CHAIRMAN’S MESSAGE

I am sitting in my office looking at the cold dreary rain pouring down on leafless, dull looking tree trunks and various colored fallen leaves blanket the ground - a sure sign that Old Man Winter is approaching in this part of the world.

Our 2006 CAD RETEC is now history. A record number of tabletops were contracted for. The general impression I heard, since I was not able to attend due to my daughter's wedding in Dillon, CO, was that the presented papers were informative and that companies did send their technicians to the conference, the latter being one of our goals for this year's RETEC.

As always at our conferences, small disagreements were heard about this or that on the way we run them. This is one reason we do a survey at each conference. We do look at the comments. Changes are talked about at the Board Meetings. Because of the record number tabletops, which were spread out in three rooms, I understand some comments were made about having to walk around a lot and that there was discussion about booth arrangement. I know the next several RETECs, ie, San Antonio and Detroit, are being held in facilities where the tabletops will be pretty much altogether.

Scott Heitzmann, 2006 RETEC Chairman, and his committee members did a fine job putting together this year's conference.

In my last message, I mentioned our Endowment Fund. Johnny Suthers, Endowment Committee Chair, and his fellow committee members handed out $20,000 in Scholarship money. All of this year's applications were thoroughly examined and discussed by the Committee. CAD members can get Application forms for next year by contacting Johnny.

Board Member Elections for years 2007-2009 are coming. Sharyl Reid, our Chair-Elect is conducting them this year. Board positions are open to all members. Please read her article if you are interested in being on the CAD Board.

Finally, our Secretary, Tim Reilly, had to resign because of job responsibility changes. The Board at the RETEC Board Meeting, in accordance with our Operating Rules, duly elected Howard Kennedy as the new Secretary, to fulfill Tim's Term of office and to continue up the Executive Committee offices. Howard has been on the Board for several years and will handle his new duties ably.

Well, the sun is now shining between the broken formations of clouds, changing the blanket dull yellow colored leaves to a brighter yellow.

My wishes to all for a Happy and Joyous time celebrating this holidays season,

Regards,

Dave Johnson
CAD CHAIRPERSON
Editor’s Note

It is hard to believe that it is time to be preparing the final newsletter of 2006; where has the time gone? It certainly has been one heck of a year!


• CAD now has a new logo and a new mission statement, “The Color and Appearance Division of SPE strives to educate, train, inform and to provide professional interaction opportunities to the global community involved in visual performance and aesthetics of plastics.”

• The Cincinnati RETEC conference in September was great thanks to all the hard work by Scott Heitzman and his team.

• The newsletter finally wrapped up the epic six-part article "A History of Pigment Use in Western Art" By Helen Skelton, Dominion Colour Corp. Thanks so much, Helen!

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 onto me at barbara.parker@jdsu.com.

Please be sure to check out the Spring 2007 distance learning classes from Terra College. There are three classes being offered: Section VL PET 1100 Introduction to Plastics, Section VL PET 1240 Introduction to Color, and Section VL PET 2320 Colorants for Plastics. These classes are a great opportunity to expand your knowledge of color and plastics.

Hope every one has a safe and healthy holiday season . . .

Barb Parker
Editor
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CINIC Chemicals (Shanghai) Co., Ltd. is located in Shanghai, China. The company is ISO 9001 certified. It develops, manufactures and markets organic pigments for the applications in the industries of paints & coatings, plastics and inks.

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OPENING/WELCOME (BOB TRINKLEIN)
(Sandy Davis in lieu of Bob Trinklein)
The meeting commenced at 8:30am with a welcome from Sandy Davis. At this time she introduced our guests Kathryn Brannon, Deb Ravetto and Marty Paisner. Sandy then announced that the 3 new board members starting in August will be Ann Smeltzer, Kathryn Brannon and Marty Paisner. Sandy also announced that the re-elected board members are Gary Conrad, Sharon Ehr, Steve Goldstein, Howard Kennedy, Barb Parker and Jamie Przybylski.

SECRETARY’S REPORT (SHARYL REID)
Motion was made to accept the minutes as written. Motion was seconded. Minutes of the last meeting of 1/11/05 were approved.

TREASURER’S REPORT (BRUCE MULHOLLAND)
The Treasurer's report was presented. The beginning balance as of 12/31/05 was $32,449.17 with deposits of $81,829.65 and expenses paid out of $13,403.01 with an ending balance on 4/30/05 of $100,875.81. Bruce then discussed the upcoming 2005/2006 Annual Budget. It has been decided that we will move newsletter deposits in line with our fiscal year. Anything received beginning in April will go to the next fiscal year. Motion was moved to accept the budget, second motion was made and all in favor to pass it.

COUNCILOR'S REPORT (AUSTIN REID)
Councilor's Report was presented. Austin stated that he received a letter from Susan Olderwald stating that CAD BOD members are protected under the ISPE liability insurance policy.

ANTEC TECHNICAL PROGRAM COMMITTEE
BRUCE MULHOLLAND
ANTEC 2005 (Boston, MA) - Dave Johnson
Dave thanked Aram Terzian and Joe Cameron for their role as moderators. Dave stated that we had 162 attendees in the morning CAD sessions and 225 in the afternoon CAD sessions. Dave stated the having the ANTEC Matrix Meeting by WebEx went very smoothly and only took about 1 hour.

ANTEC 2006 (Charlotte, NC) - Sharyl Reid and Steve Goldstein
Sharyl and Dr. Steve will attend the WebEx Matrix meeting in January 2006. Steve stated that we have 2 technical papers to date. We will also contact anyone who submitted overflow papers for RETEC 2005.

ANTEC 2007 (Cincinnati, OH) - Scott Heitzman
ANTEC 2008 (Milwaukee, WI)- Ann Smeltzer & Marty Paisner
ANTEC 2009 (San Antonio, TX)
ANTEC 2010 (Orlando, FL)
ANTEC 2011 (Boston, MA)-Robert Butts

RETEC TECHNICAL PROGRAM COMMITTEE
SANDRA DAVIS
RETEC 2004 (Marco Island, FL) - Sandra Davis
Sandy stated that the final surplus was $114,684. The split of $32,204 went to ISPE and $80,480 was allocated to CAD. There were 448 attendees with 77 being non-members. There was a record of 58 tabletops. Sandy attributed the success of the conference to having such support structure and thanked her committee for that.

ANTEC 2005 (New Orleans, LA) - Earl Balthazar - Sept. 25-27
Earl stated that there will be 2 full days of papers. They received 25 papers. Earl said that Brian West will be sending the Professional Interaction Letters out to the tabletop participants in the next month. Earl said that on-line registration is available. Sandy suggested that Earl have 2 people review each paper. Earl said that he will only be offering CD's at RETEC 2005 and that preprints can be purchased. He will distribute a CD and Abstract Book.

ANTEC 2006 (Cincinnati, OH) - Scott Heitzman/Bruce Mulholland - Sept. 17-19
Scott's title for the conference will be "Back to the Basics". He will have it divided into 4 categories: 1) colorants 2) Processing/Equipment 3) Analytical 4) How the 3 come together. Dave Johnson will handle registration. Brian West will handle tabletops. Webmasters will be Joe Cameron and Tracy Phillips. Scott will have a logo ready by RETEC 2005 so he can send out a call for papers.

ANTEC 2007 (San Antonio, TX) - Tim Reilly, Jim Figaniak - Oct. 1-2 Sandy Davis announced that Tim has secured the hotel. The dates for the conference are October 1-2.

EDUCATION COMMITTEE
BOB CHARVAT & JAMIE PRZYBYLSKI
Bob and Jamie discussed the upcoming OH! Polymer Conference on June 15th. Jamie requested financial support of $1000. A motion was made and accepted.

NEWSLETTER COMMITTEE
(BARB PARKER/SHARYL REID)
In Barb Parker's absence, Sandy Davis announced that the CAD Newsletter was award 2nd place for Divisional Newsletter Award.

continued on page 6
continued from page 4

**CAD WEB-SITE (JOE CAMERON)**

Joe Cameron made a motion to contract an outside group to provide web hosting for the CAD Website. Joe will have DWC put a demo CAD site together for review. Joe stated that this would enable us to move to a self-managed webpage. The motion was tabled to the summer meeting.

**ENDOWMENT COMMITTEE**
**JOHNNY SUTHERS**

Bruce Mulholland announced in Johnny Suthers absence that there is a total of $215,000 in the endowment fund currently. A motion was made to move $27,500 to the endowment fund from the RETEC 2004 surplus. Motion was seconded and passed. After that deposit there will be approximately $240,000 in the endowment fund.

**AWARDS COMMITTEE (TERRY GOLDING)**

Bob Trinklein received the Honored Service Award. Bruce Mulholland will be nominated for Honored Service Award this year. Steve Goldstein was not accepted as a Fellow of Society. The CAD Division won both the Pride and Outstanding Division Awards for last year and will be recognized at the ANTEC Awards Banquet.

**COLOR ADVISORY GROUP (BRIAN WEST)**

No report.

**PUBLIC INTEREST COMMITTEE (GARY CONRAD)**

Gary will continue to compile data from the annual RETEC survey. Minolta has agreed to provide door prizes again this year.

**MEMBERSHIP COMMITTEE (ROGER REINICKER)**

Roger stated that we currently have 957 primary members. Roger sent out the surveys in regard to non-membership renewals and received no feedback.

**INTERNATIONAL COMMITTEE (BRIAN WEST & GARY CONRAD)**

Gary reported that on March 1st a color conference, sponsored by the Additives & Color Europe Division, was held in Aachen, Germany. There were 125 attendees and 17 tabletops. The conference is planned for every other year.

**DIVISION/SECTION TECHNICAL RESOURCE COMMITTEE (STEVE GOLDSTEIN)**

Steve said the committee has reviewed the course. Steve would like to get this finalized and then put it on the website.

**OLD BUSINESS (ALL)**

Reviewed and updated existing action item list.

**NEW BUSINESS (ALL)**

* Sandy affirmed the committee chairs. A motion was made to accept them as stated and the motion was so moved.
* Sandy announced the dates of the summer meeting as August 8-9. As of now it is held in Savannah, GA.
* A motion was made to name a scholarship after Dr. Fred Billmeyer. We will also state this on the inside of the abstract cover for RETEC 2005 and announce the scholarship at RETEC 2005 in New Orleans, LA.
* A motion was made to donate $5000 to Terra Tech. The motion was so moved.
* Discuss the distribution of endowment funds at the summer meeting.
* Motion was made to adjourn, motion accepted.

**UPCOMING BOARD MEETINGS:**

2006 SPRING: Charlotte, NC May 9, 2006
SUMMER: Detroit (Dearborn), MI Aug 7-8, 2006
FALL: Cincinnati, OH Sep 20, 2006
Good news from the Endowment Scholarship Fund Committee of the SPECAD. SPECAD has awarded five $4,000 scholarships to students who have demonstrated or expressed an interest in the plastics industry. They are majoring in or taking courses that would be beneficial to a career in the plastics industry. This included, but was not limited to, plastics engineering, polymer science, chemistry, physics, chemical engineering, mechanical engineering, and industrial engineering. All applicants were in good standing with their colleges. Financial need was considered for most scholarships. The deadline for applications was June 1, 2006. Recipients were notified after the Summer Board of Directors meeting in August in Detroit, MI. Three of the scholarships were named for honored members of the SPECAD group. They are, Robert Charvat Scholarship, John "Jack" Graff Scholarship and the Gary Beebe Scholarship. Listed below are excerpts from letters received from the honored members or their family members.

Robert Charvat writes:
Dear Dave,
I wish to express my thanks and appreciation to the CAD BOD for the Charvat Scholarship announced at our last BOD meeting. Was I surprised; no I was stunned! I had absolutely no idea this recognition was in the works. …to find out the BOD members, all professional and personal friends would set up the Charvat scholarship is deeply and personally appreciated….Please convey my thanks and appreciation to the CAD BOD and to others that were involved. You all have my profound appreciation for issuing a scholarship in my name. I cannot think of any honor more personally meaningful….finally special thanks to Johnny Suthers, as Endowment chair, for his part in making this scholarship honor a reality.

Stephanie Graff Silk writes:
Johnny,
Thank you for contacting me about the scholarship fund in memory of my father. Good job tracking me down... I've received several times since the Scholarship was awarded at the Charleston conference (1995). Over the years, I've thought about who might be benefiting from the fund, and hoping that it was providing opportunities. My dad was so passionate about sharing knowledge.

All good wishes,
Stephanie Silk

Gary Beebe writes:
Hi Johnny and Dave,
Johnny called me last week to notify me that the board had decided to name one of the scholarships in my name. I would appreciate it if you would notify the board for this honor. I am extremely pleased the funds have done well enough that CAD will be able to issue awards this year. I believe this is a huge accomplishment for CAD and all involved should be very proud. And to be put in the same category as Jack Graff and Bob Charvat, I am although not deserving very honored to be thought of. The biggest thing I miss about not working in color is the CAD meetings and the people in CAD. It was truly the best part of my career in coloring plastics. I wish I could be more involved but I have not thought of a way. I will always be of assistance if anything is

The awarded recipients of the scholarships are:

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<th>RECIPIENTS</th>
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<th>NAMED SCHOLARSHIPS</th>
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<tr>
<td>Brian Skeel</td>
<td>Terra Community College</td>
<td>Robert Charvat</td>
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<td>Timothy McGuire</td>
<td>Clemson</td>
<td>Jack Graff</td>
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<td>Sarah Strauss</td>
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Brian Skeel was able to attend the RETEC in Cincinnati and received a very large check (2'x3') check as a representative of the 5 recipients. Thanks Sharon Ehr!

Brian's speech follows:
"Ladies and gentlemen, members of the SPE, on behove of myself and the other recipients of the Color and Appearance Division Scholarships, I would like to thank Johnny Suthers, the board of directors for the color and appearance division, the endowment committee, and the entire SPE not only for the generous scholarships, but also for your past and present support of Terra Community College and our coloring of plastics program and from all of the students that attended RETEC we would like to thank the SPE for allowing us to attend RETEC. Thank You."

Brian Skeel, Terra Community College

Brian's thoughts really echo other letters I received from the scholars. We as SPECAD members should be proud to be able to help such a well deserving group of individuals. Our application forms for our next group of scholarships will be on our web site in January.

Johnny Suthers
SPE CAD ENDOWMENT FUND CHAIR
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FOR PLASTICS
Terra Community College's Coloring of Plastics Program will be offering three internet based courses in the Spring 2007 Semester. All of these courses will be offered in a completely distance format, meaning there is no lab time involved and a student can complete any of the courses from any computer that is connected to the internet anywhere in the world at a reasonable cost.

These courses are an excellent opportunity for your quality control technicians, production technicians, or yourself to learn more about the coloring of the plastics products. These courses are designed for students that find it difficult to attend regularly scheduled classes in Fremont, Ohio because of distance or time constraints.

To address the need for color education in the plastic's industry Terra Community College has founded the International Institute for the Coloring of Plastics, which offers certificates and associate degrees in the coloring of plastics and plastics processing. The goal for the Institute is to become the world's number one source for education and information about the coloring of plastics.

COURSES OFFERED IN SPRING SEMESTER (BEGINS JANUARY 8, 2007)

Section VL  PET 1100  Introduction to Plastics  (3 Credits)
Fees: $400 Ohio students      $600 out of state      Books: approximately $200

Section VL  PET 1240  Introduction to Color  (3 Credits)
Fees: $400 Ohio students      $600 out of state      Books: approximately $200

Section VL  PET 2320  Colorants for Plastics  (4 Credits)
Fees: $520 Ohio students      $790 out of state      Books: approximately $150

COLOR FOR PROCESSORS CERTIFICATE

The three courses above can be taken to complete a certificate program designed to give processors valuable color knowledge. Processors are experts on producing the parts that they make, however they often do not have the knowledge necessary to prevent potentially expensive color problems from occurring. These courses are designed to provide this valuable color knowledge to QC technicians, operators, production engineers, or anyone else that needs to work with the coloring of plastic parts.

FOR FURTHER INFORMATION SEE TERRA COMMUNITY COLLEGE'S WEB SITE: WWW.TERRA.EDU OR CONTACT:

Program Professor
Jamie Przybyliski
419-559-2459
jprzybyliski@terra.edu

Dean of Engineering
Tom Kissell
419-559-2410
tkissell@terra.edu
COLOR NAMES: MORE UNIVERSAL THAN YOU MIGHT THINK

Web address: http://www.sciencedaily.com/releases/2006/10/061019094031.htm
Source: ScienceDaily.com / Ohio State University

From Abidji to English to Zapoteco, the perception and naming of color is remarkably consistent in the world’s languages. Across cultures, people tend to classify hundreds of different chromatic colors into eight distinct categories: red, green, yellow-or-orange, blue, purple, brown, pink and grue (green-or-blue), say researchers in this week’s online early edition of the Proceedings of the National Academy of Sciences.

Some languages classify colors into fewer categories, but even these categories are composites of those eight listed above, said Delwin Lindsey, the study’s lead author and an associate professor of psychology at Ohio State University. “Though culture can influence how people name colors, inside our brains we’re pretty much seeing the world in the same way,” he said. “It doesn’t matter if you’re a native of Ivory Coast who speaks Abidji or a Mexican who speaks Zapoteco.” He conducted the study with Angela Brown, an associate professor of optometry at Ohio State.

“My own intuition was that if we looked across the world at different languages, people would obviously use different names, but roughly we’d find maybe 11 names used to partition color space,” Lindsey said. “That’s not at all the case. By looking at more traditional cultures, we found that many have fewer color names, yet these names correspond to colors that English-speaking cultures also discriminate linguistically,” he continued. “We have names for 11 basic colors in English,” Lindsey said. “Some cultures have two, some have three. We wanted to know if the cultures that say they only have two color terms chose colors similar to those selected by cultures that have more color names.” They found that colors fall into eight distinct categories.

The researchers found a major distinction between warm and cool categories for many of those cultures that have just two or three common colors. That distinction tended to coincide with English colors that are thought to be warm (yellows, reds and oranges) and cool (greens and blues.) “While there is some diversity in the location of the color boundaries, there is an absolutely rock solid boundary across all the cultures, which English speakers would call warm and cool,” Lindsey said. For example, some societies lump all the cool colors into one category, and all the warm colors into another category, while other societies subdivide warm and cool colors into several categories. In the case of the subdivided categories, there still exist color boundaries that separate warm from cool. Lindsey said the next stage in this research is to look at physiology of color perception, as some researchers believe that infants have the innate ability to recognize certain colors.

COLOR FUTURES

According to ‘Wake Up to Color’, a report by The Future Laboratory for Konica Minolta, color is king when it comes to making sense of brands. Color is also the most effective, visible and instant way of building a brand from scratch, according to its poll of almost 6,000 consumers in France, Germany and the UK. And its panel of international futurists and color experts agree that color creates clear associations that can make or break a brand or service: think Virgin, Coca-Cola, Apple, and Microsoft. Blue remains the color that consumers associate with credibility and trust, according to 49.4% in the UK, 57% in France and 53% in Germany. It is also the color most likely to instill confidence in terms of brands, logos or printed information.

The colors most associated with pleasure and fun are red (UK and France) and orange (Germany). In France more women than men associate red with pleasure; while in Germany orange is men’s most pleasurable hue. At the most basic level, says Jan White, author of Color for Impact, color sells. Using color coding in documents, for instance, reduces visual search times by 80%. Advertisements in magazines or business directories get 44% more responses when red is used. Despite the obvious benefits, businesses have not yet taken full advantage of color printing in the office, says our panel. There are four major reasons for this: cost, performance, print quality and ease of use. As in most other sectors, sustainability is now a major concern within the printing and publishing industry. We are seeing a raft of companies aiming to become 'carbon neutral' by purchasing carbon offsets and carbon-neutral and 'green' inks.

www.lexmark.co.uk  www.colour-affects.co.uk  www.pantone.com
Upcoming Antecs

2007 ANTEC Cincinnati
Venue: Cincinnati Convention Center
Dates: May 6-10, 2007
CAD Chair: Scott Heitzman

2008 ANTEC Milwaukee
Venue: Midwest Express Center - Milwaukee
Dates: May 4-8, 2008
CAD Chair: TBD

Upcoming Retec

2007 RETEC San Antonio
Venue: Hyatt Regency
Dates: October 1-2, 2007
Chair: Tim Reilly

2008 RETEC Detroit
Venue: Hyatt Dearborn
Dates: September 21-23, 2007
Chair: Bruce Mulholland

2009 RETEC Savannah, GA
Venue: Hyatt Regency Savannah
Dates: October 19th - 20th - 2009
Chair: Aram Terzian

Interested in Joining the CAD Board of Directors?
Sharyl Reid/A. Schulman Inc.

Are you an active member of the Society of Plastics Engineers? Are you willing to roll up your sleeves and serve? The Color and Appearance Division Board of Directors needs someone like you! A position on the CAD Board is a (5) year commitment with a requirement that you must be able to attend (4) mandatory meetings per year, two of which are tied into attending the annual SPE ANTEC and RETEC Conferences.

If you would like to join the CAD Board and are ready to volunteer your time and effort through many of our sub-committees and by helping to run our well known and very successful annual SPE CAD RETEC Conference, please submit your biography and share some words about why you would like to serve on the CAD Board to Sharyl Reid at Sharyl_Reid@us.aschulman.com no later than January 31, 2007. If you have any questions regarding the position and biography submissions you can contact Sharyl Reid by telephone at (864) 915-7253.

Thank you very much for your interest and I look forward to hearing from you!
PLASTICS MUSEUM "CAD" DISPLAY

The following list consists of the first pass on ideas for the Plastics Museum CAD Display, which is behind schedule. The list is not in any order of priority. Additional ideas are encouraged.

CAD members are encouraged to look over the list to identify items etc. they and/or their companies can/should contribute. Also identify companies we can approach for in kind or material or equipment contributions. It is my understanding, not yet confirmed, these contributions will be tax deductible as charitable contributions. More on this issue later.

Send ideas and/or objects to Bob Charvat, but let me know they are going to be sent.

THE LIST

1. A small portable spectro to display alongside a GE Spectro. (The GE Spectro was donated through Walter Martin/Huntsman in working order a few years ago. It currently is still in the shipping crate in the Terra Plastics Color Lab. It may be the last GE in existence.)
2. Is there a "Comic Analog Computer taking space in somebody's attic ready for the display?
4. Someone to design and provide plaque(s) listing the CAD Fellows and Honored Service Members and their contributions.
5. Pictures in interest of CAD activities and history.
6. A small light booth D65, A, F and UV capable
7. Hand held UV light source
8. Plastic Color Chip Handouts (A. Schulman has agreed to supply on a continuing basis)
9. A list of companies active with the CAD
10. A presentation illustrating the technical programs CAD conducts
   11. Munsell Color Chip Book Set
   12. Munsell Student set book
   13. Copy of the latest CAD Newsletter
14. Display of Terra Community College Color Lab and Activity
15. List of Past Chairs from the start (PAG and CAD) in Rochester, New York in 1962
16. A framed copy of the CAD comic strip and any cartoons that are appropriate
17. Pictures and artifacts of "Color Eye Blind"
18. Samples of colorants, compounds, color concentrates and liquid colorants including descriptions of how made
19. Presentation of colorant industry starting with "Mauve"
20. This is just for starters!
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INTRODUCTION
The Coloring of Plastics program at Terra Community College is a one of a kind industry supported educational program. Other colleges and universities teach polymer science, but Terra's program is unique because it concentrates on the extensive color matching skills needed in the manufacturing of thousands of plastic parts. The CAD and Terra have recognized a need for color education in the plastic's industry, not only in our local area, but throughout the country and the world. To address this need, the college has founded the International Coloring of Plastics Institute, a new phase in this unique program's history. The goal for the Institute is to become the world's number one source for education and information about the coloring of plastics. The first project for the Institute is to convert Terra Community College's nationally renowned Coloring of Plastics Program from a strictly on campus program to include distance and hybrid courses. The first of these courses are now in place. There are currently three courses offered that are entirely internet based, so that students can take them on their computer anywhere in the world.

HISTORY
The Coloring of Plastics program has enjoyed fantastic industry support. It is a shining example of how industry can work hand in hand with an education institution to develop a program that can not only provide great employment opportunities for its graduates, but also fulfill a glaring need in the industry. In the mid 1980's, the members of the Color and Appearance Division (CAD) of the Society of Plastic Engineers (SPE) saw a need for qualified color matchers in the plastics industry. The demand was far greater than the supply. Companies involved with the coloring of plastics were frequently raiding each other for qualified personnel. Furthermore, there was no place for people to receive a formal education in the art and science of color matching. The CAD decided to address the problem by establishing a two-year associate degree level program to train color matchers. The CAD formed a committee to search out an educational institution that had the means and desire to set up such a program. Terra Community College was chosen because of its existing Plastics Program and the commitment and enthusiasm of two people in particular, Gordon Samm and Chuck Swearengin. Also an advantage for Terra was its location in northwest Ohio. It is estimated that 80% of the country's coloring of plastics industry within a 500 mile radius of Fremont. Also, the local SPE section in the Fremont area, the Firelands Section, had a heavy emphasis on the coloring of plastics. The section provided much support for the Terra's Program, including several members of the CAD search Committee and the Program's Advisory Committee, generally considered the best and most active Advisory Committee at the College.

Once Terra Community College was selected to host the program, an Advisory Committee set up to develop and oversee the program. It consisted of CAD members Ron Kehl, Bruce Mueller, George Rangos, Jim Mongiardo, Tim Lewis, Jack Graff, Chuck Swearengin and Dennis Meade. Dennis Meade continues to serve on the present day committee. The current Advisory Committee, in addition to Dennis Meade, is composed of Bob Charvat, Bruce Mulholland, Tony Rump, Jamie Przybylski, Steve Foos, Karen Daniels and Tom Kissell. The committee developed the curriculum for the program, determined equipment requirements, procured several pieces of equipment, and through the generosity of the CAD, set up a scholarship fund for students enrolled in the program. The program began in 1988, with the first students graduating in 1990. Since then, 250 students have enrolled in the program producing 130 Associate Degree graduates. Many more have received certificates and taken classes to improve their skills at their present jobs.

CAD SUPPORT
The CAD support of Terra's Coloring program did not stop at the establishment of the program. The CAD has continued to make monetary donations to the program to the tune of $225,000 over the past 15 years, easily making them one of Terra Community College's largest and best benefactors. The contributions have been used by the Coloring of Plastics Program for student scholarships, equipment purchases, and to cover travel expenses for students and instructors to attend CAD meetings. The CAD covers virtually all the expenses for students to attend CAD RETECs, including this one. Individual CAD members and their companies have also supported the Coloring of...
Plastics Program with equipment donations. One example is an injection molding machine and a laboratory balance from Bruce Mulholland and Ticona. Many companies, too numerous to mention, have donated resin and colorants, enough that Terra has not had to purchase any since the program's inception. Technical support and guest lectures are also an area where CAD members have supported the program. One of the courses in the program, entitled Colorants for Plastics, consists of several well known industry guest speakers giving lectures and conducting laboratory experiments. Subjects covered in the course include: Organic pigments; Inorganic Pigments, Dyes, Dispersion, Color Formulating, and Color Concentrates. CAD members donate their expertise and time to make these classes informative and pertinent for our students.

CURRICULUM
The students in Terra Community College's Coloring of Plastics Program can earn a Two-Year Associate of Applied Science Degree. Also available to students is an Associate of Applied Science Degree in Plastics. The Associate Degrees consist of between 60 and 65 semester credit hours. Many students get a dual degree in Coloring of Plastics and Plastics by taking an additional six courses. Also offered are certificates that are shorter in duration that the Associate Degree. They include certificates in Plastics, Plastic Machine Maintenance, and Coloring of Plastics. Individual courses needed for each of the above degrees and certificates can be found on Terra's website terra.edu.

PLASTIC LABORATORY EQUIPMENT
Terra Community College's Plastics Program is blessed with a well equipped laboratory for the students to use and experiment with. The official name of the lab is: The SPE Center for Plastics Technology in honor of the great contributions of the CAD to the program. The focus of the program is practical application of the knowledge learned in the classroom. That requires the lab must have equipment that is actually used in the industry available for the student's use. All the equipment in the lab is owned by the college, there is no equipment on consignment.

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ANALYSIS OF COLORANTS IN PLASTICS
WITH SPEED AND EXECUTION
Constantinos Nicolaou, Sun Chemical Corporation Colors Technology, Cincinnati Ohio.

The analysis of colorants in plastics may be used for a variety of purposes such as reverse engineering (de-formulation), migration, decomposition, contamination, confirmation of composition, quality control or to identify causes of failure.

Identification and measurement of colorants in plastics can present a very difficult challenge to the analyst due to the low solubility of both the colored pigment and the polymer matrix and to the low concentration of colorants. The colored plastic may also contain a variety of additives (plasticizers, inorganic fillers, antioxidants, fire retardants, antistatic agents and cross-linking agents), including other polymers, which are used to enhance the properties of the plastic material. Due to the complex formulation the analyst must have a good working knowledge of plastics technology to succeed.

Spectroscopic techniques such as mass spectrometry, infrared spectroscopy, visible light spectroscopy, X-ray fluorescence spectroscopy, X-Ray diffraction, Raman spectroscopy or Chromatographic methods including High performance liquid chromatography(HPLC/UV-Vis), liquid chromatography-mass spectrometry (LC-MS), gel permeation chromatography with UV-Vis detection (GPC/UV-Vis) and thin layer chromatography (TLC) could be employed depending on the sample type and size, and number and amount of colorants present in the plastic.

In this article the basics of solid probe mass spectrometry are provided. Two examples will be shown to illustrate the applicability of solid probe mass spectrometry for the identification of colorants. This technique requires experienced mass spectrometry analysis and results can be obtained within an hour.

Application of solid probe mass spectrometry for the identification of high performance pigments.

Solid probe Mass spectrometry can be used to obtain molecular ion and fragmentation ions of many organic colorants including high performance pigments by direct analysis of the plastic using electron impact ionization, using only a few mg of sample. This is particularly useful for colorants in polyolefins and other aliphatic polymers which do not interfere with the fragmentation ions of the organic colorants using the E.I. ionization mode. Solid probe mass spectrometry is not amenable to metal salts of organic pigments due to their decomposition upon heating. (LC-MS and HPLC is the technique of choice for metallized pigments).

Example 1A is related to a customer request to identify the colorants in a lightly tinted violet LDPE film that exhibited good light fastness. This film was analyzed directly by E.I ionization using temperature ramp from ambient to 500°C. Two pigments were identified, PR122 m/z = 340 and PV23 m/z 590-594. The relative amount of each pigment was not measured in this case but it could done by analyzing mixtures of the two pigments under the same conditions. The Mass spectra are illustrated below.

![PR122 CAS # 980-26-7](image1.png)

![PV23 CAS # 6358-30-1](image2.png)
Mass Spectrum of unknown Violet tinted LDPE by A Solid-probe Mass Spectrometer (m/z 340 is from PR122 and Ions at m/z 590/591, 555 and 520/521 are from Violet 23)

Example 1B. Customer request to match the shade of a violet cloth fiber. The mass spectrum of this sample obtained from a few mg of the cloth under similar conditions as above. Showed a mixture of pigments. PV19 m/z= 312 and PR179 m/z=. 418

C.I. Pigment Red 179, CAS No. 5521-31-3

C.I. Pigment Violet 19, CAS No. 1047-16-1

Mass Spectrum of Coral Fiber by Solid-Probe Mass Spectrometry (Ion at m/z 418 is the molecular in of PR179 and ion at m/z 312 is the molecular ion of PV19)

Acknowledgments: Special thanks to Dr. Yong Xu of Sun Chemical for the solid probe mass spectrometry work.

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Boston, May 1, 2005

ANTEC
Registration at ANTEC was 2658. A total of 168 registrants attended 19 Society seminars.
From the Council Floor

Rebates
The Council discussed the disposition of rebates and accepted the proposal drafted by a special subcommittee chaired by Bill O’Connell. Most changes to the rebates will take effect in 2007 with the one exception that rebates in 2006, while based on the prior system, will be paid quarterly.

New Charters
The Council approved the charter of the Flexible Packaging Division. Two new SIGs were presented to Council: Nanotechnology and Micromolding. A student Chapter was established at the University of Mississippi.

Awards & Recognitions
In addition to the recognition of the retiring administration, two additional awards were given out. The Michael Cappelletti Excellence Award was given to Bill O’Connell and the James Toner Service Excellence Award was given to Tobi Gebauer. Outgoing President Karen Winkler thanked her Executive Committee for their hard work. Incoming President Len Czuba introduced his Executive Committee. New Executive Committee Vice-Presidents are: Russell Broome, Héctor Dilán, Lance Neward, and William Smith. Paul Andersen is the 2005-2006 Treasurer and John Szymankiewicz is the 2005-2006 Secretary.

Presentations
Composites Division
$1,500 Harold Giles Scholarship
$1,000 Foundation Scholarship program

Mold Making & Mold Design
$1,000 Student Author Travel Fund

Detroit Section
$2,000 Essay Contest
$2,500 International Education Award in honor of Fred Schwab
$5,000 Robert Dailey Scholarship

Color & Appearance Division
$1,000 donation to The SPE Foundation
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