Greetings to you all. I find myself in the rather peculiar position of having to write this Chairman’s Message to you rather than pester the existing Chairman for it (as I used to have to do when I served as your Newsletter Editor). This, therefore, is the first of three such letters I will write to you as CAD Chairman. I am writing this to a pretty big audience. The total membership of CAD is just over 1300 members as of June. I am pleased that this is so – it’s a pretty large division with members all over the world. This became evident during the most recent elections for the CAD Board of Directors. Ballots were sent to 36 countries other than the US, including Iceland, Luxembourg, Iran, Angola, New Zealand, the Czech Republic – well, you get the idea. That also means this Newsletter will be going out to those countries. The CAD is truly an international organization. Becoming Chairman of this diverse group is to me quite an honor and a privilege.

I have some big shoes to fill. The CAD has had the benefit of having had an outstanding group of people filling the Chair position. Through their stewardship the CAD has been very successful, and done some very good things for the plastic coloring world. The goal of SPE and particularly the CAD is education. Regular successful programs at RETECs and ANTECs and the color matching degree available at Terra Community College are in no small part due to the efforts and contributions of the CAD as a whole, and individual members as well. I am still amazed that an entire college curriculum with a degree in plastic coloring was created because of the vision of one particular CAD Board member, and the financial support of the CAD Board as a whole. The CAD has contributed nearly $200,000 over the last decade or so to help this program get off the ground. We are now diligently working to create an endowment fund that will allow us to regularly grant scholarships to worthy students. Despite the difficulties in investing money over the last couple of years, we are still nearly 80% of the way to our goal of $250,000. This money will be used to create and fund these scholarships on an ongoing basis every year. Even this newsletter, with the fabulous articles that appear in it from issue to issue, is part of this educational effort. This work, toward achieving our goal – education in the field of plastic coloring – has been successful because of the diligent efforts of the many volunteer Board members, and particularly the various Chairpersons who have preceded me. As I look into the future of the CAD, I am reminded of the quote from Isaac Newton - “If I have seen farther, it is because I have stood on the backs of giants”. The CAD is an organization that has had many outstanding contributors now and in the past, and judging from the extreme high quality of my fellow Board members we will continue to succeed in the future.

Bob Trinklein
Robert Trinklein, CAD Chairperson
# Councilor's Report

Registration at ANTEC was 2952, including participants in the seminars. A total of 255 registrants attended 22 Society seminars.

Incoming President Karen Winkler is setting forth a challenge to the members of SPE in the form of a mantra: “Take Pride, Give Back.” Ms. Winkler presented the 2004-2005 operating plan, which focused on four main strategic issues for the Society. These issues and the main initiatives in the 2004-2005 year are summarized below:

Understanding Industry
- Technical Advisory Board
- Continual updating on member needs
- Reflecting Industry
- AIM membership campaign
- New communities with more support & recognition (Pinnacle Award)
- Encouraging participation through enhanced value

Serving Industry
- Projects from Technical Advisory Board
- More products targeted to specific audiences (ATOM Team)
- New channels to market for current products
- Online offerings to encourage global participation

Showing Industry
- More visibility through press activities
- Common communications programs
- Internal communications – Leadership Weekend, E-bulletins, Webcasts

**SPE's New Executive Director**

Susan Oderwald, who had been serving as Deputy Executive Director, was appointed as SPE's new Executive Director. She officially began her new role at this meeting.

**From the Council floor**

The Council was advised of the formation of two new European SIG's: Radiation Processing of Polymers and Rapid Design, Engineering and Mold Making.

*continued on page 3*
In addition to the recognition of the retiring administration, two new awards were given out. The Michael Cappellletti Excellence Award was given to Donna Davis and Susan Oederwald and the James Toner Service Excellence Award was given to Gail Bristol.

Outgoing President Donna Davis thanked her Executive Committee for their hard work. Incoming President Karen Winkler introduced her Executive Committee. New Executive Committee Vice Presidents are: Paul Andersen, Sam McCord and John Szymbankiewicz. Vicki Flaris is the 2004-2005 Treasurer and Hoa Pham is the 2004-2005 Secretary.

There was a Moment of Silence in memory of Mr. Denes Hunkar who passed away on April 28 at age 67. He was the co-founder of the Blow Molding Division and the recipient of the SPE International Award for Engineering and Technology in 1991 and the SPE International Award for Business Management in 1992.

Presentations
Color & Appearance Division $2,000 Student Travel Fund
and $1,000 SPE Foundation
Injection Molding Division $1,000 SPE Foundation
Thermoplastic Materials & Foams Division $5,000 for the Scholarship Fund
Thermoset Division $2,100 for Membership

Next Council Meeting
The next meeting of the Council is scheduled for October 9, 2004 in Cleveland, Ohio.

Austin Reid, CAD Councilor

WHO CAN HELP YOU
SOCIETY OF PLASTICS ENGINEERS, INC.
BOX 0403, BROOKFIELD, CT 06804-0403

ANTEC conference management
Lesley Kyle 203.740.5452
Antec booth sales
Deb Cawley 203.740.5413
ANTEC paper submission Awards
Tara Munsen 203.740.5472
Chase Husky Awards
Laurie McDougal 203.740.5432
Fellow, Honor Society, STRETCH,
Debra Ravetto 203.740.5431
PRIDE/Outstanding Division Awards
Essay Contest, HSM, Newsletter, STAR Awards
Tricia McKnight 203.740.5430
International awards program
Gail Bristol 203.740.5447
Book orders
Louann Noll 203.740.5449
Change of address/transfers
Customer Relations 203.740.5403
Council Liaison
Marie Salzo 203.740.5422
Debra Ravetto 203.740.5431
Divisions, SIGs, Student Chapters
Customer Relations
Tara Munsen 203.740.5472
Dues billing & payments
Jackie Memoli 203.740.5411
Debra Ravetto 203.740.5428
E-learning center
Bonnie Kaczowski 203.740.5428
Employment & classified ads
Customer Relations
Tara Munsen 203.740.5472
Journal/magazine orders
Jackie Memoli 203.740.5411
Membership processing/questions
Bonnie Kaczowski 203.740.5428
Membership programs/retention
Customer Relations
Tara Munsen 203.740.5472
Plastics Engineering magazine advertisements
Clive Bullard 203.740.5427
Section & Division billing
Dolores Pruefer 203.740.5446
Section & Division investment program
Doris Thoren 203.740.5444
Section administration
Tricia McKnight 203.740.5430
Seminar program & in-plant training
Laurie McDougal 203.740.5432
Seminar registration
Martha Charris 203.740.5458
SPE training products & bookstore
Nancy Herdegen 203.740.5440
The SPE Foundation scholarships & grants
Gail Bristol 203.740.5447
Topical conference planning
Lesley Kyle 203.740.5452
Topical conference registration
Deb Cawley 203.740.5413
Website
Deb Daily 203.740.5468

lskyle@4spe.org
dacawley@4spe.org
tlthoren@4spe.org
lmsalzo@4spe.org
lmcrook@4spe.org
dravetto@4spe.org
tmcknight@4spe.org
grbristol@4spe.org
lsnoll@4spe.org
membership@4spe.org
mcsalzo@4spe.org
mcmemoli@4spe.org
bakaczowski@4spe.org
member@4spe.org
tlthoren@4spe.org
mcmemoli@4spe.org
mcmemoli@4spe.org
mlcharris@4spe.org
nbherdegen@4spe.org
gdacawley@4spe.org
lskyle@4spe.org
dacawley@4spe.org
lgspca@4spe.org

BOARD OF DIRECTORS MEETING MINUTES
Wednesday, January 20, 2004 - Marriott Hotel - Marco Island, FL

OPENING/WELCOME
SHARON EHRL
The meeting commenced at 8:15 am with a welcome from Sharon Ehr. She asked Roger Reiniker to update the list of delinquent members. Roger sent a list to around and asked that each BOD member take a sheet to verify if person was still active. Sharon then called on Bob Trinkeln. Bob spoke about the movement of the officers up on the Executive committee. Steve Goldstein made a motion to accept the moves. Bob Charvat seconded. Bob asked the Board Members to consider possible nomination for Board Secretary. Bob said that we would come back to that later on in the meeting.

SECRETARY'S REPORT
DAVE JOHNSON
Motion was made to accept the minutes as written with one exception: it is “Sharon Ehr” not “Her”. Motion was seconded. Minutes of the last meeting were approved.

TREASURER'S REPORT
BRUCE MULHOLLAND
Bruce Mulholland stated that we have $193,693.22 in our Endowment Fund. Our Income Tax form was mailed by the November 15, 2003 deadline. The Treasurer's report was presented. Motion was made to accept the report. Motion passed.

COUNCILOR'S REPORT
Austin was not present. Sandy Davis gave his report. The Council of the Whole met in Charlotte, NC on October 25, 2003, rescheduled from September due to Hurricane Isabel. This was a well-attended and very interactive meeting, with a great deal of spirited discussion throughout the day.

Dave Arndt of Visteon provided an update on RETEC/TOPCON activities. He noted that these conferences are the engine of growth for SPE, but also pointed out that despite the existence of 80 Sections and 20 Divisions, only thirteen RETEC/TOPCONs were being conducted in 2003. Some of the largest divisions in SPE do not conduct RETEC/TOPCONs. Of the thirteen to be held in 2003, expected net revenue over expenses of 725% was predicted.

ANTEC TECHNICAL PROGRAM COMMITTEE
BRUCE MULHOLLAND
ANTEC 2004 (Chicago, IL) – Jim Figaniak and Sharon Ehr. Sharon verified that the Decorating Division program was very different than ours and that we would not be doing a joint session. Jim Figaniak said he had participated in the Matrix Meeting and that 9 papers were being reviewed. He stressed the need for the presenters to be registered. Dave Johnson said he had not received any papers to review. Sharon offered that there was not enough time to get them out. Bruce asked if we should have a “keynote speaker” and that he had Hugh Davidson in mind. Check on health. Ralph Stanzio was suggested as an alternate. Board Meeting will be on Sunday.
ANTEC 2005 (Boston, MA) – Dave Johnson & Barb Parker No activity at this time. Dave was reminded that he or Barb need to attend the ANTEC Meeting in Chicago (For Pride report). Matrix Conference call is in January and that he or Barb needs to be present (on line).
ANTEC 2006 (Charlotte, NC) – Sharyl Reid & Steve Goldstein No activity at this time.

ANTEC TECHNICAL PROGRAM COMMITTEE
SANDRA DAVIS
ANTEC 2003 (Atlanta, GA) – Tracy Phillips
Tracy Phillips was congratulated on the success of the 2003 RETEC in Atlanta. She stated approximate income is $203,373.15 and expenditures were approximately $110,317.59 with profits about $93,000, but that not all the financial business was done. 420 people attended. One downside was the cost for the speakers to attend the Conference and that several “well-known” people were there who did not pay to attend.
ANTEC 2004 (Marco Island, FL) – Sandra Davis
The January 2004 BOD Meeting was held at the Marriott Hotel in Marco Island, FL to review the 2004 RETEC Site. There are concerns about the Tabletop exhibition areas. 13 papers have been suggested with some firm. Several members made some suggestions for topics. Conference dates are September 19-21, 2004. Some discussion on “Pre-prints and CDs.” The South Florida Section has asked to help. Discussion followed on what to do. Motion was made and passed to allow Sandra to make decision after discussing more fully with the SF Section. Some more discussion was allotted to the Speakers’ pay issue. Motion was made to allow one free registration for the “presenters only” at Future Conferences. Motion passed. Frank Lavietis is in charge of the Fishing and Scott Heitzman will oversee the Golf.

continued on page 6
Huntsman Tioxide

A World Of Experience

4575 Weaver Parkway
Suite 100
Warrenceville, Illinois 60555

Tel: 630.836.2400
Fax: 630.836.1681
1 800 FOR TiO2

www.huntsman-tioxide.com

Bayer Chemicals

A complete line of Dyestuffs, Inorganic Pigments and Organic Pigments for Plastics & Synthetic Fibers

Bayer Chemicals Corporation
100 Bayer Road, Pittsburgh, PA 15205
412-777-3939 • www.BayerChemicalsUS.com

Maybe it's time you expected more

Quality pigments for the plastics industry

515 Consumers Rd., 7th Floor
Toronto, ON Canada
M2J 4Z2
Tel: 416-791-4200
www.dominioncolour.com

Get a grip on your color.

- portable, benchtop and non-contact
- spectrophotometers color quality assurance and formulation software

DuPont Ti-Pure® titanium dioxide

Polymers, Light & Science

Polymers, Light and the Science of TiO2

DuPont Titanium Technologies
800.441.9485
www.titanium.dupont.com

Maybe it's time you expected more

Quality pigments for the plastics industry

515 Consumers Rd., 7th Floor
Toronto, ON Canada
M2J 4Z2
Tel: 416-791-4200
www.dominioncolour.com

Get a grip on your color.

- portable, benchtop and non-contact
- spectrophotometers color quality assurance and formulation software

Contact: Norman Finn, Colour Tone Masterbatch Limited
Pant Glas Farm Industrial Estate, Newport Road, Bettws, Wales CF83 B8J, UK
Tel: +44 (0) 2920 888910 Fax: +44 (0) 2920 868487
email@colourtone-masterbatch.co.uk
www.colourtone-masterbatch.co.uk

DuPont™ Ti-Pure®

The miracles of science

Manufacturing & commercial license/technology agreements available for Vynacol PVC. The world's first, polymer-specific masterbatch system for rigid PVC.
COLOR & APPEARANCE DIVISION BOARD OF DIRECTORS MEETING MINUTES (CONTINUED)

continued from page 4

RETEC 2005 (New Orleans, LA) – Earl Balthazar
Earl reiterated the contract for the 2005 RETEC at the Fairmont has been approved by SPE. He has called on several members to work on his staff and is currently working on the “logo.” “You can’t sing the blues if the World is Full of Color”. Dates are September 26-28, 2005.

RETEC 2006 (Cincinnati, OH) – Bruce Mulholland/Scott Heitzman
Dates for Conference are September 17-19, 2006. Scott Heitzman has proposed a contract in hand. He is to get together with several Board members to review it.

RETEC 2007 (San Antonio, TX) – Tim Reilly
Tim said he only got interest from the Marriott Hotel in San Antonio after Lesley Kyle called her contact ($174/night). Hyatt responded with $159/night. Discussion followed on the possibility to hold the Summer Board Meeting in San Antonio. Dates are tentatively October 1-2, 2007 which miss major religious holidays.

EDUCATION COMMITTEE
BOB CHARYAT
In summary:
CAREER CLEARINGHOUSE - light activity. My list of companies looking for personnel is short.
TERRA COMMUNITY COLLEGE - Terra and all other college level institutions around the country are continuing their budget battles, being very careful in budgeting and in developing new programs. The Terra Color Program is doing OK so far as one of the more recognized programs. Consultations with the new college President are planned. Terra Community College enrollments are up slightly for the Winter Quarter. The Program to help sponsor two out-of-town full time students into the “Coloring of Plastics” program is slowly moving forward. The second batch of scanned Coloring of Plastics RETEC preprint papers are finished. The Terra Lab is still looking for the following:
• A spiral flow injection mold
• A lab-size twin-screw extruder
• Brabender Torque Rheometer extruder barrel
• Multiple cavity color chip mold
NORTHAMPTON COMMUNITY COLLEGE, BETHLEHEM, PA - Pentz is aware the CAD would support the activity in any way we can and will let us know when there is any forward movement.


SPEAKERS LIST (BUREAU) - Next step is from SPE HQ. This project is still a work in progress at HQ.

NEWSLETTER COMMITTEE
BOB TRINKLEIN/SHARYL REID
Bob’s last Newsletter is out. He asked for articles for Barb and felt the paper is in good hands. He called Tom Delutric about Newsletter Contest, but Tom seemed unsure about what to send. Motion was made to allow Barb to join other Divisions so that she could receive their Newsletters. It passed. Cost will be approximately $120.

ELECTION FOR SECRETARY
BOB TRINKLEIN
Sharyl Reid, Scott Heitzmann, Jim Figaniak and Tim Lewis were nominated for the position of Board Secretary to begin their term at the 2004 ANTEC. Ballots were cast and Sharyl Reid won.

CAD WEBSITE
JOE CAMERON
Bill Dawes has kept the Website up-to-date. Joe suggested that we put the ANTEC program on the site when it has been formalized. It was also suggested that the RETEC info have the program and driving directions for Marco Island be on the site. Steve Goldstein’s problems have been resolved and he is able to get into “ASK PIP”. Question was asked about the up-link to Terra Community College; Jamie said the College is slow to get the work done. Bill Dawes will be asked to set up the web sight to accept Electronic Registration for the up-coming RETEC, including payment. Will need to pay for the Security of the sight.

ENDOWMENT COMMITTEE
JOHNNY SUTHERS
The current balance in the Endowment is about $193,693.22. Goal is to get to $250,000 and then use the interest for scholarships. Hope to generate about $20,000 for the scholarships. Bruce to see Johnny has access to the money. Motion was made to put the 2003 RETEC Profits (about $33,000) into the Scholarship Fund.

AWARDS COMMITTEE
TERRY GOLDING
Bruce Mulholland’s nomination for Fellow of the Society was accepted. Austin Reid’s nomination was accepted for Honored Service Member. The details of the Awards Committee report were included as attachment. Terry bought up the Best Paper Award. Based on the judging during RETEC 2003, he felt the award should be given to two papers. Discussion followed. Motion was made to award 2 Best Papers for the 2003 RETEC with $500 to be awarded to each presenter. Motion passed. Motion was made to change “Best Paper” to “Outstanding Paper.” Motion passed.

continued on page 7
COLOR ADVISORY GROUP
BRIAN WEST
Chuck Lette spoke to the group on the agreement of color measuring instruments.

PUBLIC INTEREST COMMITTEE
GARY CONRAD
Gary reviewed the survey data from the just completed RETEC. 105 responses. We have 15 potential Board members, a possible 22 future paper presenters and 23 companies interested in advertising in the Newsletter. Gary read some of the comments, most say good things. Darren Sutter of Washington Penn Plastics won the Digital Camera. Suggested Meeting days are split between SMT and MTW. Gary to provide a re-cap.

MEMBERSHIP COMMITTEE
ROGER REINICKER
Roger Reinicker passed out sheets that had the “suspended members” and asked again that each Board Member look into their company’s members and report back. CAD has about 569 suspended members with 1212 active members as of 12/31/2003. Roger handed out a report with the various Division memberships in our Division.

INTERNATIONAL COMMITTEE
BRIAN WEST
No report.

OLD BUSINESS (ALL)
None.

NEW BUSINESS (ALL)
Aram Terzian asked that the Long Range Planning Committee be resurrected and take a look at what new services the CAD can offer. This is one of the functions of the Past-Chairman.

Membership asked how could the CAD provide support to the local sections. Suggestion was for several canned talks to be developed allowing Board members to present them at local meetings. Committee to be set up.

Motion made to contribute $2000 to the support of ANTEC. Motion passed. Motion made to contribute $1000 for the Opening Reception. Motion passed. Motion made to adjourn. Motion seconded and passed.

<table>
<thead>
<tr>
<th>Action Items</th>
<th>Assigned to</th>
<th>Complete</th>
<th>Target Completion Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>From RETEC BOD</td>
<td>Gary Beebe</td>
<td></td>
<td>Summer 2004 BOD</td>
</tr>
<tr>
<td>Registration lists from past RETEC to Tracy for demographic evaluation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provide information about past RETECs for statistical analysis</td>
<td>Bob Charvat</td>
<td>yes</td>
<td></td>
</tr>
<tr>
<td>Determine status of ISPE speaker’s bureau</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>From ANTEC 2003 BOD</td>
<td>Sandy Davis</td>
<td>yes</td>
<td>Sometime in a 2004 Newsletter</td>
</tr>
<tr>
<td>Copy of final commercialism to Bruce Mulholland</td>
<td></td>
<td></td>
<td>Summer BOD 2004 in process</td>
</tr>
<tr>
<td>Include information on Terra and the Coloring of Plastics</td>
<td>Bob Trinklein/ Barbara Parker</td>
<td>yes</td>
<td></td>
</tr>
<tr>
<td>Request that Bill Dawes add web links to the Terra Scholarship information and information on the hospitality suites at RETEC 2003</td>
<td>Joe Cameron</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Update on requirements for Fellow of the Society nominations</td>
<td>Terry Golding</td>
<td>yes</td>
<td></td>
</tr>
<tr>
<td>Notification to headquarters that CAD is trying to support Ask PIP</td>
<td>Steve Goldstein</td>
<td>yes</td>
<td></td>
</tr>
</tbody>
</table>
KEYSTONE

CHANGING THE WAY YOU THINK ABOUT COLOR
PROVIDING QUALITY DYES AND COLORANTS TO INDUSTRY WORLDWIDE

KEYPLAST DYES - Full range of Solvent & Disperse dyes for all polymer applications
KEYPLAST PIGMENTS - Full range of pigments for all polymers, including FDA approved MPC Channel Black
KEYWHITE DYES - Optical Enhancers for Security Tags in polymers
KEYFLUOR DYES - Fluorescent colorants for polymers
KEYPHOS - Phosphorescent pigments for polymers
KEYPLAST GRANITES - Granite effect colorants for polymers
REVERSACOLS - Photochromatic colorants for polymers
REVERASTHERMS - Thermochromatic colorants for polymers

Offices, labs and warehouses in Chicago, Santa Fe Springs, CA and Spartanburg, SC. Please call 1-800-522-4393 or visit our web site at www.dyes.com
Alchemists of old sought a touchstone, a catalyst thought to be necessary to change base metals into gold. Juan Ponce de Leon was convinced that a fountain of youth was hidden somewhere in Florida. In the plastics coloring industry, processors seek a concentrate made with a 'universal carrier' – one that can be successfully blended into a variety of plastics without causing brittleness or delamination. Such materials have been touted over the years and, who knows, some may work. I believe, however, that regardless of whether the carrier meets its stated goal, a true universal concentrate will remain ever elusive.

A universal color concentrate makes economic sense. If a processor is incorporating different plastics into components which will be assembled into a single consumer item, wouldn't it be good to be able to purchase a single color concentrate for all the various component plastics without worry of delamination or brittleness? There is an assumption built into the thinking process though. The assumption is that the same color formulation (a single universal concentrate) will produce identical color in two dissimilar plastics.

Professional color matchers know better! That simple and self-evident postulate is absolutely not true! Put the same pigment blend into different plastics and those plastics will be different colors. The plastics don't even have to be dissimilar. Apparent color can (and often does) shift when a different supplier's plastic is substituted. Worse yet, there are cases where different lots of the same supplier's plastic cause a color shift.

Does it matter? If the two plastics will never be seen side by side, the answer is probably that it doesn't matter if the parts don't match. In those cases, the use of a universal concentrate is fine. On the other hand, a multi-component unit with parts in intimate contact requires the closest color tolerance there is. By far, the majority of universal concentrate requests that have come through this office have been of the latter type.

continued on page 12
Upcoming ANTECs

2005 ANTEC Boston
Venue: Hynes Convention Center
Dates: May 1-5, 2005
CAD Chairs: Dave Johnson & Barb Parker

2006 ANTEC Charlotte
Venue: Charlotte Convention Center
Dates: May 7-11, 2006
CAD Chairs: Sharyl Reid & Steve Goldstein

Upcoming RETECs

2004 RETEC
Venue: Marco Island, FL
Dates: September 19-21, 2004 Chair: Sandra Davis

2005 RETEC
Venue: New Orleans, LA
Dates: September 26-28, 2005
Chair: Earl Balthazar

2006 RETEC
Venue: Cincinnati, OH
Dates: September 17-19, 2006
Chair: Bruce Mullolland, Scott Heitzman

ANTEC 2004 PHOTOS

Just a quick color check on the Hors d’oeuvres!

The beautiful view of the Chicago skyline from Navy Pier.

Everybody say, “Cheese.”

You’re kidding! Bob Trinklein is Chairman now!

So rock beats scissors and scissors cuts paper...
CAREER CLEARINGHOUSE

To better serve our members, the CAD Board of Directors has agreed to establish an employment clearinghouse in the CAD newsletter under the following strict rules and guidelines.

You must be unemployed or have a firm separation date at the time the resume is sent. This is mandatory—no exceptions. Also, include a time limit on the availability of the resume.

Employers seeking new employees
Send your requirements by mail or fax to Bob Charvat at the address below. Indicate the length of time the new career will be available. The Clearinghouse Coordinator will, IN COMPLETE CONFIDENCE, advise either and/or both parties of any potential matches. NO RECOMMENDATION OR ENDORSEMENT BY EITHER PARTY SHOULD BE ASSUMED OR SUGGESTED BY ANY ACTION TAKEN OR NOT TAKEN BY THE COORDINATOR.

Companies seeking to fill openings/positions and persons seeking a new career
must send their job description or resume, respectively, to:
Bob Charvat, Charvat and Associates, Inc.
374 Bradley Road • Cleveland, OH 44140-1149
fax: 440-835-2011 • email: rcharvat@msn.com
Why does this happen? Why does color depend on the type of plastic, the manufacturer of the plastic, and, sometimes, even the particular manufacturing lot of the same plastic? Let's look at some of the reasons for this unwanted color shift.

1) Color contribution of the plastic. All plastics are not created equal. Some are transparent and are crystal clear. Some are a milky white. Some are very opaque white. Others are ‘yellowish’ in color, while others are downright amber. In each case, the color contribution of the plastic visually blends with colorants to produce a unique final color. A color formulation will have to be modified for one of the plastics so that it will match the other plastic. If the need arises for two different concentrates, regardless of the reason, doesn't it make sense to make each one in the carrier most compatible with that plastic?

2) Processing temperatures of the final part. To prevent degradation, colorants must be held below a maximum temperature unique to the individual colorant. Colorant degradation translates to color shift. Plastics which process at low temperatures are more forgiving in this regard than are the more exotic engineering resins, which, in certain cases, must be processed above 600 °F. If a universal concentrate were to be considered for plastics, which require vastly different processing temperatures, then only colorants which could withstand the higher temperature should be used. This severely narrows the choice of colorants in the first place, and it usually means adding cost to coloring the lower melting plastics. Additional cost wipes out most of the reason for considering the universal carrier in the first place.

3) By-products of the manufacturing process. Most plastics are produced by using some kind of metallic catalyst. A small amount of that catalyst will always remain in the final product. Colorants produce color because of the way they are put together at a molecular level. On the molecular level, colorants consist of a skeleton of atoms enveloped by a cloud of electrons. It is that electron cloud which determines which wavelengths of light are reflected and which are absorbed. That is just a fancy way of saying that the electron cloud determines the ultimate color a pigment produces. If that cloud is altered in some way, the perceived color shifts. Catalyst residue can be attracted to the electron cloud. When that happens, the cloud is perturbed and the color shifts. Plastics, which are otherwise identical, will appear to be different when the catalyst residues are different. The photo on page 9 shows an extreme case of catalyst interaction with colorant.

4) The chemistry of the plastic. Just as the catalyst can perturb the electron cloud of the colorant, so can the chemistry of the plastic itself. Polyolefin plastics, such as polyethylene and polypropylene, consist of carbon and hydrogen attached to one another by what is referred to as ‘single bonds’. Single bonds won't interact with a colorant's electron cloud. Engineering plastics are another matter because they possess electron structure, which can interact with colorants on the molecular level. Such interactions produce color shifts. When changing plastic types, there is often an unexplained shift in the final color, which can be traced to the chemistry of the plastic.

Summary. The desirability for a universal carrier diminishes when color anomalies crop up. Unfortunately, when color agreement is important (usually the goal for universal concentrates), color adjustments are usually required. Since there must be two formulations anyway, doesn't it make sense that each one uses the carrier, which is optimal for its intended plastic rather than using a compromise carrier, which may prove more expensive?

DO YOU WANT TO BE A CAD SPEAKER AT LOCAL SECTION, DIVISION AND OTHER COLOR RELATED MEETINGS?

The Education Committee of CAD is rebuilding our obsolete speaker’s list. You are invited to participate by filling out the Speakers List form on page 14 of this newsletter and e-mailing it to rcharvat@msn.com. Sections and Divisions including our Division will contact potential speakers on subjects dear to CAD. When completed, the Speakers list will appear in the CAD Newsletter, the CAD web site and the SPE web site. There are many members of our CAD able to spread the CAD word domestically and internationally. Through this list we have the ability to inform other SPE members and possibly others not in the SPE Family.

A list that will be updated on a regular basis is available at, www.4spe.org/sectionsdivisions/id/divspeakslist.htm

What are you waiting for? Sign up now!

Bob Charvat
Education Committee
CAD DIVISION SPEAKERS APPLICATION

Please fill out and submit this form if willing to speak at Section/Division meetings.

Return to Bob Charvat by e-mail rcharvat@msn.com (preferred)
Or Fax: 440-835-2011
Or (last choice) 374 Bradley Road
Cleveland, Ohio 44140-1149

Signed __________________ Date ______ Division: CAD-OTHER_____________

SPEAKER INFORMATION

Name: ____________________________ Telephone:_____________________
Title:____________________________ Fax:__________________________
Company:________________________ e-mail:________________________
Address:________________________ Other:_________________________
City:____________________________
State:___________________________
Zip+4:___________________________

TITLE AND TOPIC OF PRESENTATION(S) AND ABSTRACT(S):

______________________________________________________________
______________________________________________________________
______________________________________________________________

SPEAKER REQUIREMENTS

1. Speaker travel and other expenses company supported? Yes No

2. If “no” to #1, give details and requirements__________________________

3. Geographic availability:
   A. Domestic Only (Details):________________________________________
   B. Off Shore (Details):__________________________________________

4. Personal Availability: ___________________________________________

5. Advance notice requirements:_____________________________________

6. Audio-Visual requirements:_______________________________________

7. Advance Notice Issues (If Any): ___________________________________

USE ADDITIONAL SHEETS IF ADDITIONAL INFORMATION NECESSARY
EDITOR’S NOTE

You will notice a familiar face in a new place in this issue. Bob Trinklein, formerly known as Mr. Newsletter, is now gracing our front cover as the CAD chairman. I look forward to working with Bob in future issues and know he will ALWAYS get his column in on time.

Bob Charvat contributed several items to this newsletter. He is the person in charge of the career clearinghouse database. Bob is also responsible for “the Book,” The Coloring of Plastics Fundamentals, 2nd edition. As part of the education Committee of CAD, he has put out a call for all those interested in being speakers at CAD meetings. If you are interested please fill out the form in this newsletter. Bob will also be teaching the Plastic Color Science, Pigments & Color Matching seminar at Plastics USA 2004. I don’t know how Bob finds the time to get everything done but I know our Division certainly appreciates his service. Thanks so much Bob!

Please check out our picture pages for photos of the recent ANTEC meeting held in Chicago. Bruce Mulholland, Austin Reed, Sharon Ehr and Bob Trinklein all received awards from the Society. Congratulations to all.

In this issue we also have several articles for your reading pleasure. The first is on how color affects our moods, something to keep in mind when making those important color decisions. Dr. Darrell Kirchner of Teknor Color Company has graciously contributed an interesting piece on color concentrates. The final article is on the gene that allows us to see red and how this influences the ability of men and women to perceive this color. I would like to take this opportunity to solicit the membership for articles of interest in the area of color. If you have read a really good piece in a technical journal or found an interesting site on the web that you would like to share, please forward the information on to me at barbara_parker@flexprod.com.

I personally am looking forward to the upcoming RETEC meeting, September 19-21 in Marco Island, Florida. This is our second visit to this location, the last being two years ago. The last meeting was overshadowed by events of the time. The hotel, staff and location will make this a meeting to remember. The program topics look to be extremely interesting. Bob Charvat will be holding a one-day pre-conference tutorial on the Coloring of Plastics. Let’s not forget there will also be a beach party reception with Color Eye Blind, fishing and golf to round out the conference.

Hope to see you all at Marco . . .

Barb Parker
Editor

INVITATION TO ATTEND CAD BOARD MEETINGS

The Color and Appearance Division regularly holds Technical Program Committee (TPC) and Board of Director (BOD) meetings at the ANTEC and the RETEC. In addition, a Summer BOD and TPC meeting are typically held about 6 weeks prior to the RETEC, and a Winter BOD and TPC meeting are held in early January. The Summer meeting is scheduled in various locations; the Winter meeting is typically held at the site of the RETEC that is a year and a half away. Any SPE/CAD members who wish to attend are welcome at these meetings. Contact the Division Chairman (see the back cover) for information on the location and times of any of these meetings.

Please join us!

RETEC 2004
The Society of Plastics Engineers
and the Color & Appearance Division
September 19-21
Marco Island, Florida

Please contact:
Tim Reilly, Clariant Corporation
401-823-2444
Timothy.Reilly@clariant.com
or
Johnny Suthers, Eastman Chemical
423-229-3263
jsuthers@eastman.com
We give plastics
the winning edge

A broad range of additives
that add value to polymers:

Ciba® IRGANOX® antioxidants
Ciba® IRGAFOS® process stabilizers
Ciba® TINUVIN® and CHIMASSORB® UV stabilizers
Ciba® IRGASTAB® FS process stabilizers
Ciba® IRGACLEAR® clarifying agent
Ciba® IRGASTAT® permanent antistat
Ciba® IRGAGUARD® antimicrobials
Ciba® FLAMESTAB® flame retardants

A full palette of heavy-metal free
organic and FDA compliant colorants
for polymers:

Ciba® CINQUASIA® high performance Quinacridone pigments
Ciba® CROMOPHTAL® and IRGAZIN® high performance pigments
Ciba® IRGALITE® classical pigments

For more information about Ciba Specialty Chemicals,
visit us at www.cibasc.com or call 1 800 431 2360

Chemax Polymer Additives
Antistats
Pigment Dispersants
Slip Agents
Lubricants
Antifogs

RUTGERS
Organics
Performance Chemicals Division
800-554-6234
www.rutgers-organics-corp.com

ISK
ISHIHARA CORPORATION (U.S.A.)

• TiO₂  • Ultra-fine TiO₂
• Nickel Titanates  • Chrome Titanates
• Conductive pigments

600 Montgomery Street
San Francisco, California  94111
www.isihara.com

TiONA® TiO₂ for Plastics

Millennium Chemicals
20 Wight Avenue  •  Hunt Valley, MD 21030
410-229-4400  •  1-866-225-5242
www.millenniumchem.com

UMC

• LumiNova® Super bright and super long afterglow phosphors
• EPOCOLOR® Daylight Fluorescents
• 6SSU (Natural) & GSS (Colored) classical phosphors
• PANAX & OmniCyanine Organics
• UVF UV Fluorescents
• JMB™ Cadmium
• Piasol™ Thermochromics

UNITED MINERAL & CHEMICAL CORPORATION
1100 Valley Brook Avenue, Lyndhurst, NJ 07071
Tel: 800.777.0825  •  Fax: 201.507.1906
E-mail: inquiry@umccorp.com  •  Website: www.umc-corp.com

RTP Co.
Imagineering Plastics

PRECOLORED SPECIALTY COMPOUNDS
Color Concentrates / Cube Blends

www.rtpcompany.com

A. Schulerman
CAPTURING YOUR SUCCESS™

There's only
one match for color.
A. Schulerman.

Color Technology Center
1303.323.0101
www.aschulman.com

16
Plastic Color Science, Pigments & Color Matching Workshop
Instructor: Robert Charvat
Scheduled: September 28-29, 2004

Purpose & Overview
This two-day seminar is dedicated to raising the attendee's knowledge level about the coloring of plastics. Hands-on experience helps the attendees understand color theory, appearance attributes, colorants (pigments and dyes) and approaches to visual and computer color matching. Day One addresses color theory and science including how a person sees color and how to use documentation of color.

Day Two addresses colorant technology and color matching both by visual and computer techniques. The attendee has direct hands-on interaction with color matching where their efforts can be directly observed, evaluated and appraised.

Who should attend?
This seminar is intended for the technician, manager and/or professional who does not feel satisfied or comfortable with his or her current level of knowledge or understanding of color, colorants and color matching. This seminar is NOT directed or recommended to those who already have extensive experience or training in this technology or specialty.

Instructor: Robert Charvat
Robert Charvat retired early from Engelhard Corporation to form his own consulting organization, Charvat and Associates, Inc. He teaches coloring of plastics at Terra Community College in Fremont, Ohio which has a unique “Coloring of Plastics” program. He serves on the Society of Plastics Engineers (SPE) Color and Appearance Division (CAD) Program Advisory Board to the college. He is a member of the SPE/CAD Board of Directors. A senior member of SPE since 1969, Mr. Charvat received the “Outstanding Achievement Award” from the SPE Color and Appearance Division in 1985 and then became one of the Society’s Honored Service Members in 1994. He was elected as a Distinguished “Fellow of the Society of Plastics Engineers” in 2000. This was followed by the Honorary Emeritus title in late 2002. Mr. Charvat is listed in “Who’s Who in Plastics and Polymers.”

Seminar Content
COLOR THEORY
• Physics of color • Description of color • Psychology of color
• Language of color • Organization of color
• Three dimensional color space • Testing of color vision

UNDERSTANDING COLOR ASSESSMENT/MEASUREMENT PRINCIPLES
• Measurement technology • Visual color assessment
• Instrumental color assessment • Color specification
• Determining color standards
• Interpreting color data and spectrophotometer curves

COLORANTS
• Definitions • Forms and types • Colorant properties • Colorant selection • Testing

COLOR MATCHING
• Using additive and subtractive theory • Hands-on visual color matching • Hands-on instrumental color matching
WOMEN SEE THIS ONE COLOR DIFFERENTLY

She sees crimson, burgundy, and tomato. He sees red. Just plain ol' red. Why? It turns out there's a perfectly good reason why men can't see what is so obvious to women: the many variations—some subtle, some bold—of the color red.

Reuters reports that researchers from Arizona State University in Tempe have determined there is a gene that allows us to see the color red, and that gene comes in a high number of variations. Because the gene sits on the X chromosome—and women have two X chromosomes and so two copies of this gene, compared with only one for men—the gene aids women's ability to perceive the red-orange color spectrum.

The Arizona researchers, led by Dr. Brian C. Verrelli and Dr. Sarah Tishkoff, analyzed the DNA of 236 men around the world and learned that the gene OPN1LW, which allows us to see the color red, has at least 85 variations—three times the number of variations you would expect to find in any other gene randomly selected from the human genome.

It turns out that these variations, which have been preserved throughout evolution, are beneficial. The researchers speculate that it all began in our cavewoman days when sharp color perception was useful to women when they gathered and foraged for food. The crimson berries may have been poisonous, while the burgundy berries were just fine.

Here's an interesting tidbit: The "red" gene routinely swaps bits of genetic material with the neighboring "green" gene that also sits on the X chromosome. Reuters notes that sometimes this exchange goes wrong and results in a defect that causes colorblindness. An estimated 8 percent of men are colorblind. Very few women suffer from this since they have two copies of the red and green color genes, and at least one of them tends to work correctly.

The study findings were reported in the American Journal of Human Genetics.
COLOR MOODS

The colors you live with really do influence your emotions. Thus, the mood that colors can create is an important factor in making decorating decisions. Some colors will lighten and brighten your mood while others make us calm and serene. We respond to color with our heads and our hearts - so choose wisely.

**Warm Colors**

Warm, active colors include red, orange and yellow. These extroverted hues stand out and sometimes dominate. They inspire conversation and an upbeat attitude. Red, it’s the first color that infants notice and may actually help the baby brain develop. Orange, without speaking a word, it says affordability and speed. Which is probably why you’ll find it so abundant in fast food restaurants. Yellow, may not be as cheery as you think. Children may actually cry more in yellow rooms.

**Cool Colors**

The cool, passive colors – green, blue and purple - will soothe, staying quietly in the background to calm and restore. Green is the universal color for safety. Blue, acting much the opposite of red can help decrease blood pressure and pulse rate. Purple, too much can actually make you sick, so refrain from using it aboard boats and planes.

**Neutral Colors**

Neutrals are the non-colors: black, browns, grays and white. They combine and cooperate, bridging together with almost any color. Black may be a color of mourning in the U.S., but you’ll find just its opposite, white, used for mourning in many Asian countries. Brown is the most comfortable of all colors. Gray connotes stability and reliability for example: the gray flannel suit.

**Color Language**

What ideas do colors represent? Here are a few examples:

**Red**
- Excitement, energy, passion, desire, strength, power, heat, love, aggression

**Orange**
- Energy, balance, warmth, enthusiasm, speed, vibrant, expansive, flamboyant, demanding of attention

**Yellow**
- Joy, happiness, optimism, idealism, imagination, hope, sunshine, summer, philosophy

**Green**
- Nature, environment, healthy, good luck, renewal, youth, vigor, spring, generosity, fertility

**Blue**
- Peace, tranquility, calm, stability, harmony, unity, trust, truth, confidence, conservatism, security

**Purple**
- Royalty, spirituality, nobility, spirituality, mysterious, transformation, wisdom, enlightenment

**Black**
- Power, sexuality, sophistication, formality, elegance, wealth, mystery, fear, anonymity

**Brown**
- Earth, hearth, home, outdoors, reliability, comfort, endurance, stability, simplicity, comfort

**Gray**
- Security, reliability, intelligence, modesty, dignity, maturity, solid, conservative, practical, boring

**White**
- Reverence, purity, simplicity, cleanliness, peace, humility, precision, innocence, youth, sterility
Chairman:  
Bob Trinklein  
Teknor Color  
401-725-8000, x105

Board Chair-Elect:  
Sandra Davis  
DuPont  
302-999-2540

Finance Chair:  
Dave Johnson  
Ferro Corporation  
216-641-8580

Immediate Past Chairman:  
Sharon Ehr  
Chroma Corporation  
815-759-2130

Councillor:  
Austin Reid  
DuPont  
302-999-3203

Treasurer:  
Bruce Mulholland  
Ticona  
859-525-4756

Secretary:  
Sharyl Reid  
Teknor Color Company  
864-968-2426

ANTEC TPC Chair:  
Bruce Mulholland  
Ticona  
859-525-4756

RETEC TPC Chair:  
Sandra Davis  
DuPont  
302-999-2540

ADD'L CONTACTS:  
SPE Headquarters:  
Debra Ravetto  
203-740-0471

CAD Webmaster:  
Bill Dawes  
804-748-8639

DIRECTORS UNTIL 2005:  
Gary Beebe  
941-774-7355

Gary Conrad  
Shepherd Color Company  
513-874-0714

Steve Goldstein  
BASF  
877-747-1857

Richard Harold  
Consultant; BYK-Gardner USA  
703-625-5454

Howard Kennedy  
Dominion Colour Corporation  
416-791-4239

Barbara Parker  
Flex Products, Inc.  
707-525-7910

Tracy Phillips  
Ciba Specialty Chemicals  
770-995-0887

Jamie Przybyliski  
Terra Community College  
419-334-8400, x459

Edward Tucker  
Plasticoncentrates, Inc.  
215-243-4143

Norm Uresse  
Advanced Color Technologies, Inc.  
864-370-2990

DIRECTORS UNTIL 2006:  
Earl Balthazar  
817-466-8413

Hal Button  
Lancer Dispersions, Inc.  
330-794-9922

Robert Charvat  
Charvat and Associates, Inc.  
440-835-2011

Jim Figaniak  
LTL Color Compounders, Inc.  
215-736-1126

Terry Golding  
Clariant Masterbatch Div.  
763-971-6174

Frank Lavieri  
EC Pigments  
508-676-3481

Bruce Mulholland  
Ticona  
859-525-4756

George Rangos  
Ferro Corporation  
724-229-5371

DIRECTORS UNTIL 2007:  
Joe Cameron  
RTP Company  
800-433-4787 x6665

Steve Esker  
Paramount Colors, Inc.  
Elk Grove Village  
513-681-5950

Sharyl Reid  
Teknor Color Company  
864-968-2426

Scott Heitzman  
Sun Chemical  
513-681-5950

Tim Reilly  
Clariant Pigments & Additives  
401-823-2444

Roger Reinicker  
Ciba Specialty Chemicals  
302-992-1252

Don Stengel  
Washington Penn Plastic Co.  
724-228-1260

Johnny Suthers  
Eastman Chemical Company  
423-229-3263

Aram Tetzian  
EMD Chemicals Inc.  
914-592-4660 x203

Brian West  
Techmer PM LLC  
865-457-6700

COMMITTEE CHAIRPERSONS

Awards Committee:  
Terry Golding  
Clariant Masterbatch Div.  
763-971-6174

Color & Appearance Advisory:  
Brian West  
Techmer PM LLC  
865-457-6700

Endowment:  
Johnny Suthers  
Eastman Chemical Company  
423-229-3263

Education:  
Robert Charvat  
Charvat and Associates, Inc.  
440-835-2011

Membership:  
Roger Reinicker  
Ciba Specialty Chemicals  
302-992-1252

Newsletter:  
Barbara Parker  
Flex Products, Inc.  
707-525-7910

Paper Review:  
Sharon Ehr  
Chroma Corporation  
815-759-2130

Public Interest:

Gary Conrad  
Shepherd Color Company  
513-874-0714

Terra Community College Advisory:  
Jamie Przybyliski  
Terra Community College  
419-334-8400, x459

Web Site Committee:  
Joe Cameron  
RTP Company  
800-433-4787 x6665

SOCIETY OF PlASTICS ENGINEERS  
Color & Appearance Division  
14 Fairfield Drive ♦ Brookfield, CT 05704-0403