Chairman’s Message

Dear SPE Color and Appearance Division Members,

Welcome to the Fall Edition of CAD News! It was so nice to see and talk with many of you during our RETEC® held September 22 – 24 2013 in Baltimore. I appreciated the discussions especially where comments were given on how CAD could better serve you through CAD RETEC®, ANTEC®, our website, local group support - we are always looking for feedback - please feel free to contact myself or any of the other board members listed at the end of the newsletter with your suggestions.

Since we are close to Thanksgiving, I would like to take moment to give thanks for the following: RETEC® Chairpersons – Tom Rachal (Tronox) was the chairperson for the Baltimore CAD RETEC® with Steve Esker (Paramount) as his vice-chair. Tom’s recap of 2013’s CAD RETEC® is in this newsletter. He provides an excellent account of the Conference which will provide fond memories if you were there. If you did not attend should provide support for you to attend the 2014 CAD RETEC® which will be held in New Orleans – September 14-16. It will be chaired by Earl Balthazar (DataColor Inc.) along with his vice-chair Mark Freshwater (Lansco). The time and leadership these people provide to coordinate the efforts for the CAD RETEC® conference outside of their daily responsibilities is very much appreciated!

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CAD RETEC® Committee Chairs and Members – From the technical chairpersons who formulate the two day technical program, to the committee chairs of tabletops, communications, publicity, registration, charity run/walk and all other areas that are required to ensure that all the needs are met for our attendees. To the committee members - the show could not go on without you!!

Corporate Sponsors – All of the work mentioned above would be very difficult to carry out without the financial support from our twenty plus sponsors both for the conference itself and for allowing members in their organizations to participate as a Board/Committee member. THANK YOU!!!

ANTEC® Chairpersons – Scott Heitzman (Sun Chemical) lead the CAD efforts for the 2013 ANTEC® earlier this year in Cincinnati. The 2014 ANTEC® will be held in Las Vegas (April 28-30) - Doreen Becker and Sharyl Reid, both from A Schulman, are in charge of the CAD technical program. At this show we support the SPE group organization and work towards generating interest in CAD. Thanks for making this happen! continued on page 2
Chairman’s Message (continued)

Speakers/Moderators/Exhibitors – Without people willing to do research and present their findings, moderate the technical sessions or exhibit their products – we would have no conferences!! Thank you for stepping forward and being our stars!

Attendees – Conferences do not exist without people attending them! This year I was asked on several occasions if the CAD RETEC® should only occur every two or three years like the NPE/KFair. The attendance numbers show differently – after the strong showing in 2012 at Louisville for the 50th anniversary of CAD RETEC®, with attendees numbering 480 – the 2013 CAD RETEC® (a KFair year too) drew 507 people. We added 134 SPE memberships at the 2013 RETEC®, which is a CAD RETEC® record. Thanks for being there and continuing to give us the attendance for CAD RETEC® to be an annual event.

CAD Board members – I am truly honored to be serving as the chairperson of our Board for the 2013/2014 term. Thank you for giving your time to find ways to enrich CAD.

I wanted to give a special thanks to Mr. Willem De Vos(CED of Society of Plastic Engineers), Jamie Gomez(CAD’s Executive Committee Liaison), and Barbara Spain(SPE’s Events Program Manager) for attending our CAD RETEC® this year and gaining a better understanding of why CAD has a vested interest in SPE’s operations. Jamie was able to attend our board meeting on Wednesday and Barbara worked both registration and the SPE CAD survey table top which was a great service!

This newsletter doesn’t happen without the work of Jamie Przybylski as our editor! Jamie is a professor at Terra State Community College which is a good school to provide training for industry members or students for internship/co-op opportunities. The program has been struggling to attract students and Jamie would appreciate any prospective students you could send his way. See the ad in this newsletter for more details. Please contact Jamie with any questions about their upcoming Spring Semester which begins January 13, 2014.

Thank you for taking time to read our CAD News! Happy Thanksgiving and enjoy the holidays!

Best Regards,
Ann Smeltzer
CAD Chairperson

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. The site is is not completely current at this time, as we are in the process of giving it a makeover and new launch in January.

Click here for the link to view:

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") 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:
Scott Aumann, Phone: 912 210 0175
Email: Scott.Aumann@merckgroup.com.
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The Color and Appearance Division (CAD) commits to the publishing of at least three newsletters a year (four, if there is sufficient material to justify the extra issue). Each newsletter is electronically distributed to our membership of nearly 1,000. Each sponsor’s art directly links to the company’s website.

In addition, we print one of these newsletters on 80# gloss coated stock. All electronic versions are also posted on the SPE website where it available for anyone to download.

For the small donation of $300 per year, we offer a business card sized (2 x 3.5 inches) mention in our newsletter,

We currently have the following slots available for sponsorship:

(2) 2 x 3.5 inch or (1) 4 x 3.5 inch

If interested in learning more, please contact:
SCOTT AUMANN Phone: 912.210.0175
Email: Scott.Aumann@merkgroup.com

SPE CAD NEWS, Fall 2013
SPE Color & Appearance Division Mission Statement

The Color and Appearance Division of SPE strives to educate, train, inform and to provide professional interaction opportunities to the global community involved in visual performance and aesthetics of plastics.

Connect With SPE CAD Via Social Media

Join SPECAD’s Group On Linked In 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

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 CAD 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.

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!

SPE CAD NEWS, Fall 2013
As Mother Nature turns the seasons from the warm days of green September to the crisp brown days of late October, so too must our season close on another successful CAD RETEC®. However, before CAD RETEC® 2013 is but a distant memory, let’s journey together through the season one more time.

CAD RETEC® 2013 was born about three years ago when the Site and Theme Committee of your Color and Appearance Division chose Baltimore as the location of the 51st CAD RETEC®. Baltimore, as a destination, offered easy travel access for most of our members and the scenery of the Inner Harbor District was outstanding. I volunteered to chair the conference and Steve Esker from Paramount Colors agreed to serve as the Vice-Chair. Based on the space requirements for a conference of this magnitude and with guidance from Visit Baltimore, we narrowed the list of potential hotels down to four, eventually choosing the Marriott Waterfront as the host hotel.

Each CAD RETEC® theme is often influenced by the location of the conference. The theme of this year’s CAD RETEC® was “Color Comes Alive”, illustrated by our multi-colored crab logo seen throughout the proceedings. We chose the theme “Color Comes Alive” to capture the vibrancy and the energy that exemplifies our respective industries. From the parts to the pigments, to the processes and the products, ours is a vigorous, and dynamic undertaking made possible by people who have a passion for color. Yet while passion drives innovation, we must not lose sight of the fact that it is the people who put that innovation into practice and challenge us toward continuous improvement.

Even as we face the continuous improvement challenge in our daily work environment, each CAD RETEC® faces the challenge of improving over the previous year’s conference. That challenge inevitably starts with the Technical Program. Brenda Mullins from Clariant accepted the challenge and crafted an excellent program which was enjoyed by all attendees. The technical program started with our keynote speaker, Dr. Jeremy Nathans from the Molecular Biology and Genetics Department at Baltimore’s Johns Hopkins Medical School. Dr. Nathans wowed the audience with his presentation of Human Color Vision and graciously engaged a Q&A session for almost 25 minutes afterwards. What a great way to begin a CAD RETEC®!

Holding to our tradition CAD RETEC® began with a pre-conference tutorial, “Coloring of Plastics” taught by Bob Charvat. A senior member of SPE since 1969, Bob received the "Outstanding Achievement Award" from the SPE Color and Appearance Division in 1985 and the Society’s Honored Service Member 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. For all his well deserved honors and accolades, Bob is an educator at heart. If you’ve never been to one of Bob’s seminars or tutorials, put it on your bucket list. You are in store for one of the most entertaining educational experiences you can imagine. CAD RETEC® 2013 Bob welcomed 17 students from very diverse backgrounds into his “Coloring of Plastics” world. Each left with a greater understanding of colorants and colorant performance in plastics.

Following the “Coloring of Plastics” tutorial our Welcoming Reception was held in Marriott Waterfront’s Grand Ballroom. As always, the sounds of Color Eye Blind, entertained those in attendance. The Color and Appearance Division is the only Division (that we know of) with its own house band, made up of talented musicians from within the Division. Color Eye Blind’s music tends toward the blues-classic-southern rock genre, so it is best played loud. If you were at the Reception and listened carefully you discovered the lyrics to many of their songs were changed to reflect subjects related to the coloring of plastics. Color Eye Blind first appeared at CAD RETEC®1998 in Cleveland, OH where they played during the Welcome Reception at the Rock and Roll Hall of Fame and Museum. CAD RETEC® 2013 marked the 15th anniversary of this first appearance.

CAD RETEC® always offers the opportunity to learn about the latest technologies related to the color and appearance of plastics. In addition to the presentations at the technical sessions, approximately 62 companies chose to display their wares at our table top exhibits. Many exhibitors commented positively about the traffic flow throw the exhibits. Several more exhibitors were very pleased that their advertising dollars at CAD RETEC® stretched so far. Given the number of attendees who walked the table top area and who took time to discuss their needs with the exhibitors, those advertising dollars were indeed well spent.
For the last several years CAD RETEC® has offered a “Fun Run” to its participants. Not only does the Fun Run encourage physical activity among members, but it also enables the Color and Appearance Division to give back a little to the communities which serve as our host. For a modest registration fee each participant gets a uniquely designed CAD RETEC® “Fun Run” tee shirt and the opportunity to connect with like-minded running buddies. All registration fees go to support the local chapter of Habitat for Humanity. The great part about this endeavor is that CAD matches the registration monies collected to essentially double the donation. This year CAD RETEC® donated $1,875 to Habitat for Humanity of the Chesapeake. Thanks to everyone who participated and to Noella Maclean of Dominion Colour for arranging all the “Fun Run” activities.

Even though CAD RETEC® has a long standing relationship with Habitat for Humanity, this year we wanted to do a little more. In keeping with our Color Comes Alive theme we partnered with the Marriott Waterfront to offer the “All Things Pink” coffee break on Monday afternoon. For those who attended the break in the exhibit area you enjoyed pink jelly beans, pink ribbon cookies, strawberry cupcakes, pink lemonade, and a host of other goodies, all colored pink. “All Things Pink” has a very special meaning to the Baltimore Marriott Waterfront. In 2008, their Director of Event Planning, Jessica Phillips, lost her battle with cancer. This break displayed all that she loved, and it was presented in memory of her. Jessica is still regarded with particular esteem and affection. She was a large part of the conference world each and every day. Jessica was also very passionate about helping children in need. Ten percent of the proceeds from this break were donated by Marriott Waterfront to the “Children’s Miracle Network” in honor of Jessica Phillips. CAD RETEC® 2013 was happy to match this donation. All told, $950 was donated to Children’s Miracle Network with the expectation that another child will experience a world alive with color.

On the final day of the conference the Color and Appearance Division celebrated “Color Comes Alive” at our annual Awards Banquet. The Awards Banquet offers us a chance to recognize those who give back to the Color and Appearance Division. Several members from our Board of Directors have completed their three-year term on the Board and were thanked for their service. Jim Figaniak from LTL Color Compounders was acknowledged as the Board’s past Chair and Ann Smeltzer from Clariant was greeted as our current Chair. The Awards Banquet also gives us the opportunity to thank the corporate sponsors, whose generous financial support helps to fund many of our activities. No fewer than twenty corporate sponsors contributed to the success of CAD RETEC® 2013.

We also recognized the Best Paper from last year’s CAD RETEC® as well as the Best Paper from the Color and Appearance Division session at ANTEC® 2013. Roger Reinicker from BASF received the Best Paper Award from CAD RETEC® 2012 for his presentation of “Advances in Organic Pigments 1962 – 2012. The ANTEC® award went to Phil Niedenzu from DuPont Titanium Technologies for his paper entitled, “Relationship of Opacity with Titanium Dioxide Content and Film Thickness”. These authors have to prepare the paper, get it past the critics, then prepare the PowerPoint presentation and the words that go with it, and must be prepared to defend their work. Each received a plaque and our appreciation for a job well done.

Two special awards were presented this year. The Terry Golding Outstanding Achievement Award was presented to Steve Goldstein of Clariant for his work on educational PowerPoint presentations for the Division, including his work on specifications and test methods for colorants. The other special award went to Sandra Davis of DuPont Titanium Technologies to recognize her for her work over the last 10+ years as the overall Technical Program Chair for CAD RETEC®. We are grateful to Steve and Sandra for their tireless efforts on behalf of CAD.

Our present journey is complete. The CAD RETEC® 2013 season has ended and the memories now fade into a sea of midnight blue. Still the seasons tumble ‘round and the dawn breaks on a new CAD RETEC®. There are papers to be written, presentations to be prepared, and plans to be made. I invite you to join me at CAD RETEC® 2014 in New Orleans from September 14-16 as we celebrate It’s a Colorful World. We’ll pass a good time there.
The Panel Discussion held during the 2013 CAD RETEC® in Baltimore was well attended by an audience which participated using an audience response system and asked many questions of the panel. This was the second year an audience response system was used to poll the audience on the issues discussed. Ten questions were asked of the audience during the Panel Discussion and their answers appeared on the overhead screen within seconds which added the audience’s input to the discussion.

The panel was made up of three experts in different areas impacting the coloration of plastics and was moderated by Frank Lavieri, the General Manager of LANSCO COLORS. The panelists were as follows:

Martha Moore is an economist from the American Chemistry Council and an expert on the impact of low cost shale gas and the impact it is having on the entire US chemical industry, including plastics.

Simon Thayil is a Director of Color at UNDER ARMOUR and a strong advocate of the use of spectrophotometers instead of humans to manage the color quality of products throughout their supply chain.

Doreen Becker is a Strategic Account Manager for A. Schulman and well plugged into color trends.

Warm up Questions
The audience was asked three warm up questions to get accustom to the audience response system and collect data to be used for planning future RETEC®’s.
Low Cost Polyethylene
The Panel Discussion opened with Martha Moore presenting information about how low-cost natural gas being captured with “fracking” technology has caused a monumental change in the competitiveness of the US Chemical Industry. She presented the following chart showing that in 2005 North America had among the highest ethylene cost in the world whereas in 2012 it had the second lowest cost, right behind Saudi Arabia, and much lower than China and Western Europe. She told the audience that the US will shortly become a net exporter of polyolefin resins and that this trend will add 500,000 jobs to the US economy.

Panel Discussion Summary (continued)

Human versus Spectrophotometer
More than half of the 90 minute Panel Discussion centered on the question of whether a human makes better pass/fail color decisions than a spectrophotometer. Simon Thayil was a strong advocate of using only spectrophotometers to make these decisions and offered several reasons for this. He cited reasons such as the lack of bias, ability to work 24 hours per day, 7 days per week and their predictable tolerances.

Simon found the audience to be a tough sell. The audience poll taken before the discussion indicated 60% believed a human made better color decisions. Doreen Becker was a more than capable foil for Simon and made several points on the limitations of spectrophotometers in measuring transparent colors, special effects, fluorescents, and metamerism to name a few. The debate between Simon and Doreen was reminiscent of the Dyes versus Pigments debate held at the Toronto CAD RETEC® in 2002 and was just as entertaining.

Simon, who did not back down, went further to talk about a project he had worked on comparing color matches made by humans versus spectrophotometers. He made the point that a blind person using a spectrophotometer made better color matches than a sighted, skilled color matcher and donned a pair of dark sun glasses to make the point. He showed a display of plastic chips which had been matched on fabric using only a spectrophotometer. 68% of the audience when polled at the beginning of the discussion believed a human does a better job matching colors compared to a spectrophotometer and judging by their skepticism expressed in the questions during the discussion were not swayed.

Color Trends
The final discussion topic involved color trends and was a good warm up to Doreen’s presentation the next day. The economy and mood of the country were described as key drivers to color trends and Doreen talked about why color trends were important.
We also learned from Simon a little about what goes into choosing the color of products at UNDER ARMOUR, which reportedly is quite involved and entails negotiations between the various stakeholders. Interestingly, the cost of the color used to produce a product is generally not a consideration in new product development.

Wrap Up
The discussion was wrapped up by polling the audience about how optimistic they are about the future of the Plastics Industry on a scale of 1 to 10, with 10 being the most optimistic. Below is the data which shows that generally they had a positive feeling.
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: $450 Ohio students/$700 out-of-state
- Books: Approximately $200
- Offered Fall 21013 (August 19 – December 13)
- Offered Spring 2014 (January 13 – May 8)

**Section VI. PET 1240 Introduction to Color** (3 Credits)
- Fees: $450 Ohio students/$700 out-of-state
- Books: Approximately $200
- Offered Fall 21013 (August 19 – December 13)
- Offered Spring 2014 (January 13 – May 8)

**Section VI. PET 2320 Colorants for Plastics** (4 Credits)
- Fees: $600 Ohio students/$900 out-of-state
- Books: Approximately $150
- Offered Spring 2014 (January 13 – May 8)
While training new colorists an instructor used the analogy of a GPS navigation system to get to a baseball game as follows: The GPS will show the way to the city, and then to the stadium. GPS cannot find the reserved seat. Once at the ball park technical skill and experience are required. So it is with color matching. Zeroing in on the match requires skill and experience.

Those directly involved with coloring of plastics are definitely aware computer color matching systems do not perform as perfectly for plastics as they do for coatings. Take a color target to a local hardware or builder supply who will scan a target (the target may be a textile, paint, plastic or printed matter) on a spectrophotometer/colormatching system, print a formula, add the formula ingredients to a tint base resulting in what is hopefully a color match right on color. It is important to recognize the matching system is working with a color pallet of 12 to 14 colorants added to a known tint base. Why doesn’t it work as well in plastics? There are many reasons! The base (plastic) may not be known to the matching system. The available color pallet choices are in the thousands, not just 12 to 14. Varying processing steps for the colored plastic may influence the observed/measured final color. Finally, the match standard composition may vary as noted earlier. This list is not inclusive!

One way of defining an exact color match is to observe the distance between the target and sample. Color memory is very limited. Having a target and sample just 0.8 millimeters apart negatively impacts the ability to observe small color differences. Most plastic targets and samples are observed side-by-side and in physical contact.

Another factor has to do with value. One of the most difficult color match situations are expensive grand piano keys. The color match between adjacent grand piano keys must be spot on! At the lower end of the value scale, are disposable plastic dinner plates and cups. If there is only one off color plate or cup in a large stack of either the plates or cups the whole package plates or cups will be judged as defective since that one off color item will become so completely obvious.

Where did the neat striping on the baseball playing fields come from? It results from how the grass is rolled during mowing. When a mower moves in one direction the grass blades are bent one way so the first surface reflection of the grass blades may appear lighter. When the mower moves in the opposite direction the grass blades may appear darker. A similar effect may well appear in textiles due to the nap of a fabric. With coatings, surface texture is built in to the paint formula and is included as part of the match. In plastics, the mold surface provides texture to the part. If the mold is polished the part appears darker. When a mold is textured and or matte the part appears lighter regardless of a computer generated acceptable color match.

That’s all for this Color Mischief. However, the last line in the body of this essay underlines the words acceptable color match. Some implications of just what an acceptable color match really is may be shrewdly implied in this essay, but needs further examination which will be coming soon.

As always, the covert authors of this note choose to remain anonymous to preserve their dignity and physical well being.

LOOK FORWARD TO MORE “COLOR MISCHIEF” ARTICLES IN FUTURE ISSUES!
<table>
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<td>Jeff Drusda, 570-668-8321</td>
<td>Terra Community College</td>
<td>Lansco Colors</td>
<td>Nubiola</td>
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<td></td>
<td><a href="mailto:jprzybylski@xxxtx.rr.com">jprzybylski@xxxtx.rr.com</a></td>
<td><a href="mailto:Frank@xxskpigments.com">Frank@xxskpigments.com</a></td>
<td><a href="mailto:n.karszes@xxxnubiola.com">n.karszes@xxxnubiola.com</a></td>
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<td></td>
<td>Austin Reid, 228-255-2362</td>
<td>Bruce Mulholland, 859-525-4756</td>
<td>Tracy Phillips, 770-995-0887</td>
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<td></td>
<td>DuPont</td>
<td>Ticona</td>
<td>Uniform Color</td>
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<td><a href="mailto:Austin.h.reid-jr@xxusa.dupont.com">Austin.h.reid-jr@xxusa.dupont.com</a></td>
<td><a href="mailto:bruce.mulholland@xxxticona.com">bruce.mulholland@xxxticona.com</a></td>
<td><a href="mailto:lpillips@xxxuniformcolor.com">lpillips@xxxuniformcolor.com</a></td>
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<tr>
<td>Immediate Past Chairman:</td>
<td>Roger Reinicker, 302-992-1252</td>
<td>George Rangos, 724-229-5371</td>
<td>Tom Rachal, 405-775-5014</td>
</tr>
<tr>
<td>James Figaniak, 215-736-1126</td>
<td>BASF Corporation</td>
<td>Ferro Corporation</td>
<td>Tronox, LLC</td>
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<td></td>
<td><a href="mailto:roger.reinicker@xxxbasf.com">roger.reinicker@xxxbasf.com</a></td>
<td><a href="mailto:rangosg@xxterferro.com">rangosg@xxterferro.com</a></td>
<td><a href="mailto:tom.rachal@xxstronox.com">tom.rachal@xxstronox.com</a></td>
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<td>Mark Tyler, 859-372-3221</td>
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<td>Jim Rediske, 412-809-3777</td>
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<td>Councilor:</td>
<td>Ticona</td>
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<td>LanXess</td>
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<tr>
<td>Sandra Davis, 302-999-2540</td>
<td><a href="mailto:mark.tyler@xxxticona.com">mark.tyler@xxxticona.com</a></td>
<td></td>
<td><a href="mailto:jim.rediske@xxlanexx.com">jim.rediske@xxlanexx.com</a></td>
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<td><a href="mailto:sandra.p.davis@xxxdupont.com">sandra.p.davis@xxxdupont.com</a></td>
<td></td>
<td>Brian West, 865-425-2113</td>
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<tr>
<td>Treasurer:</td>
<td>Bruce Mulholland, 859-525-4756</td>
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<td><a href="mailto:bwest@xxxtechmerpm.com">bwest@xxxtechmerpm.com</a></td>
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<td>Secretary:</td>
<td>Brenda Mullins, 678-237-2975</td>
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<td>Brenda Mullins, 678-237-2975</td>
<td>clariant corporation</td>
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<td><a href="mailto:Brenda.mullins@xxxclariant.com">Brenda.mullins@xxxclariant.com</a></td>
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</table>

Please note: The email addresses above contain xxx which should be ignored when actually emailing. The purpose of the triple “x” is to render the automated spam grabbers useless.