CHAIRMAN’S MESSAGE

Please join me in recognizing our outgoing chair, Mr. Scott Heitzman, who has led our group exceptionally well for the past year. Under his leadership, the Color and Appearance Division achieved both the SPE Gold Pinnacle Award and SPE Communications Excellence Award. We continued our Scholarship Awards and financial support for the endowment fund and other educational programs. In addition, we had another successful RETEC® and ANTEC®, the importance of both of these technical conferences cannot be overstated. Of course, none of this could have been achieved without a lot of support from your Board of Directors, and I am truly humbled to work among some of the finest, hard-working volunteer-leaders in our industry.

We have ambitious plans for our organization in 2012-13. We are guided by our mission to educate, train, and inform; so, we will provide plenty of opportunities to interact professionally. We will continue to make the SPE Color and Appearance Division the best place to learn about the coloring of plastics, and we will do so in such a way that creates valuable, strong, personal, and professional relationships. We will provide our group with many forums and modes of communication to connect all of our members. We will continue our tradition of sound fiscal management to insure the future of our organization and a foundation for our industry. We will strive to serve our members with the following in 2012-13:

- We celebrate the 50th Anniversary of the SPE CAD RETEC® in Louisville, Kentucky on September 30 – October 2. Sandra Davis will be chairing this event, and she has some special events planned for this year’s RETEC® conference. Please visit www.specad.org to register.
- ANTEC® 2013 will be held in Cincinnati, Ohio on April 22-24. Scott Heitzman will chair this year’s technical forum.
- Tracy Phillips and her committee are planning a thorough update of the CAD website. All of this is being done to bring more value to our members by providing information about our
activities, facilitating communication, providing technical content or links to technical content, and being a general resource for our industry.

- Dr. Steve Goldstein is leading the effort to create a second installment of our Education Seminar series, which can be given at local SPE section meetings or educational events.

- Johnny Suthers has managed our Endowment Fund for several years through some very difficult financial times, and we are proud that we have been able to continue this valuable service for the next generation. Due to both the successful RETEC®’s and the sound conservative fiscal management of your CAD funds, we will continue to contribute to the Endowment Fund once again.

I would like to take this opportunity to recognize a very special person in our industry who has officially resigned from the CAD Board of Directors after decades of service: Mr. Robert Charvat. Bob was present at a meeting in the 1960s in Rochester, NY at the Eastman Chemical Co. with four other gentlemen. We believe this was the very first meeting of SPE members concerned with the coloring of plastics. Bob has earned many accolades and awards throughout his career, and we are delighted that he has decided to stay involved with our section.

Lastly, I would like to welcome Cheryl Treat to our CAD Board of Directors. We look forward to working with Cheryl, and I’m sure she will bring much to our group as our newest member.

See you in Louisville.

Best Regards,

Jim Figaniak
CAD Chairperson

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

Thank you!
The Color and Appearance Division (CAD) of the Society of Plastics Engineers (SPE) will be hosting our annual technical sessions during this conference. We invite you and your company to present a technical paper at the largest plastics conference this year! These sessions are dedicated to the coloring of plastics. Consider a paper and presentation related to:

- Color Trends
- Effects in Plastics
- Color Measurement
- Color Matching
- Test Methods
- Regulatory Issues
- Processing Equipment
- Instrumentation

More detail on submission and the event can be found on the Society of Plastics Engineers website www.4spe.org. Details regarding paper submission and tools such as a template for the paper can be found at www.antec.ws. Deadline for the abstract and paper submission is October 23, 2012 @ 5:00 PM Eastern Standard Time. Papers will be reviewed by our Technical Program Committee and revisions required by November 13, 2012.

The dates of the conference are April 22-24, 2013. Give me a call and I can walk you through the process. Attendance will be high as Cincinnati, Ohio is an exceptional venue. Contact me as soon as possible. You don’t want to miss this opportunity.

Scott Heitzman  scott.heitzman@SunChemical.com
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COLORING OF PLASTICS TUTORIAL
PRESENTED BY: THE COLOR AND APPEARANCE DIVISION

The Color and Appearance Division of the Society of Plastics Engineers has been presenting the Tutorial for a number of years at the start of the Division’s annual RETEC®. Many members and non-members of SPE have benefited from this program. Have you or a colleague benefited? If not, why not?

The Tutorial is a major starting and/or improvement opportunity for many just beginning a career or wanting to add to their base knowledge of coloring of plastics. A refresher or new up-to-date fresh look at your own career may be the order of the day. This Tutorial has historically been held the day before the annual RETEC® starts. Usually this is a Sunday with the RETEC® officially starting the following day.

The Tutorial requires a full day, 8:00 am till about 5:00 pm. It is full of practical information embellished and enlightened by active participation of all the attendees. The attendance is limited to 20 persons. So register soon.

Who might benefit from participating? Past Tutorial records show colleagues already pursuing careers in coloring of plastics, new graduates from community colleges, four year colleges and vocational technical schools who have participated in the CAD Tutorial give the Tutorial presentation high marks for improving their understanding of coloring of plastics. A few examples are:

- Executives needing to better understand their companies’ coloring issues
- Managers newly appointed and/or desiring to communicate more effectively with peers and subordinates
- Sales field personal hoping to gain more technical knowledge to better serve their customers
- Marketing staff administrators needing to improve their communication skills with their human resource staff with ability to evaluate potential candidates for color related positions
- Product designers those wishing to better understand the coloring decisions they must make when selecting and/or approving colors for the products being designed
- Plant machine operators needing to better understand the issues needed to effectively operate plastics processing machines making products requiring color control
- Quality control staff those new to the QC position or those thinking a refresher would be helpful in obtaining a better understanding of color and appearance judgment issues
- Others/attendees not already identified

A number of coloring of plastics subjects will be covered during the Tutorial. Active participation by attendees is strongly encouraged! We will all learn together! And...We will have fun doing it! Here are just some of the items that will be addressed during the session including a colorful, take home, manual for your work place reference. Here are some, but not all, of the subjects included.

- What is color?
- What is appearance? (it is not the same as color)
- A discussion of additive and subtractive color
- What is “color is a matter of 3”?
- Ever hear of ROY G. BIV?
- A discussion of the “CIE” and “LAB” system
- What constitutes a “sample”
- Colorant incorporation and dispersion issues
- Discuss issues developed by attendees
- A discussion of important colorant terminology
- Colorant selection information
- A brief description of how some colorants are made
- Colorant classes
- A discussion of pigment physical properties and how they may affect products
- A discussion of lighting when viewing samples including LED’s
- Definitions and understanding organic, inorganic, soluble dye and effect colorants and their properties

All of the above will not result in anyone being the “best in the nation” color technologist. However, the 20 attendees will leave the presentation with a better understanding of their careers and be much more effective in their careers. The attendees will be able to interact with each other and the presenter in open discussions of issues and problems they are experiencing in their day to day activities. I hope to see 20 bright eyed and participating people on Sunday, September 30, 2012 at the Louisville Marriott, downtown in Louisville, KY. Your presenter will be Bob Charvat. Go to www.specad.org for Tutorial, RETEC® and Hotel Registration information, forms and additional information.

To register for the seminar go to http://www.specad.org/index.php?navid=144
Hotel Information
Louisville Marriott Downtown
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Discounted Conference Room Rate:
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Room Block Dates: Sept 29-Oct 3.
Rates will increase significantly after Sept. 7, 2012 at 5pm or whenever the room block is full. Cancellation policy: Any hotel reservation canceled within 48 hours of arrival date will be charged for one (1) night’s room and tax.

To Reserve by Phone:
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To Reserve Hotel Online:
click here: ONLINE HOTEL RESERVATIONS

Hospitality Suite Reservations:
Please contact Conference Chair Sandra Davis sandra.p.davis@xxxusa.dupont.com for information about hospitality suite reservations. (remove the xxx from Sandra’s email address prior to sending).

Room Keycards - Sponsored by BASF

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Internet Service for Conference block hotel guests is Sponsored by A. SCHULMAN

Important Note to Attendees:
Be sure to stay at the conference hotel if possible. Meeting our contracted number of rooms helps defer the cost of meeting space and registration fees and helps us obtain lower room rates for the attendees. Make sure your room and hospitality suites are part of the CAD RETEC® 2012 room block.
Thanks for your support and cooperation.

RETEC®2012 Committee
Chair – Sandra Davis, DuPont Titanium Technologies
Vice - Chair – Betty Puckerin, Ampacet
Technical Program – Jeff Drusda, Silberline & Johnny Suthers
New Technology Forum – Sandra Davis, DuPont
Registration – Bruce Mulholland, Ticona
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ONLINE REGISTRATION click ➤
(click above) or anywhere you see www.spe.cad.org and follow links. Available until Sept 24, 2012. After that, register on-site.
SunDay SepTeMbRe 30

**Golf Outing** (Pre-register for this event)
Covered Bridge Golf Club, a Fuzzy Zoeller Course.
9:00am-10:15am – registration at course
10:30am – Shotgun Start, 4 person scramble format
$100 Fee (see pg 19 for details). Golf Outing Prizes will be presented at the Welcome Reception.
8:30am – 5:00pm

**Pre-Conference Seminar:** Coloring of Plastics with Bob Charvat (Separate Registration required)

**MONDAY, OCTOBER 1**
7:30am Breakfast Sponsor: Lansco Colors
7:30 Registration desk opens
8:15 Introduction & Welcome
   Sandra Davis, DuPont Titanium Technologies

**MORNING SESSION**
Moderator: Bruce Mulholland, Ticona
8:30 50 Years of Coloring the World of Plastics: History, Pioneers, and Mentors of SPE CAD
   Tracy Phillips, Uniform Color Company
9:00 Keynote Presentation
   Dieter Maeder, Eckart
9:30 Novel New Yellow and Orange High Performance Inorganic Pigments
   Mark Ryan, Shepherd Color
10:00 Coffee Break (Exhibits Open) Sponsor: Clariant
10:30 Iron Oxide History
   Todd McHenry, LanXess
11:00 Innovations Introduced at Previous CAD RETEC® Conferences
   Frank Lavieri, Lansco
12:30pm Networking Lunch
   Sponsor: DuPont Titanium Technologies

**AFTERNOON SESSION**
Moderator: Jim Figaniak, LTL Color Compounders
1:30 Panel Discussion: Where we were . . . CAD History.
   Moderator: Howard Kennedy, Dominion Colour
2:30 Coffee Break Sponsor: Shepherd Color
3:00 Ensuring Halogen Free Compliance
   Robert Seely, Clariant
3:30 Advances in Organic Pigments 1962-2012
   Roger Reinicker, BASF
4:00 Maintaining UL Listing from a Global Standpoint
   Steve Goldstein, Clariant
4:30 New Technology Forum NTF Moderator: Bob Charvat
5:30- 7:30 Networking Reception
   Sponsor: Nubiola

**TUESDAY, OCTOBER 2**
7:00am 5K Fun Run/Walk for Habitat for Humanity Plastics
   (Pre-register for this event) Sponsor: Dominion Colour
7:30 Breakfast Sponsor: Silberline

**MORNING SESSION**
Moderator: Tom Rachal, Tronox
8:30 The Future of Lighting: Color, Efficiency, and Compliance
   Ann Laidlaw, X-Rite
9:00 Renew-Reduce-Reuse-Recycle-Recolor
   Jim Rediske, Lanxess
9:30 How to Get the Best from Your Carbon Black
   Natalie Harris, Columbian Chemical
10:00 Coffee Break Sponsor: Sun Chemical
10:30 Evolution of Effect Pigments Over the Last 50 Years
   Thomas Chirayil, BASF
11:00 Controlled and Quantifiable Sublimation of Plastic Resin Colorants for the Establishment of Product Selection Guidelines and Structural Prediction Profiles
   Doug Koerner, Keystone Aniline
11:30 What Do Customers Really Want? (How to Avoid Your Next Product Development Disaster)
   Howard Kennedy, Dominion Colour
12:00pm Awards Luncheon included with registration
   Sponsor: Tronox

**AFTERNOON SESSION**
Moderator: Jack Ladson, Color Consultancy
1:30 Historical Aspects of the Development of the Chloride Process for the Manufacture of Titanium Dioxide Pigments
   Austin Reid, DuPont Titanium Technologies
2:00 Ultramarine Pigments-On the Road to Perfection
   Nathan Karszes, Nubiola
2:30 Twin Screw Extruder Developments to Produce Consistent/Repeatable Concentrates
   Charles Martin, Leistritz
3:00 Closing Remarks
Survey Raffle-Grand Prize: Apple iPad (must be present to win)
The CAD Needs Your Help!

This is a progress report for Volume II “Colorant Technology”
A follow-up to Volume I “Coloring of Plastics Fundamentals”
Both publications are sponsored by the CAD.

By Robert A. (Bob) Charvat, Editor

The “Coloring of Plastics Fundamentals” Volume I, first published in 2004 has been very successful. Volume II complements Volume I, making these two volumes a complete set addressing coloring of plastics technology.

Progress to date on Volume II has been troublesome, due to many author career issues and particularly the current economy. Volume II will explore technical issues concerning coloring individual polymers on a chapter by chapter basis. Volume II will contain about 33 chapters covering many popular large volume and specialty polymers. A number of authors are already committed to specific chapters. Five completed chapters have been received by your Editor for editing; however, a number of important polymers do not have committed authors at the time of this message. This is why your Editor and the CAD are looking to our CAD members for help in completing this very important project.

I am sure there are CAD members ready and willing to step forward to write these chapters. An extensive and complete set of instructions are available to authors to make the chapter preparations as easy and trouble free as possible. Or, if you know anyone who could prepare any of the chapters listed below, please identify them for us and try to get them interested and/or committed! Authors who contribute to our CAD will leave a permanent record of their contribution and involvement in our CAD.

Contact your Editor at: rcharvat@msn.com

Won’t you give the CAD and this Editor the help they need?
We need CAD members to step up and commit to preparing a chapter for:
- Cellulosics
- Elastomers Thermosets
- Liquid Thermosets
- Fluoropolymers
- Phenolics Thermosets
- Polyethylene Terphthalates
- Diallyl Phthalates Thermosets (DAP)
- Elastomers Rubber
- Flexible Polyvinyl Chlorides (FPVC)
- Powder Thermosets
- Polycarbonates
- Polystyrenes

Wanted: Historic conference seeks members

In 2012, the Color and Appearance Division of SPE will celebrate 50 years of coloring plastics. This milestone would not have been reached without the hard work and dedication of many people. While some of these people are still actively involved in the business of coloring plastics, there are many more people who have moved on to other endeavors. The organizing committee for the 2012 SPE CAD RETEC® would like to reach out to as many legacy members of the color industry as possible.

If you know of someone who is a legacy member, we would like to share the conference details and encourage attendance. Please contact conference chairperson, Sandra Davis at sandra.p.davis@usa.dupont.com or 302-999-2540.
The Good, The Bad, & The Future Of Coloring Plastics

THE LAST 25 YEARS

By: Gary Beebe, A. Schulman, Inc.
Cleveland, Ohio
September 28 -29, 1998

As we look back over the last twenty-five years, some aspects of the world have changed a lot, and in some aspects, little is done differently. This is also true in the field of coloring plastic. Think back to the early seventies--there was Nixon with Watergate; in 1998 there is Clinton and Zippergate. Volkswagen was popular with the beetle, both in 1973 and 1998. The major differences revolve around technology changes. Remember the seventies when only a few people had microwave ovens and they cost more than a conventional oven, when a hand-held scientific calculator with some basic functions cost $200-300, manual adding machines were the standard. Early in the seventies, the inflation rate was 12 percent; there was an oil embargo and the stock market dropped about 50 percent. Hopefully, this will not be repeated.

In reviewing the last twenty-five years of the coloring of plastics, many good things have happened. Some bad things have also occurred. Most important is what lies ahead in the future. The sub-sections of coloring of plastics that will be discussed are:

* Instruments
* Software
* Sample Preparation
* Colorants
* Training and Education

Instruments:

Due to technology advances in both computers and electronics, vast improvements have been made with color instrumentation. In the seventies, spectrophotometric scans took up to one minute each, calibrations often required 30-60 minutes and were not stable over a four hour period. Instruments required up to 6 feet by 4 feet space on a table. Some instruments only provided analog output. Thus, data needed to be transferred manually off curves. Some instruments read values directly, but still needed to be transferred to a computer through a device such as a paper tape punch/reader. There often were so many moving parts to the earlier instruments that there was need for constant repair.

The good with current instrumentations is that accuracy has improved dramatically, size and weight have reduced, measurement speed has drastically increased, transfer and storage of results have radically improved. Instruments can now be portable, measure in less than one second, maintain calibration, easy to calibrate when needed, and based on computer configuration can store almost limitless number of sample data in various output formats.

What can be bad about all this new technology? Due to their ease of use, many people are now using instruments without understanding how the instrument works, what can cause variation and what the data means. The basics are often neglected and the number off the computer from the instrument is gospel. Another issue is the...
new instruments reside in a small box with little access (good for mobility, serviceability and protection of parts). The older instruments were great teaching tools of what a color measurement did. Those of you who were fortunate enough to learn on a tree dual beam Hardy Spectrophotometer will understand. Also, newer instruments tend to be less flexible if non-routine measurements need to be made.

Software:
Obviously one of the biggest improvements that has been made in systems over the last twenty-five years is software both in color measurement and color matching. In color measurement the data had to be converted from the instrument to the computer in one of various cumbersome error-prone methods. The calculations were done for individual situations once a light source, a color difference formula and viewing parameters were set.

Currently, after the measurement is made an unlimited choice of conditions, several at a time, can be selected and even graphed at a push of a button. Display of the amount of data and quality of presentation is quite remarkable.

Color matching software has progressed at an equally remarkable pace. Simple tristimulus, five or six factorial matches could take minutes of CPU processing time on an early seventies computer. At the time this was considerably fast since the alternative was hand calculating a match or using a COMIC Analyzer. Software has improved to include many choices of algorithms, sophistication in correction factors and development of base colorant file levels. Software has been designed to handle difficult optical situations such as fluorescents, metallics/pearlscents as well as traditional opaque, transparent and translucent products. There are a myriad of options of choices for calculation and outputs.

The question pops up again: where can all the bad be with all the improvements? The answer lies in the same area. Do color matchers understand what the computer is predicting as a formula? Are considerations being used to predict a balanced formula to allow for single production adjustments? In initial matching is spectrophotometric curve analysis used for least metameric predictions? These are some of the concepts which I fear are neglected at most sites due to speed and sophistication of a quick output color matching system. There is great haste to get the job done, but little time is spent on what could be the best match.

Sample Preparation:
Sample preparation (which to me means all the work needed to present a sample to the instrument) is an area I feel that not only has not made progress but has slipped in the last twenty-five years. There have been improvements in mold technology and molding techniques to improve on surface quality. But the lure of rapid measurements has made us sloppy in the color science field. When measurement time was more important we made sure the sample was clean, positioned properly and then stored properly for future use with the correct name and measurement conditions. Now the tendency is to rush through the process since the measurement/data collection takes seconds; and if something appears wrong, it can be re-done easily. There is a lot of poor data generated fast that is not caught.

Another example is in colorant file preparation. Due to lack of understanding of the individual colorant's linearity, colorant files are being set up with fifteen levels for each colorant. Just because a software program can handle fifteen levels doesn't mean you need to use fifteen levels. The number of levels needs to be determined based on the colorant's color/concentration rate of change.

Colorants:
The world of colorants has changed significantly over the last couple of decades. There have been major consolidations between suppliers and manufacturing locations. In the seventies most colorants were domestically produced. Now the products are worldwide and rationalization of manufacturing by the major colorant suppliers has taken place. In the worldwide market, suppliers from China and India are now participating.

The good of this change is more economies of scale and lower cost production techniques can be employed which should help stabilize pricing. Also with product line rationalization, customers should be able to obtain more technical support from the supplier who now is focusing their efforts.
On the bad side, there may be only one or two suppliers selling the product you are buying. Lack of supply can be an issue, and prices can increase if competition is reduced.

Another major issue with colorants over the last twenty-five years is the regulatory effect of the use or non-use of colorants. The regulatory issue hit colorants in two ways. One is with their application in products. Because of OSHA guidelines and CONEG laws, the use of colorants, such as heavy metals, require special testing when used and special disposal of waste streams and discarded final product. The difficulty of compliance has forced many users to go to other colorants as replacements. Often the cost is higher and the properties not as good with the replacements. The other regulatory effect is with the production of dyes/pigments. Due to the desire to keep waste streams from contaminating air/water/earth systems, more engineering to reduce waste streams is being employed. While this is beneficial to the environment, it adds significant costs to the production system, thus to the product costs. Also, the effects of regulation have moved production of some materials to countries where the regulatory impact is less.

Training and Education:
In the 1970's there were three schools that taught color science, two of which had MS and PhD degree programs. One was Clemson University under Professor F. T. Simon; the other was RPI headed by Professor Billmeyer. Dr. Allen at Lehigh University also taught courses and did research in color. As these professors left or retired, the programs were not continued. Presently, there is only one location to get advanced education in color, Rochester Institute of Technology (with the focus on photographic, printing and video). There is a two-year program established for the coloring of plastics at Terra Community College which CAD/SPE has heavily supported.

Equally throughout the years and even more recently in the late eighties and nineties, companies have re-engineered their staffs and support groups. Color technology has been reduced at many major resin suppliers and resin users. The gap appears to be being filled by the concentrate manufacturers who are the front-line users of the colorant.

There is pressure to get more done in less time. With the advent of very quick responsive instruments, the fundamental knowledge of what is happening scientifically during the measurement is often not understood. The knowledge of how an instrument works, what the color scales mean, where and how much variation is normal, when the instrument needs calibration or repair, what can affect a measurement, how to interpret the data, and the use of colorant curve analysis are not being taught as fundamentals at many color laboratories.

This technology loss appears across the board in QC, Product Development (Color Matching), Colorant Selection and Customer Development. People in the coloring of plastics industry are retiring every year and I do not believe there are enough new individuals being trained with the basic and fundamental principles of color science and colorant technology to maintain efficient knowledgeable color laboratories. In my opinion one of the causes is the lack of senior management to recognize the value this technology brings to their product lines. Unfortunately, that recognition will probably only take place when business is lost. Those of us who have worked in color for awhile know it takes years to train a person in the field of coloring plastics.

Future:
* Instruments
As technology increases, the coloring of plastics will benefit. The instruments made today are precise and accurate enough to consistently measure color. Special effects still require instrument understanding to approach replicating what the eye detects. One concept many researchers/scientists/engineers often forget: the instrument replicates what the reflected or transmitted light from the sample that corresponds with the eye, calculations then approximate lighting and viewing conditions. No instrument yet has been able to capture the total appearance of the object that the eye can. In most cases, the instruments can come very close to human vision. The instruments can repeat much better than the eye and remember better than the eye/brain, but the person using their vision is often the final decision maker. The instrument supplier market is very competitive with all suppliers having state-of-the-art performance. It is expected there may be some consolidation in the future.

continued on page 13
* Software
In the eighties, there were advances in programming that allowed algorithms and improvements to be developed to help the accuracy of initial shots and batch corrections. Most software packages now can adequately handle opaque and transparent matches. Some can do a reasonable job on translucents/fluorescents/metallics/pearlescents. In the nineties, the emphasis has been on user friendliness of the applications. With the onset of Windows/Windows 95 the software is quicker to learn and easier to use. I would expect incremental improvements and possible branching out to some of the more challenging applications by some programmers in the future.

* Sample Preparation
I do not see an improvement in the future unless the training and education side of the color technology improves. Although the vast majority of samples generated are satisfactory, it's the errant ones that slip by due to lack of understanding of general scientific color principles that will cause the majority of the problems.

* Colorants
The trends affecting colorants from regulatory issues will continue. These will cause increasing costs and the colorant suppliers to rationalize their product line to focus on where they can compete in the lowest costs venue. This may cause less competition and more difficulties with supply and higher costs. The unknown effect is what production in Asia and India will have in the immediate future.

* Training /Education
With all the consolidation/re-engineering that is taking place across industry it is not likely support technologies such as color will grow. It is more likely that color technology will find its place more at businesses which are based in color (pigment and dye suppliers, concentrate suppliers) rather than resin suppliers and end users. The training and education of color science principles and coloring of plastics technology will be dictated by these companies. They will be a major determining factor as to reversing the trend of providing qualified personnel in color. It will be successful when upper management is convinced of the value that color brings to its business.

Editor's Note: Terra State Community College still provides training for industry members in color science principles both at Terra's campus and through internet classes. See ad for internet classes in this newsletter.

BOARD MINUTES

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.

Click here for the link to view: http://www.specad.org/index.php?navid=28
COUNCILOR’S REPORT

The Council meetings at ANTEC® were held on April 1, 2012 in Orlando, FL. Two meetings were held, the morning meeting being the completion of the 2011/2012 Council year and the afternoon meeting was the first meeting of the 2012/2013 year. This summary covers both meetings. The change in leadership of SPE takes place at the ANTEC® Council meetings, so there is an opportunity to recognize the leadership completing their terms and a look forward to the new leadership. CAD was represented by Roger Reinicker as a proxy for the elected Councilor, Sandra Davis.

These meetings offered the Councilors their first opportunity to meet the new CEO for SPE, Willem De Vos, who replaced former Executive Director, Susan Oderwald in January 2012.

Membership has continued to show growth as 282 new members were added during 2011 calendar year. Membership was 14,806 on 1/1/2011 and 15,088 on 1/1/2012. SPE has an 81% retention rate which is about the industry average. This continues the slight positive trend since 2008 after disastrous membership drop off due to the recession. New members are coming largely from (1) acquisition campaigns and (2) conferences. USA members account for 76%, international 24%. Europe and Canada respectively are the largest international groups.

Financially, 2011 was a pretty good year for net revenues, better than budget, but a poor year for cash flow. The last four years look like this with regard to net profits:

- 2008: -$292,000
- 2009: -$120,000
- 2010: $27,000
- 2011: $155,000

Top three revenue sources were dues ($1.6MM), ANTEC® Boston ($0.79MM) and Journal income ($0.615MM). Other income came from Eurotec®, other conferences, and webinars.

It was reported that the November 2011 EUROTEC® was a positive experience with 333 attendees, 91 new members, and 205 presentations. Net proceeds were $65,000. For Orlando ANTEC®, SPE expects 1300 to 1400 attendees (about average for the last four years) with 623 papers (somewhat low vs. average).

There were some minor changes to the bylaws to account for the geographic change of the ISPE headquarters and a new title for the executive director. Earl Balthazar and Bruce Mulholland were recognized for their contributions to the policies and bylaws committee.

There is an ongoing effort to increase the SPE in social media. It was reported that the Linked-In group for SPE has some 16,000 members. Additionally, there are two new mobile apps, one for ANTEC®/NSPE and another for plastic products resources (iPhone app by Multi-vue where you pay to be listed).

Sincerely,

Sandra Davis
CAD Councilor
HOW DID IT ALL COME ABOUT?
By Bob Charvat

It all began in late 1960. How do I know? I was there at the beginning!

The Society of Plastics Engineers (SPE) up until 1960 was organized geographically by groups called “Sections”. The SPE leadership started to think that adding “Technical Groups” based upon specific technologies, similar to the American Chemical Society, would add a more professional look to the SPE. These proposed entities would be called “Professional Activities Groups” (PAG’s). Over the years the PAG’s morphed into the SPE Divisions as we know them today.

In the early 1960s, Maret A. Bacci, a SPE member, thought it would be a good idea to promote a “Coloring of Plastics” technical conference within the SPE patterned after the PAG concept. Bacci called upon a number of SPE members working in the coloring of plastics field to meet with him in Rochester, New York to discuss and plan a potential technical conference entitled “Coloring of Plastics”. Four SPE members responded to Maret. A meeting was scheduled in Rochester in late 1960. The four members joined Maret Bacci at the Eastman Chemical Company offices in Rochester on a cold winter day. Present were:

Maret A. Bacci, Vogt Manufacturing Company, Rochester, New York (Now deceased)
John Dickenson, Harshaw Chemical Company, Cleveland, Ohio (Now deceased)
Warren Slack, Harshaw Chemical Company, Louisville, Kentucky (Now deceased)
John T. Bent, Eastman Chemical Products, Inc., Rochester, New York (Now deceased)
Robert A. Charvat, Ferro Corporation, Cleveland, Ohio (The last one standing and still kicking!)

The group decided to plan a “Coloring of Plastics” technical conference in the Rochester area as soon as possible. A 1962 date was agreed upon, so the planning began. The next order of business was establishing a funded treasury to cover RETEC® expenses. The solution? Each of the five people present put a ten dollar bill on the table. Therefore, the treasury started with the incredible total of $50.00! Next, members of the Rochester Section, as the sponsoring section, were recruited to fill out an operating RETEC® Committee. Through the hard work of these people, along with other SPE members, the very first “COLORING OF PLASTICS” one day RETEC® was held in the Rochester Manger Hotel on April 12, 1962.

The local committee members successfully developing the 1962 RETEC® were:
Maret A. Bacci – Chairman (Also the first PAG Chair)
John T. Bent – Program
Raymond W. Kruse – House
A. Mervin Knessy, Jr. – Registration
Richard J. Melville – Publicity and Printing
Vincent S. Venturelli – Treasurer

Speakers enlisted to present technical papers were a who’s who of color in 1962. They were,

Ralph M. Evans, Eastman Kodak Company “SEEING LIGHT AND COLOR” Known world-wide for his knowledge on how we see color. A colorful slide show.
G. H. Moade, Jr., AT&T “TELEPHONES IN COLOR” Describing how the telephone went from only black to a palette of vibrant colors.
T. G. O’Brien, IBM “COLOR CAN BE CONTROLLED” Addressing the mathematics of color and how we perceive it.
George W. Ingle, Monsanto Chemical Company “COLORANTS FOR PLASTICS USED IN CONTACT WITH FOODS” A technical paper addressing colorants for food contact, dealing with FDA and approvals so important today.
Hal-Curtis Felsher and Walter J. Hanau, Claremont Polychemical Corporation “COLOR PRINCIPLES AND COLOR EFFECTS” A technical paper exploring metallic, pearlescent and special effect colorants that are so important to the appearance of plastic products today.
Hugh R. Davidson and Henry Hemmendinger, Davidson and Hemmendinger “USE OF INSTRUMENTATION IN COLOR MATCHING PROBLEMS” A technical paper addressing the use of instrumental color measurement and a dedicated computer “COMIC” using computer algorithm calculations to solve color problems.
Fred W. Billmeyer, Jr., E. I. du Pont de Nemours and Company, Inc. “AN OBJECTIVE APPROACH TO COLORING” Proposing how spectrophotometric measurements of colored plastics samples coupled with appropriate calculations may offer a procedure making color match acceptability truly objective.

A quick review of the authors and their presentations listed here brings about the startling conclusion that the coloring of plastics industry is still addressing these very same issues today. These papers with a few variations could be delivered at our 50th RETEC® and be considered completely relevant in 2012. This leads to the obvious conclusion. These issues are very complex and resistant to total or complete resolution, even as the industry as a whole continues to develop and mature.

So this is how it all began! The 1962 RETEC® Number I started a series that will celebrate RETEC® Number 50 this Fall. Every one of the RETEC®’s to date have been successful no matter the criteria used. Members of the Color and Appearance Division should be very proud of our achievements.

So, this is how the PAG became the Color and Appearance Division (CAD) as we know it today. However, there are a number of other notable times and/or occurrences that took place over those early years requiring documentation so they are not lost in the mists of our history.

The number of members making up the COLORING OF PLASTICS PAG “Board of Directors” (BOD), early on, was quite small. For a number of years, the BOD had eight to ten members total. Additionally, the officers of the BOD served two year terms. It was a standing comical story among the BOD members; the first year of office was to understand the office with the second year required to get something accomplished.

The Vice Chair was also the Program Chair. This put a special burden on the Vice Chair to finish his or her two year term before running out of friends badgered to deliver technical papers at ANTEC®’s and RETEC®’s during the Vice Chair’s two year term of office.

In the 1968 - 1970 time-frames the SPE made another name change for the technical groups (PAG’s). All SPE operating PAG’s were transformed into Divisions. The “Coloring of Plastics” PAG eventually transitioned into the “Color and Appearance Division” (CAD).

There is one other person deserving recognition for his considerable effort while serving as the first CAD Chair. That person is William V. (Bill) Longley. Bill assumed the leadership as the first Chair of the newly formed “Color and Appearance Division” in 1970. He was responsible for all the transition work required to bring the new CAD online. I know this to be true since I was the last PAG Chair as Bill succeeded me. His work on this transition was remarkable!

There may be more interesting facts I can squeeze out of my overworked brain, but we will leave this for another time. I hope you found these tid-bits of our coloring of plastics history interesting and enjoyable.
Thank you Sponsors!

A special thanks to our sponsors who make many of the events for the 50th Anniversary conference possible.

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Published by The Color and Appearance Division of the Society of Plastics Engineers
SOCIETY OF PLASTICS ENGINEERS COLOR & APPEARANCE DIVISION

2012 RETEC Golf Outing
September 30th, 2012

<table>
<thead>
<tr>
<th>SCHEDULE (EST)</th>
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</thead>
<tbody>
<tr>
<td>Registration: 9:00 - 10:15 am</td>
</tr>
<tr>
<td>Shotgun Start: 10:30 am</td>
</tr>
<tr>
<td>Awards: CAD RETEC®</td>
</tr>
<tr>
<td>Welcoming Reception</td>
</tr>
<tr>
<td>Price: $100.00 per golfer</td>
</tr>
<tr>
<td>Includes:</td>
</tr>
<tr>
<td>Warm ups on the Range</td>
</tr>
<tr>
<td>Green Fees</td>
</tr>
<tr>
<td>Cart Fee</td>
</tr>
<tr>
<td>Scramble format</td>
</tr>
<tr>
<td>Awards (hole prizes)</td>
</tr>
<tr>
<td>Hamburger / Hotdog</td>
</tr>
</tbody>
</table>

Covered Bridge is a Fuzzy Zoeller designed and owned 18-hole course nestled on a gently rolling plain at the foot of Southern Indiana’s famous Floyds Knobs. Each hole has been laid out to emphasize the natural beauty of the landscape and panorama. This par 72 circuit features five lakes, a meandering creek and is pleasantly forested for a challenging yet scenic round of golf.

Go to http://www.specad.org and click on the CAD RETEC® link for signups.
Questions please contact:
mark.tyler@ticona.com or Phone - 859.372.3221

Course Location
Covered Bridge Golf Club
12510 Covered Bridge Road
Sellersburg, IN 47172
812-246-8886
Transportation to the course made available by Eckart Effect Pigments

Lunch will be provided around noon at clubhouse or brought to you on the course

Go to http://www.specad.org and click on the CAD RETEC® link for signups.
Questions? Please contact: Email - mark.tyler@ticona.com or Phone - 859.372.3221
EXHIBITORS
(list as of August 7, 2012)

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Applied Market Information
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Brabender Technologies, Inc.
Cappelle Inc.
Cinci Chemicals America, LLC
Clariant
Coperion Corporation
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Modern Dispersions Inc.
Nubiola USA
Paramount Colors, Inc.
Rockwood Pigments
Sun Chemical
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Tomatec America
Tronox LLC

INVITATION 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.
CALL FOR PAPERS
The Society of Plastics Engineers (SPE) invites you to present a paper at its second EUROTEC® technical conference in Lyon, France. This two-day event will be attended by several hundred industry professionals who are interested in learning about the latest global developments in plastics. SPE is inviting speakers to present papers at this conference in the following areas:

- Automotive
- Color & Appearance
- Extrusion/Flexible/Rigid Packaging
- Injection Molding/Micro Molding
- Mold Making & Mold Design
- New Technology & Innovative Polymer Forums
- Process Simulation & Controls/Applied Rheology
- Rapid Prototyping
- Biopolymers & Sustainability
- Composites
- Foaming
- Joining of Plastics
- Nano Composites
- Blow Molding
- Decorating & Assembly
- General Business, Mkg. & Mgmt.
- Medical Plastics & Polymers
- Polymer Modifiers & Additives
- Rapid Design & Development,
  Thermoforming

We request a 100-word abstract outlining the topic of your paper, followed by a 5- to 6-page technical paper. Your paper will be published in the conference proceedings and in the Society’s online technical library. Your presentation time will be 30 minutes. Please submit your technical abstract and paper online at: Online Submission Site

ABSTRACT/PAPER DEADLINE: November 29, 2012 - 5 p.m. Eastern

Submit your abstract and paper at the same time. Do not send your abstract separately. Previously presented/published papers may be eligible for submission.

Presentation Styles: Poster or Podium

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EUROTEC® 2013
Cite Congress Exhibition Center
July 4-5, 2013 Lyon, France

YOUR COMPANY, OUR DIVISION
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 Phone: 864.968.2426 Email: Sharyl_Reid@usaschulman.com.
On-Line Plastics and Coloring of Plastics at Terra State Community College

A very distinctive feature of the Terra plastics program is its ability to provide “distance learning” (online) courses to students who may reside too far from the Fremont, Ohio campus to participate in full time day or evening classroom activities. This distance learning program has successfully served students globally, as well as locally, for several years.

We all know people within the industry (technicians, sales staff, new hires, etc.) that have no color education to speak of. One aspect of Terra’s program that can benefit many of the newer, or under-educated, members of our industry is this internet based, three course certificate program. It is a relatively low cost, no travel, flexible program that the employee can complete anywhere, on their schedule. The three courses provide solid background knowledge for anyone working in the many segments of the coloring of plastics industry. The three courses are:

- **Introduction to Color**
  - Introductory course on color theory
  - Basic background knowledge for anyone working with color

- **Colorants for Plastics**
  - The study of colorant types and their incorporation into polymer materials
  - More in depth treatment than in Intro Class

- **Introduction to Plastics**
  - Introductory course on plastics
  - Polymer types, properties and processing

Courses are an excellent opportunity for newer color matchers, quality control technicians, production technicians, and others to learn more about the coloring of plastics. These courses are also good for people with industry experience, since many of them have learned on-the-job. This is a good opportunity for them to learn the theory behind what they do every day. Students completing this certificate can expect benefits including:

- Quicker color matches
- Better understanding of pigments and their use
- Prevention color problems
- Solve color problems quicker
- Quicker batch corrections in production
- Better understanding of color at processors
- Cost savings

For more information, contact Jamie Przybylski, Program Professor at 419.559.2459 or toll free 866.AT.TERRA, ext. 2459 or email jprzybylski@terra.edu

**Distance Learning Courses Offered**

**Section VI. PET 1100 Introduction to Plastics** (3 Credits)
- Fees: $400 Ohio students/$600 out-of-state
- Books: approximately $200
- Offered Fall 2012: (August 20—December 14)
- Offered Spring 2013: (January 14—May 9)

**Section VI. PET 1240 Introduction to Color** (3 Credits)
- Fees: $400 Ohio students/$600 out-of-state
- Books: approximately $200
- Offered Fall 2012: (August 20—December 14)
- Offered Spring 2013: (January 14—December 14)

**Section VI. PET 2320 Colorants for Plastics** (4 Credits)
- Fees: $500 Ohio students/$790 out-of-state
- Books: approximately $150
- Offered Spring 2013: (January 14—May 9)
CONNECT WITH SPE CAD VIA SOCIAL MEDIA

TWEET AT THE CAD RETEC® CONFERENCE

If you or your company are active on Twitter, simply insert the #cadretec hashtag into your tweets to have them automatically posted to followers of CADRETEC®.

www.twitter.com/cadretec

No Twitter Account?
Here’s how to get started:
Are you a NEW Twitter user and want to start sending tweets from your phone?
It’s easy! Just text the word START to phone number 404-404 from your phone. Twitter will ask you to choose a Twitter name. Twitter will send a few immediate follow-up messages to help you complete the setup via your phone. Then, you are ready to tweet.

Once your account is set up, start following CADRETEC to receive the latest tweets to CADRETEC. From your phone, text the words “Follow CADRETEC” to phone number 404-404. You have now turned on CADRETEC updates on your phone.

Access your account later from the Web. If you’ve been using Twitter from the phone, it’s easy to set up your web login. Just go to http://twitter.com/account/complete and enter your phone number; and a verification code will be sent to your phone. Enter the code on the web and you’re in!

For CAD RETEC® Attendees, Sponsors, Speakers, and Exhibitors - While you are at the conference, follow CADRETEC® on Twitter to get the latest on SPE CAD’s annual Topcon Conference. This Twitter feed is designed specifically for conference participants during the show. Use this forum to tweet fellow attendees about “must sees” at the conference and to receive updates on events and current happenings.

Join SPECAD’s Group On LinkedIn to network with industry peers, participate in group discussions of industry and technical topics, find job opportunities, and get the latest division and conference announcements.

Group Name: SPE Color & Appearance Division
Group ID 152108

www.linkedin.com/groups?gid=152108

Become a fan of SPECAD’s Group page on Facebook. If you prefer Facebook over LinkedIn and Twitter, this group has been set up as an alternate communications tool.

Search Groups and join us:
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The purpose of the triple “x” is to render the automated spam grabbers useless.

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