Chairman’s Message

Greetings!

The Color & Appearance Division’s mission is to "educate, train, inform, and provide professional interaction opportunities to the global community involved" in "Coloring the World of Plastics". We on the CAD board take that mission and tag line seriously. As I take up the reins of leadership of the Division for the 2010-2011 operating year I find myself reflecting on the 23 years that I have been a member of SPE and CAD, and how my professional career has been enriched through the association. I have always said that I was dragged from my nice quiet lab tech position and "bodily tossed kicking and screaming" into the color lab of a major vinyl compoundinger; with little more knowledge of color than that gained when you open a box of crayons (the small one), and the ability to sometimes push the right buttons on the recently acquired computerized color matching system. To say I was in over my head at first would be an understatement, but my manager at that time was a big proponent of the Society; and with everyone on the technical staff being members it took very little encouragement for me to join. That introduced me to a world of knowledge and contacts that over a short time span helped to bring me up to speed on the aspects of plastics coloration that were critical to my success as a colorist. And as technologies, chemistries, and processes have changed over the years I have been able to continue to learn from the people at the tip of the spear. I can safely say from this personal experience that CAD delivered on its mission. I know that the same thing is recognized by many in our industry and that many more will benefit; with the CAD board always taking the steps necessary to deliver on that promise going into the future.

There is no questioning the fact that things have changed in how professional groups such as ours are viewed by both individuals and the companies they work for; the decline in SPE membership worldwide clearly illustrates this, but to this day CAD is still the best place for people to go to learn about the coloring of plastics. And though the information age has made much of the knowledge once only passed mouth-to-mouth and hand-to-hand readily available on the Web; the anecdotal information and personnel stories and experiences cannot easily be replicated in that media. Nothing can truly replace the face-to-face interaction and information exchange of professionals talking to one another.

The next chance for this "face-to-face" will be at our 2010 CAD RETEC™ taking in place in Nashville this coming September. The recent floods there have not had
CHAIRMAN’S MESSAGE - CONTINUED

any impact on planning and another great conference is in the making; from the technical program, to the exhibits, and to the networking opportunities so long an important feature of RETEC®. Please make note that this year’s conference will be a little different in that it runs on a mid-week schedule. Further information is included in this newsletter. We hope to see you there.

The next CAD board meeting will take place in Chicagoland the second week of August. The board continues to work on various programs and content that strengthens the SPE/CAD brand and brings further value to you. RETEC® is only one part of that. Our one-day session at the recent SPE ANTEC™ in Orlando was very successful, with attendance at many of the papers near standing room only. Such was the interest in the topics presented. Congratulations to our ANTEC™ 2010 TPC co-chairs, Sharyl Reid and Jim O’Dwyer. To know what is going on please keep your eyes on this newsletter, the division website at www.specad.org, and the periodic email communications that we send out.

In closing, I want to thank our immediate past Chairperson, Howard Kennedy, for his leadership of the division and his vision of our holding a virtual conference one day. I also want to thank all of the dedicated volunteers serving on the executive committee and general board for their energetic service and commitment to our attaining success in our stated mission. Without them it could not be accomplished.

I know that times have been tough in our industry for the last few years, but remember that you really can’t sing the blues when your world is full of color. So as we say in the green-brown state of my birth - Laissez Les Bon Temps Roule’ (Let the Good Times Roll).

Earl W. Balthazar, III
CAD Chairperson 2010

IN VITATION TO ATTEND OUR CAD BOARD MEETINGS

The Color and Appearance Division regularly holds Board of Director (BOD) meetings at the ANTEC™ and the CAD RETEC®. In addition, a Summer BOD meeting is typically held about 6 weeks prior to the next CAD RETEC®. The Summer meeting is scheduled in various locations. A Winter BOD meeting is held in January. The Winter meeting is typically held at a site of a future RETEC®. Any SPE CAD members who wish to attend are welcome at these meetings. If interested in attending the next Board meeting, please contact the Division Chairperson for more information.

Non-SPE Websites: Professional Networking Groups

In general, you must be a registered user on these websites to join the SPECAD Group listed there. These websites are not affiliated with SPE. To find the SPECAD group, go to the Groups directory and search for “SPE Color and Appearance Division”. Or, go to www.specad.org home page for a link to the groups on each website.

SPE COLOR & APPEARANCE DIVISION

MISSION STATEMENT

The Color and Appearance Division of SPE strives to educate, train, inform and to provide professional interaction opportunities to the global community involved in visual performance and aesthetics of plastics.
CALL FOR PAPERS
When: May 1 – 5, 2011
Contact: Bruce Mulholland, Ticona
PH: 859-525-4756
e-mail: bruce.mulholland@ticona.com
Abstract and Paper Deadline: November 19, 2010
Where: Hynes Convention Center/ Boston Marriott Copley Center
Boston, MA USA
Interested in all color & appearance related topics such as new pigment technologies, new additive technologies, color measurement/equipment, color processing equipment, end user/processor color troubleshooting, special effects, color “green” solutions, etc.

2010 CAD Board Election Results
Earl W. Balthazar, III

The CAD elections are conducted in spring each year. Anyone interested in running for the board in the next election should contact one of the officers listed on the back cover of this newsletter.

We are very pleased to announce the results of the 2010 elections for the SPE CAD Board. The six incumbents running have been re-elected and we added three new members to the board.

Please join me in offering congratulations to the Class of 2013!

Newly Elected:
Brenda Mullins
Doreen Becker
Paul Bykowski

Re-elected:
Brian West
Johnny Suthers
Roger Reinicker
Scott Aumann
Tom Rachal
Tracy Phillips

Larry Nitardy will complete Ann Smeltzer’s term in the Class of 2011, and will be running again next year for a full three year term. Congratulations to Ann also on her election by the board to the position of CAD Secretary.

Disclaimer:
The information submitted in this publication is based on current knowledge and experience. In view of the many factors that may affect processibility and application, this data/information does not relieve processors from the responsibility of carrying out their own tests and experiments; neither do they imply any legally binding assurance of certain properties or of suitability for a specific purpose. It is the responsibility of those to whom this information is supplied to ensure that any proprietary rights and existing laws and legislation are observed.
The Color and Appearance Division (CAD) is committed to the publishing of at least three newsletters a year (four, if there is sufficient material to justify the extra issue). To that end, we would like you to think about the financial side of sponsorship of the newsletter. For the small donation of $300 per year, we offer a business card sized (2 x 3.5 inches) mention in our newsletter, which goes out to the nearly 1,500 members of the CAD as well as other SPE division members. These are people active in every aspect of plastic coloring and additive technology. Larger sized spots are available at a commensurate increase in rate.

If you are interested in helping to sponsor the SPE/CAD Newsletter please contact:

SHARYL REID, A. SCHULMAN
Phone: 864-968-2426       Fax: 864-968-9515
Email: Sharyl_Reid@us.aschulman.com.

FUTURE RETEC® MEETINGS

2010 RETEC® Nashville, TN
Venue: Renaissance Nashville Hotel
Dates: Sept 12-14, 2010
Chair: Brian West

2011 RETEC® Chicago, IL
Chair: Howard Kennedy

FUTURE ANTEC™ MEETINGS

2011 - May 1-5
Boston, Massachusetts

SPE CAD Archive DVD

A Compilation of CAD RETEC®
and SPE ANTEC™
(CAD Sessions only)
Technical Papers from
1961-2007

Full text searchable—Search content from 86 conferences (972 papers & 9178 pages) in one step to find all historic papers referencing your search terms.

Get your Portable, Complete, Space-Saving Compilation Today!
SPE member price $200, SPE non-member price $300
**High Performance Pigments for Plastics**

Ferro’s Geode® Complex Inorganic Color Pigments offer unsurpassed color quality and stability. The complete Geode® line includes:

- Chrome Titanates
- Cobalt Blues & Greens
- Nickel Titanates
- Heat stable Blacks
- Iron Free Browns
- IR Reflecting Blacks

Ferro Corporation Performance Pigments & Colors
251 West Wylie Avenue P.O. Box 519
Washington PA 15301
Phone: 724-223-5900
Fax: 724-223-2700

**Pigments and Additives for the Plastics Industry**

Clariant Corporation
Pigments & Additives Division, Plastic Business
500 Washington Street, Coventry RI 02816
Phone: 800-441-4414

www.clariant.com

**The Shepherd Color Company**

4539 Dues Drive
Cincinnati, OH 45246
Tel: 513-874-0714
Fax: 513-874-5061
salesusa@shepherdcolor.com
www.shepherdcolor.com

**HIGH PERFORMANCE PIGMENTS FOR PLASTICS**

Ferro’s Geode® Complex Inorganic Color Pigments offer unsurpassed color quality and stability. The complete Geode® line includes:

- Chrome Titanates
- Cobalt Blues & Greens
- Nickel Titanates
- Heat stable Blacks
- Iron Free Browns
- IR Reflecting Blacks

Ferro Corporation Performance Pigments & Colors
251 West Wylie Avenue P.O. Box 519
Washington PA 15301
Phone: 724-223-5900
Fax: 724-223-2700

**Clariant Corporation**
Pigments & Additives Division, Plastic Business
500 Washington Street, Coventry RI 02816
Phone: 800-441-4414

www.clariant.com

**SPECTRA DYESTUFFS INC.**

363-E Cliffwood Park St.
Brea, CA 92821
P: 714-990-4300
F: 714-990-4302
www.spectradyes.com

**Tiona TiO2**

Delivering superior ease of processing, dispersion performance and opacity.

Cristal Global 410.229.4441

www.cristalglobal.com

**LINTECH INTERNATIONAL LLC**

Global Reach Local Touch
www.2Lintech.com
Contact: Charles Churn
704-708-4249
Charles.Churn@2lintech.com
KEYSTONE
KEYSTONE ANILINE CORPORATION
Changing the way you think about color

Keystone Aniline Corporation offers a comprehensive range of high quality products to satisfy your specific color needs and applications.

With highly experienced color technicians backed by advanced color-matching laboratories, Keystone provides the right ideas and products to help your business grow.

TECHNICAL SERVICES include color matching, extraction and analysis on competitive products, FDA migration studies along with any regulatory needs you may need.

KEYPLAST COLORANTS
- Complete range of dyes for all polymers
- Specialty dyes for polyamide (nylon), and various other engineering polymers
- FDA compliant dyes for PET
- FDA approved colorants for polymers
- FD&C aluminum lakes
- High performance pigments

SPECIAL EFFECTS
- Keyfluor fluorescent colorants for all polymers
- Keyplast granites
- Reversacol photochromic dyes
- Security tags and taggants

Please visit us at www.dyes.com or call 800-522-4DYE

YOUR GLOBAL SUPPLY PARTNER
Providing quality dyes and colorants to industry worldwide
- Global core products specifications
- Global master standards
- Global stocking locations
- Global corporate pricing structures
- Established logistics and delivery support
- Local contacts for quick response and support
- Global technical support
- Global regulatory compliance
  (TSCA, EINCS, MITI)
- Product certification (FDA, CONEG, AP99,
  EN71, REACH ready etc.) as required

HEUBACH
COMPETENCE IN COLOR

Organic Pigments  Inorganic Pigments  Pigment Preparations
Heucotech Ltd. 99 Newbold Road, Fairless Hill, PA 19030
www.heubachcolor.com  215-736-0712

ISHIHARA CORPORATION (U.S.A.)
• TiO₂  • Ultra-fine TiO₂
• Nickel Titanates  • Chrome Titanates
• Conductive Pigments
600 Montgomery Street  Tel: (415) 421-8207
San Francisco, California  94111  Fax: (415) 397-5403
www.isihara.com

ISK
ISHIHARA CORPORATION (U.S.A.)

TECHMER PM POLYMER MODIFIERS
QUALITY FORMULATION OF COLOR & ADDITIVE CONCENTRATES
18420 Laurel Park Road  #1 Quality Circle
Rancho Dominguez, CA 90220  Clinton, TN 37716
(310) 632-9211  (865) 457-6700
www.techmerpm.com

DOMINION COLOUR CORPORATION
Working Together For Quality
(416) 253-4297  hlekennedy@dominioncolour.com
www.dominioncolour.com

TECHMICAL SERVICES include color matching, extraction and analysis on competitive products, FDA migration studies along with any regulatory needs you may need.

TECHNICAL SERVICES include color matching, extraction and analysis on competitive products, FDA migration studies along with any regulatory needs you may need.

TECHMICAL SERVICES include color matching, extraction and analysis on competitive products, FDA migration studies along with any regulatory needs you may need.

TECHMICAL SERVICES include color matching, extraction and analysis on competitive products, FDA migration studies along with any regulatory needs you may need.

TECHMICAL SERVICES include color matching, extraction and analysis on competitive products, FDA migration studies along with any regulatory needs you may need.

TECHMICAL SERVICES include color matching, extraction and analysis on competitive products, FDA migration studies along with any regulatory needs you may need.

TECHMICAL SERVICES include color matching, extraction and analysis on competitive products, FDA migration studies along with any regulatory needs you may need.

TECHMICAL SERVICES include color matching, extraction and analysis on competitive products, FDA migration studies along with any regulatory needs you may need.

TECHMICAL SERVICES include color matching, extraction and analysis on competitive products, FDA migration studies along with any regulatory needs you may need.

TECHMICAL SERVICES include color matching, extraction and analysis on competitive products, FDA migration studies along with any regulatory needs you may need.

TECHMICAL SERVICES include color matching, extraction and analysis on competitive products, FDA migration studies along with any regulatory needs you may need.
September 13-16, 2010
Renaissance Hotel
Nashville, TN

The Color & Appearance Division of SPE presents

Colorful Nashville


Visit above site for most up to date information!

Celebrating 48 years of service to the industry, the CAD RETEC® Topcon is the technical and industry event for OEMs, specifiers, processors, resin suppliers, colorant suppliers, equipment suppliers, testing and auxiliary equipment and anyone who works with color and plastic! Advance registration deadline is August 13, 2010 (Housing deadline is August 12th)

Conference Highlights:

◆ Two full days of technical sessions (Tues PM, Weds, Thurs AM)
◆ 60+ exhibitors showcasing products/services
◆ Excellent networking opportunities
◆ Preconference “Coloring of Plastics” Tutorial* with Bob Charvat
◆ The Premier Conference devoted to the Coloring of Plastics
*separate registration required for Tutorial attendance

See you in Nashville!

-Brian West
CAD RETEC® 2010 Chairperson
At the recent 2010 ANTEC™ in Orlando, the Color and Appearance Division, and two of its members, were recognized with significant SPE Awards. Sharon M. Ehr (Uniform Color) and Sharyl M. Reid (A. Schulman) were both recognized for election as Honored Service Members of the Society of Plastic Engineers. The CAD division also earned the Pinnacle and Communications Excellence Awards.

Sharon and Sharyl were recognized at the SPE Celebrates banquet at the Orlando World Center on May 16th. Both also received the HSM certificate and pin from Dr. Paul Anderson, 2009-2010 SPE President at the banquet. According to SPE Bylaws, "To be elected an Honored Service Member, a candidate shall have demonstrated long-term, outstanding service to, and support of, the Society and its objectives; shall be sponsored in writing, by the Board of Directors of at least one Section or Division."

Only 287 members, not counting the 2010 inductees, have been elected to this prestigious status since it was established in 1992. Both Sharon and Sharyl were well qualified to receive these awards. They have both been on the CAD Board of Directors for many years, despite their youthful appearance and energy, and have contributed greatly to the success of the Division. Both have performed admirably in several leadership positions, and have been instrumental in the Division receiving the Pinnacle award this past year, as well as previous years.

Sharon has been a long time SPE member active in both Section activities (Chicago) and our Color and Appearance Division. She has held many different positions in CAD including CAD chair, RETEC® chair and co-chair, ANTEC™ chair, newsletter editor, plus serving on many committees. Sharon worked on all RETEC® committees since 1993 either with setup, registration, moderator, printing, or technical program. For her section, Sharon has been treasurer, secretary, and technical program chair. During her tenure, the SPE CAD Newsletter was revived. The reinvigorated newsletter received second place awards from ISPE in 2001 and 2002 as a result. The SPECAD newsletter has continued to be successful since that time.

Likewise Sharyl is a past CAD Chair, has been ANTEC™ Divisional Technical chair twice (2006 and again in 2010), and CAD RETEC® Co-chair in 2003. During her time as CAD sponsorship Chair she managed to substantially increase our sponsorship income through the added participation of ten new corporate sponsors. This work earned Sharyl the Terry Golding Outstanding Achievement Award and afforded CAD the opportunity to contribute to special iSPE needs, various student and educational activities, and our own Scholarship Endowment fund at a higher level. She was also instrumental in our internal committee suc-
cession planning which allows our division to keep functioning successfully on a long-term basis, and has been our most outspoken member with regard to attendance rules for board members.

Congratulations to Sharon and Sharyl for their outstanding work, they certainly deserve the title of Honored Service Member of the Society of Plastic Engineers.

Also at the SPE Celebrates banquet, the CAD received the Pinnacle and Communications Excellence Awards. The awards are given to Sections or Divisions of the Society to recognize outstanding achievement. The Pinnacle program was established in 2005 to recognize Sections and Divisions that successfully create and deliver member value during year. Sections and Divisions are reviewed in four categories of achievement: organization, technical programming, membership and communication. Two levels or achievement are possible: Silver and Gold. The Pinnacle Award is the most prestigious Award a SPE Division can be awarded. The CAD was recognized at the Gold, or highest level. The Communications Excellence Award program is a new program, established in 2009, to recognize Sections, Divisions, and Special Interest Groups that implement effective communication practices. The Communications Excellence Award covers the broad scope and complexity of communications in today's information age. It is intended to recognize all types and forms of communications as opposed to being focused on one medium or method of communication and information delivery. It is not a competitive award. Rather, it is based on meeting or exceeding certain performance standards and accomplishment thresholds. The CAD was recognizes at the highest level, the Communications Leader level.

All in all, the CAD was well represented at the SPE Celebrates banquet at the Orlando World Center on May 16, 2010.
DYES VS. PIGMENTS - THE FACE OFF
By: Lynn Bente, Buckeye Chemical & Frank Lavieri, Lansco Colours

IS THERE A PLACE FOR BOTH DYES AND PIGMENTS IN THE COLORATION OF PLASTICS?

ARE DYES MERELY "OLD COLORANT TECHNOLOGY" THAT HAVE BEEN LARGELY REPLACED BY PIGMENTS?

ARE PIGMENTS INFERIOR TO DYES?

SHOULD DYES ONLY BE USED TO COLOR JELLO?

The answers to these questions, and others, are important in choosing the unique colorant combination that gives a plastic part the needed level of performance at the most economical cost. In this paper, dyes and pigments as two classes of colorants, are compared in 7 key performance parameters with the goal of settling a color matcher’s dilemma - Dye or Pigment?

PERFORMANCE PROPERTY COMPARISONS

Color Strength
In general, dyes have a lower molecular weight than pigments and therefore have a higher concentration of chromophore per weight. The chromophore of a colorant is what is responsible for it’s coloring power. This means that dyes are stronger than pigments, on average. Below is a spectrophotometer curve of an equal amount of Pigment Yellow 100 and Solvent Yellow 104. The higher absorption maximum for the dye indicates that it is stronger (absorbs more light) than the pigment.

Conclusion: Dyes are stronger colorants than pigments, in general.

Migration
Migration is an undesirable characteristic of a colorant and may be seen when the color in a plastic part rubs off. At the microscopic level migration involves the movement of colorant from the inside of the plastic part to the surface. This characteristic is a function of both the colorant (dye or pigment) and the resin system but is a serious limitation.
Welcome, Opening Remarks - Howard Kennedy
Howard advised the participants that we are holding the meeting according to the Society of Plastics Engineers Antitrust Guidelines. Howard thanked everyone for attending. We reviewed the committee list. Joe Cameron will be retiring from SPECAD after the 2010 ANTEC™, and his current positions will need to be filled. We will elect a new Secretary at this meeting.

Secretary Report - Jim Figaniak
Austin made a motion to accept Oct 2009 minutes, George second, motion passed.

Treasurer's Report - Bruce Mulholland
Bruce submitted the treasurer's report. ISPE annual report and income tax filed for this year. We can now file IRS EZ form. The tax return was circulated. We must be aware of thresholds for EZ filing for future reference. Johnny made a motion to accept Treasurer's report, Austin second, motion passed.

Councilor's Report - Sandy Davis
Sandy discussed the contents of her report at the last Councilor's Meeting (2 days). Earl reinforced her comments.

ISPE updates/comments
Read Tricia's comments

Finance Chair - Scott Hietzman
Nov. 09 report sent to ISPE for Pinnacle Award, and our Goals were sent by end of year.

COMMITTEE REPORTS

TECHNICAL PROGRAM
ANTEC™ TPC - Bruce Mulholland
Austin will take over ANTEC™ chair after ANTEC™ 2010 ANTEC™ 2010 (Orlando) - J. O'Dwyer/ S. Reid
11 papers finalized, May 17 will be technical session with Business Meeting to follow, May 18 will be board meeting ANTEC™ 2011 (Boston) - Jack Ladson/ Bruce Mulholland
SPE Past President or SPE member with distinguished contributions to plastics; elected by Past Presidents. Complimentary Dues.
ANTEC™ 2012 - Austin Reid/ Tom Rachal
Still no location selected by ISPE RETEC TPC - S. DAVIS

RET EC® 2009 (Savannah) - Scott Aumann
- Wrapup of RET EC®. 329 attended. Overall went well.

RET EC® 2010 (Nashville) - Brian West 9/ 14-16
Different format this year (Tu-Th). Reminder for call for papers and tabletops. Information posted on our website

RET EC® 2011 (Schaumburg, IL) - Sharon Ehr 9/ 25-27
- No report submitted

RET EC® 2012 (Louisville) - Sandy Davis
We have a contract, working on putting together a team. 50th Anniversary, and we are looking for previous members to invite

RET EC® 2013 (Indianapolis) - No report submitted

Strategic Planning - Howard Kennedy
We are trying to extend our reach electronically. iRETEC sub-committee formed (members?)

Communications - Tracy Phillips
252 in LinkedIn group. Facebook SPECAD group has minimal participation. A LinkedIn SPECAD BOD subgroup was created with 19 participants so far. Tracy submitted the ISPE Communications award application on time.

Newsletter - Jamie Przybylski
Dec issue published. March/April 2010 next including elections Earl asked to have election reminder in newsletter RETEC® to capture additional members. Always looking for good articles Per Sharyl, there are 23 current sponsors for the newsletter, 9 have paid. Not newsletter, but 2009 survey results summarized.

Eblasts - Mark Tyler
Mark is managing the monthly D 21 email announcements.

Elections - Earl Balthazer
Mailed the ballots, and will include reminder to update e-contact info. 3 current members not running, have 5 nominations, and need updated bio's for those running. The ballot will be online early March with results mid-April with new members invited to ANTEC™ 2010. Question about CAD primary and secondary division members can vote?

Website - Joe Cameron
looking for a CAD photographer to replace himself. Newsletter page is being updated with all historical newsletters, 80% complete! Preliminary RETEC® 2010 info is posted New SPE logo was added to the website

Education - Steve Goldstein
Next course being constructed, but need input from the group, and Steve will send an email to the group for discussion on topics.

Secretary Election - Howard Kennedy

International - Brian West
New member -Jim F.
Next European conference in March, info on website

Awards - Roger Reinicker
Presented report Appendix C. Conversation about whether speakers get feedback. Add to WriteNow doc. Correcting updating Awards List. Looking for nominations for Terry Golding Award and Honored Service Member

Membership - Jack Ladson - No report submitted

continued on page 13
Please visit the websites of the sponsors listed in this newsletter by clicking on web address included in their sponsorship space.

Thank you!
for dyes because they migrate out of polyolefins and flexible PVC, two very important commercial resins. The chart below shows the relative volumes of plastic resins produced in the United States in 2000. Approximately 45% of the 100 billion lbs of resin produced that year where polyolefins (all polyethylene types and polypropylenes). Additionally, 14 billion lbs of PVC (both flexible and rigid) was produced. The migration of dyes out of polyolefins and flexible PVC (only), generally makes them unusable for the coloration of these resins and is a serious limitation to the use of dyes for the coloration of plastics. Dyes may be used to color the styrenic, thermoset, and engineering plastics represented in the shaded portions of the chart.

**Figure 2** Source: American Plastics Council

**Conclusion:** Pigments can be used to color all plastics but not dyes.

**Warpage**

Some plastic additives, including some, not all, pigments, cause Warpage or dimensional distortion of a plastic part. Warpage is most common in Polyolefin resins. Polypropylene bottle caps, for example, colored with Phthalocyanine Blue (Pigment Blue 15:3) are smaller than caps molded in the same mold with uncolored Polypropylene and do not fit on the bottleneck. This is due to changes in the polymer catalyzed by the pigment and represents a real problem for the molder and every other company involved with this package and product.

Because warpage occurs in Polyolefin polymers where dyes may not be used they are not a solution to this problem. By carefully choosing pigments that are non-warping a full color range of polyolefin parts may be manufactured and the issue of warpage may be minimized, although not entirely eliminated.

**Conclusion:** Warpage is an important consideration when coloring Polyolefins. Some pigments can be a problem but dyes are not the solution.

**Dispersion**

To look at this issue it is best to start with the definition of a dye and a pigment as stated by their respective trade associations. Dye "Intensely colored or fluorescent organic substances only, which impart color to a substrate by selective absorption of light. Dyes are soluble in the application media." ETAD Pigment: "Colored, black, white, or fluorescent particulate organic or inorganic solids, which are insoluble in the vehicle or substrate in which they are incorporated." CPMA Dispersion involves the even distribution of particles in the molten resin and is not an issue for dyes because they are completely dissolved in the resin during the processing and no longer are in particle form. Under the right conditions, dyes will quickly give a homogeneous appearance to a plastic part and not leave imperfections. Generally, more attention to detail is needed to get the same result with pigments. The addition of dispersion aids and close attention to processing conditions by an experienced worker may be needed to give uniformly colored plastics parts. If not worked with properly, the addition of pigments to color a plastic part can lead to truckloads of scrap.

**Conclusion:** Dyes have superior ease-of-use.

**Lightfastness**

The ability of a colorant to withstand fading by sunlight (lightfastness) or the outdoor elements (weatherfastness) is a property of both the colorant and resin system. Colorant manufacturers provide data for their products and this should be consulted before choosing a colorant where such a property is required. This being said, the most lightfast colorants are pigments.

Inorganic pigments are used for demanding outdoor application such as vinyl siding and should
be the first choice when lightfastness or weatherfastness is required. Color failure of plastic parts once in the field can result in a very expensive claim from the customer. This is not an area to cut cost by using cheaper colorants.

Conclusion: Choose colorants cautiously when lightfastness or weatherfastness is needed. Start color matching with inorganic pigments and only use organic pigments or dyes from suppliers with deep pockets!

**Thermal Stability**

The colorant must survive the processing conditions that incorporate it into the plastic. Practically all colorants will burnout (lose their color) at some temperature. The conditions under which a colorant will fail during the processing of a resin are a function of both the colorant and the resin. There are as many examples of dyes with exceptional heat stability as there are pigments. Additionally, there are examples of colorants failing at a low temperature in one resin and a much higher temperature in another resin. While the heat stability of a colorant is an important consideration in its selection, there are no generalities concerning dyes or pigments.

Conclusion: The heat stability of a colorant is a function of both the colorant and the resin system.

**Hiding Power/Transparency**

Dyes generally do not alter the transparency of the resin they color. Pigments will make the resin more opaque because their particles reflect a portion of the incident light. When transparent plastic parts are desired, dyes are the first choice of the color matcher and when opaque parts are needed, it is pigments.

Conclusion: The choice of colorant depends on the appearance needed.

**Summary**

After reviewing 7 key performance parameters, it can be seen that dyes and pigments each have their place in the color matcher's "tool box." Each of these colorant classes holds products that are necessary to achieve a full range of appearance effects.

---

**Board of Directors Meeting Minutes - continued from page 11**

**Survey - Jamie Przybylski**
Presented report Appendix C

**Color Advisory Group - Brian West**
Presented report Appendix C

**Old Business - All**
reviewed action items from previous meeting copy of Action items will be sent in a separate document

**New Business - All**
- Austin made a motion to accept changes to operating rules as written by Bruce, Steve E. second, motion passed
- Bruce has a DCC presentation about graining to give to Tracy for our website.
- Bob Charvat thanked the group for his recognition.
- Johnny suggested that we write a letter of appreciation to Dupont and Austin for their courtesy and hospitality.
- Howard affirmed the Chair positions and the Executive Committee positions for next year.

Bob made a motion to close the meeting, second by Scott, motion passed.

**Next Meeting:**
Orlando, FL - ANTEC™ May 18. More details to follow (summer meeting will be in Dallas/Ft. Worth Aug 9-10)

---

**Action Items From January 2010 BOD Meeting**

<table>
<thead>
<tr>
<th>Action:</th>
<th>Assigned to</th>
<th>Due</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Renew contact with European Color &amp; Additive Div.</td>
<td>Brian</td>
<td>Aug 10</td>
<td>Open</td>
</tr>
<tr>
<td>Thank you letter to Dupont/Austin</td>
<td>Howard/Jim</td>
<td>May 10</td>
<td>Open</td>
</tr>
<tr>
<td>Provide an article to newsletter on SPE membership grades</td>
<td>Earl</td>
<td>Aug 10</td>
<td>Open</td>
</tr>
</tbody>
</table>

**Dear Members:**

Just a reminder that you can view past and current Board Minutes on the SPECAD website. We do not typically publish the minutes in the electronic versions of our newsletter, but they are always available for our members to view from our website.

The link is provided below:
TALES OF COLORFUL MISCHIEF

Coloring the World of Plastics
Introducing a new feature that will appear regularly in the CAD Newsletter. This feature will contain interesting, amusing incident situations, gossip and factual information for your consideration, rebuttal or dismissal. The author shall remain anonymous to avoid verbal and/or physical abuse!

The focus in this first issue is "Clear Communications". Clear Communications implies verbal transmission of information is received and most importantly clearly understood by the receiver!

Case-in-point.
An unidentified (to protect the guilty) Color Matcher received a recommendation a Color Match would remain relatively color stable for a longer period of time if kept in a very low temperature freezer. So far OK. Months later the Color Matcher complained even though the match sample look fine, the retained samples of the pigments used in the color match formulation kept with the match sample became covered with frost shortly after being removed from the freezer. This moisture interfered with subsequent work relating to the match sample. OOP!

This clearly shows the transmission of information was not clearly understood by the receiver. The above colorfully and visibly (Pun Intended) demonstrates how seemingly clear communications can go awry and seriously disrupt a project.

The lesson learned here is just because a verbal transmission has taken place, does not mean the message has been received and UNDERSTOOD!!!

That's all for this copy of the CAD Newsletter. Send comments, complaints and/or suggestions to the CAD Newsletter Editor. Look for another magnificent proclamation in the next issue.

Look for "STORIES OF COLORFUL MISCHIEF" in future newsletters.
## COLOR & APPEARANCE DIVISION BOARD OF DIRECTORS

### OFFICERS

<table>
<thead>
<tr>
<th>Position</th>
<th>Name</th>
<th>Phone</th>
<th>Email</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chairman</td>
<td>Earl Balthazar</td>
<td>817-719-0224</td>
<td><a href="mailto:ebalthazar@xxxtrr.com">ebalthazar@xxxtrr.com</a></td>
</tr>
<tr>
<td>Chair-Elect</td>
<td>Scott Heitzman</td>
<td>513-681-5950</td>
<td><a href="mailto:scott.heitzman@xxsunchemical.com">scott.heitzman@xxsunchemical.com</a></td>
</tr>
<tr>
<td>Finance Chair</td>
<td>James Figaniak</td>
<td>215-736-1126</td>
<td><a href="mailto:jim.fignaniak@xxxtcolor.com">jim.fignaniak@xxxtcolor.com</a></td>
</tr>
<tr>
<td>Immediate Past Chairman</td>
<td>Howard Kennedy</td>
<td>419-253-4297</td>
<td>h <a href="mailto:kennedy@xxxdominioncolour.com">kennedy@xxxdominioncolour.com</a></td>
</tr>
<tr>
<td>Councilor</td>
<td>Sandra Davis</td>
<td>302-999-2540</td>
<td><a href="mailto:sandra.p.davis@xxusa.dupont.com">sandra.p.davis@xxusa.dupont.com</a></td>
</tr>
<tr>
<td>Treasurer</td>
<td>Bruce Mulholland</td>
<td>859-525-4756</td>
<td><a href="mailto:bruce.mulholland@xxxticona.com">bruce.mulholland@xxxticona.com</a></td>
</tr>
<tr>
<td>Secretary</td>
<td>Ann Smeltzer</td>
<td>412-809-2222</td>
<td><a href="mailto:ann.smeltzer@xxlanxess.com">ann.smeltzer@xxlanxess.com</a></td>
</tr>
</tbody>
</table>

### DIRECTORS until 2011

<table>
<thead>
<tr>
<th>Name</th>
<th>Phone</th>
<th>Email</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sharon Ehr</td>
<td>616-494-7577</td>
<td>Uniform Color</td>
</tr>
<tr>
<td>Steve Esker</td>
<td>614-679-4677</td>
<td>Paramount Colors, Inc.</td>
</tr>
<tr>
<td>Steve Goldstein</td>
<td>704-996-6781</td>
<td>BASF</td>
</tr>
<tr>
<td>Jamie Przybylski</td>
<td>419-559-2459</td>
<td>Terra Community College</td>
</tr>
<tr>
<td>Betty Puckerin</td>
<td>812-466-9828</td>
<td>Ampacet Corporation</td>
</tr>
<tr>
<td>Austin Reid</td>
<td>228-255-2362</td>
<td>DuPont</td>
</tr>
<tr>
<td>Larry Nitardy</td>
<td>423-312-3439</td>
<td>ComAssist, LLC Len Associates, dba <a href="mailto:Linitardy@xxxaoi.com">Linitardy@xxxaoi.com</a></td>
</tr>
<tr>
<td>Mark Tyler</td>
<td>330-239-3067</td>
<td>A. Schulman Invision, Inc.</td>
</tr>
</tbody>
</table>

**Note:** When emailing remove the xxx after the @

### DIRECTORS until 2012

<table>
<thead>
<tr>
<th>Name</th>
<th>Phone</th>
<th>Email</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alan Bodi</td>
<td>419-356-7308</td>
<td>PolyOne</td>
</tr>
<tr>
<td>Hal Button</td>
<td>330-535-2100</td>
<td>Akrochem</td>
</tr>
<tr>
<td>Jeff Drusda</td>
<td>570-668-8321</td>
<td>Silberline Manufacturing Co., Inc.</td>
</tr>
<tr>
<td>Jack Ladson</td>
<td>215-369-5005</td>
<td>Color Science Consultancy</td>
</tr>
<tr>
<td>Frank Laviere</td>
<td>401-461-4100</td>
<td>LanSCO Colors</td>
</tr>
<tr>
<td>Bruce Mulholland</td>
<td>859-525-4756</td>
<td>Ticona</td>
</tr>
<tr>
<td>George Rangos</td>
<td>724-229-5371</td>
<td>Ferro Corporation</td>
</tr>
<tr>
<td>Sharyl Reid</td>
<td>864-968-2426</td>
<td>A. Schulman Inc.</td>
</tr>
</tbody>
</table>

### DIRECTORS until 2013

<table>
<thead>
<tr>
<th>Name</th>
<th>Phone</th>
<th>Email</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scott Aumann</td>
<td>912-964-3061</td>
<td>EMD Chemicals</td>
</tr>
<tr>
<td>Doreen Becker</td>
<td>914-772-5580</td>
<td>Americhem Corporation</td>
</tr>
<tr>
<td>Paul Bykowski</td>
<td>219-331-6981</td>
<td>Finos, LLC</td>
</tr>
<tr>
<td>Brenda Mullins</td>
<td>904-540-0880</td>
<td>Nubiola, USA</td>
</tr>
<tr>
<td>Tracy Phillips</td>
<td>770-995-0887</td>
<td>Uniform Color</td>
</tr>
<tr>
<td>Tom Rachal</td>
<td>405-775-5014</td>
<td>Tronox LLC</td>
</tr>
<tr>
<td>Roger Reinicker</td>
<td>302-992-1252</td>
<td>BASF Corporation</td>
</tr>
<tr>
<td>Johnny Suthers</td>
<td>423-229-3263</td>
<td>Eastman Chemical Company</td>
</tr>
<tr>
<td>Brian West</td>
<td>865-425-2113</td>
<td>Techmer PM LLC</td>
</tr>
</tbody>
</table>

### OTHER USEFUL CONTACTS

- **SPE Headquarters:** 203-775-0471 phone customerservice@xxx4spe.org
- **CAD Newsletter Publication:** Peacock Graphics, Inc. 847-341-4066 peacockgfx@aol.com
- **WebSite Host/Designer:** Becky and Jeremy Hodge 519-824-3434 info@xxxe-xyx.com
- **SPE Headquarters:** 203-775-0471 phone customerservice@xxx4spe.org
- **Peacock Graphics, Inc.:** 847-341-4066 peacockgfx@aol.com
- **WebSite Host/Designer:** Becky and Jeremy Hodge 519-824-3434 info@xxxe-xyx.com

**SPE Headquarters:** 203-775-0471 phone customerservice@xxx4spe.org

**Peacock Graphics, Inc.:** 847-341-4066 peacockgfx@aol.com

**WebSite Host/Designer:** Becky and Jeremy Hodge 519-824-3434 info@xxxe-xyx.com

### CDs /PerfectBinding

<table>
<thead>
<tr>
<th>Name</th>
<th>Phone</th>
<th>Email</th>
</tr>
</thead>
<tbody>
<tr>
<td>OmniPress</td>
<td>608-246-2600</td>
<td><a href="mailto:twagner@xxxomnipress.com">twagner@xxxomnipress.com</a></td>
</tr>
<tr>
<td>ACE Chair Roberto Todesco</td>
<td>419-356-7308</td>
<td><a href="mailto:r.todesco@xxointernational.com">r.todesco@xxointernational.com</a></td>
</tr>
<tr>
<td>National Plastics Center</td>
<td>210 Lancaster Street</td>
<td>Leominster, MA 01453</td>
</tr>
</tbody>
</table>

**OmniPress:** 608-246-2600 twagner@xxxomnipress.com

**ACE Chair Roberto Todesco:** 419-356-7308 r.todesco@xxointernational.com

**National Plastics Center:** 210 Lancaster Street Leominster, MA 01453