devices & Systems, SPIE OE-LAZE Conference, Los Angeles Hilton, Los Angeles, California. Information: Pam Forness, (703) 642-9090.

ISCC DIRECTOR'S MEETING, January 22-23.

Holiday Inn Surfside, Clearwater, Florida (followed by ASTM meeting)

ASTM COMMITTEES D-1 ON PAINT & E-12 ON APPEARANCE, Jan. 24-27

Holiday Inn Surfside, Clearwater Beach, Florida. Information: Robert Morgan, (215) 299-5505.

PITTSBURGH CONFERENCE AND EXPO ON ANALYTICAL CHEMISTRY AND APPLIED SPECTROSCOPY, Feb. 22-26.

New Orleans Convention Center, New Orleans, Louisiana. Information: John P. Auses (412) 795-7667.

SYMPOSIUM ON PHOTOFINISHING TECHNOLOGY, Feb. 25-26

Congress Hotel, Chicago, Illinois. Information: Pam Forness, (703) 642-9090.

SAE 1988, INTERNATIONAL CONGRESS & EXPO, Feb. 29-Mar. 3

Engineering Society for Advanced Mobility, Land, Sea, Air & Space, Cobo Hall, Detroit, Michigan. Information: John Rodman, (412) 776-4841.

TAPPI 88, INTERNATIONAL PULP & PAPER MEETING & EXHIBIT, Feb. 29-Mar. 3

Georgia World Congress Center, Atlanta, Georgia. Information: (404) 446-1400.

AMERICAN SOCIETY FOR PHOTOGRAMMETRY & REMOTE SENSING, ANNUAL CONVENTION, Mar. 13-18

St. Louis Convention Center, St. Louis, Missouri. Information: Mary Buit, (703) 534-6617.

4th INTERNATIONAL CONGRESS & EXHIBIT ON ADVANCES IN NON-IMPACT PRINTING TECHNOLOGY, Mar. 20-25

Fairmont Hotel, New Orleans, Louisiana. Information: Pam Forness, (703) 642-9090.

ASTM COMMITTEE D-20 ON PLASTICS, Mar. 21-24

Sheraton Hotel, Boston, Massachusetts. Information: Robert Morgan, (215) 299-5505.

QUALITY EXPO TIME, Apr. 12-14

O'Hare Expo Center, Chicago, Illinois. Information: Steven Bernstein, (312) 299-3131.

ISCC DIRECTOR'S MEETING, May 6-7.

Sheraton Inner Harbor Hotel, Baltimore, Maryland.

ISCC ANNUAL MEETING, May 8-10

Sheraton Inner Harbor Hotel, Baltimore, Maryland. Information: Therese Commerford, (617) 651-5469.

ASTM COMMITTEE E-12 ON APPEARANCE, May 11-12

Sheraton Inner Harbor Hotel, Baltimore, Maryland. Information: Robert Morgan, (215) 299-5505.

SPSE 41st ANNUAL CONFERENCE, May 22-27

Hyatt Regency Hotel, Crystal City, Arlington, Virginia. Information: Pam Forness, (703) 642-9090.

SOCIETY FOR INFORMATION DISPLAY, May 23-27

International Symposium, Seminar and Exhibition, Disneyland Hotel, Anaheim, California. Information: (213) 305-1502 or (212) 620-3388.

AMERICAN CHEMICAL SOCIETY, June 5-10

195th Spring National Meeting and Third Chemical Congress of North America, Toronto, Canada. Information: (202) 872-4398.

INSTITUTE OF FOOD TECHNOLOGISTS, June 19-22

Annual Meeting and Food Expo, New Orleans Convention Center, New Orleans, Louisiana. Information: David E. Weber, (312) 782-8424.

NATIONAL PLASTICS EXPO, June 20-24

Society of Plastics Industry, McCormick Place, Chicago, Illinois. Information: Jordon Morgenstern (202) 371-5200.

ISCC COLOR EDUCATION CONFERENCE, June 21-23.

Fashion Institute of Technology, NYC.

ASTM COMMITTEE D-1 ON PAINT, June 26-29

Baltimore, Maryland. Information: (215) 299-5543.

SYMPOSIUM ON PHOTOCHEMISTRY FOR IMAGING, June 26-29

Best Western White Bear Country Inn, White Bear Lake, Minneapolis, Minnesota. Information: Pam Forness, (703) 642-9090.

ASTM COMMITTEE D-20 ON PLASTICS, July 11-14

Town and Country Hotel, San Diego, California. Information: Robert Morgan, (215) 299-5505.

ILLUMINATING ENGINEERING SOCIETY OF NORTH AMERICA, Aug. 7-11

Annual Conference, Minneapolis Marriot Hotel, Minneapolis, Minnesota. Information: Diane Darrow, (212) 705-7269.

AMERICAN PSYCHOLOGICAL ASSOCIATION, 96th ANNUAL CONVENTION, Aug. 12-16

Atlanta, Georgia. Information: (202) 955-7705.

AMERICAN SOCIETY FOR PHOTOGRAMMETRY & REMOTE SENSING, Sep. 12-16

Fall Convention, Convention Center, Virginia Beach, Virginia. Information: Mary Buit, (703) 534-6617.

SOCIETY FOR INFORMATION DISPLAY, Oct. 4-6

International Display Research Conference (IDRC), Hyatt Islandia Hotel, San Diego, California. Information: (213) 305-1502 or (212) 620-3388.

ASTM COMMITTEE D-20 ON PLASTICS, Oct. 10-14

Toronto, Canada. Information: Robert Morgan, (215) 299-5505.

OPTICAL SOCIETY OF AMERICA, ANNUAL MEETING, Oct. 31-Nov. 4

Santa Clara Convention Center, Santa Clara, California. Information: (202) 223-0920.

FEDERATION OF SOCIETIES FOR COATINGS TECHNOLOGY, Oct. 19-21

66th Annual Meeting and 53rd Paint Industries' Show, McCormick Place, Chicago, Illinois. Information: (215) 545-1507.

Send materials for publication to:

Mrs. Bonnie K. Swenholt
5717 Gulick Road
Honeoye, NY 14471
(716) 229-5925

OFFICERS 1986-1988

President

Dr. Allan B.J. Rodrigues: E. I. DuPont de Nemours & Co.,
Troy Laboratory, 945 Stephenson Highway, P.O. Box 2802,
Troy, MI 48007-2802, (313) 583-8245

President-Elect

Mrs. Joy Turner Luke: Studio 231, Box 18, Route 1
Sperryville, VA 22740 (703) 987-8386

Secretary

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Center, Attn: STRNC-ITC, Natick, MA 01760-5019,
(617) 651-5469

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East-West Highway, Silver Spring, MD 20910, (301)
589-4747

Past President

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Prospect Road, Des Plaines, IL 60018, (312) 391-9426

DIRECTORS

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(301) 975-2342

Mr. Justin J.
Rennilson
(619- 698-1263

Dr. Wolfgang Walter
(617) 777-1900,
X-2317

1986-1989

Ms. Paula J. Alessi
(716) 477-7673

Mr. Roland L.
Connelly, Sr.
(919) 454-3161

Ms. Mary Ellen
Zuyus
(703) 471-6870

1987-1990

Dr. Roy Berns
(716) 475-2230

Mr. James Grady
(313) 855-2353

Mrs. Jacqueline
Welker
(412) 492-5554