A NEW DECADE OF CHALLENGE

RETEC
OCTOBER 8-10, 1990
CHARLOTTE, NC

The 90's in the Twentieth century will probably not go down in history as The Gay Nineties as they did in the Nineteenth, but the challenges and problems facing us today may lead to breakthroughs that will result in a safer and environmentally cleaner quality of life for the future.

This RETEC will provide information to assist you in meeting the needs of tomorrow. A variety of topics will include quality improvement, photodegradation, synthetic fibers, alternatives to heavy metal replacement, advances in color measurement and teaching the use of fluorescent pigments, and an update on regulatory issues.

Join us in the Queen City - Charlotte - for the Main Event of the CAD's 30th Anniversary Year!

Monday, October 8

Guide to Teaching Color to People
Frederick T. Simon, Color Consultant

The Color Matching Program - A New Horizon in Plastics Education
David Bryan, Terra Technical College

The Essence of Pigment
John Guzi, Ciba-Geigy, Pigments Division

The Future of Color
Dr. James W. Nuss, Engelhard Corporation

Alternatives for Cadmium Pigments
Russell P. Steimle and Michael W. Corcoran, BASF Corp.

BUFF Titanium Dioxide, A Unique Formulating Alternative
Sara M. Robinson, Hitox Corp. of America 15

A Unique Approach to Color Extension
Luerne Erickson, Spectrum Colors

Dennis Caton, Pacemaker Ltd.

Using Fluorescent Pigments in Plastics
Henning Bunge, Day-Glo Color Corp.

Stabilization of Nylon-6 Fibers
James H. Botkin and Andrew Leggio, Ciba-Geigy, Additives Division

(Continued on page 3)

CHAIRMAN'S CORNER

Now that ANTEC 1990 and the elections are behind us, we are looking at a new year for the Color and Appearance Division. Reflecting back for a moment, ANTEC 1990 in Dallas was well attended and very informative to all attendees. Heavy metal, as much as we are all tired of hearing about the subject, is still the major challenge we are all facing in today's environment.

The election this Spring for positions on the CAD Board of Directors and the Technical Program Committee attracted some good people. This was one of the strongest fields of candidates I have seen in a long time. I am glad that I was not on the ballot this year. I do hope the people who didn't make it this year will try again next year as we need people on the Board and the TPC who are enthusiastic and will work for their Division. If you would like to get involved and can attend four meetings a year, let me have your name.

In the last two years the Color and Appearance Division has appropriated $30,000 for the Color Technology Program at Terra Technical College in Fremont, OH. This scholarship money is an investment in our future. As soon as the color-matching program can function without major support from the CAD, we would like to start a similar program at another school in a different region of the country.

On October 8-10, 1990, we will have our RETEC in Charlotte, NC. This RETEC, as the ones in past years, promises to be outstanding. As I look at the program with its broad array of topics, it is indeed the first step in preparing us for the challenges we face in the new decade. After the papers, have some fun at one of the finest golf courses in the Carolinas. Get your registration in early.

For the new year, we have some changes in the Newsletter, education, awards and public interest. John Adams, the former Newsletter Editor, will take on the position of public interest. Jack Graff, the former Education Chairman, will take over the position of Newsletter Editor. Bruce Muller will turn over the awards committee Chairmanship to Frank Fasano. The Education Committee will be chaired by Tim Lewis. The two positions of National Councilor and Divisional Coordinator will, as in the past years, be held by the very able Bob Charvat. Kelly Kyle will continue as Business Manager for the Newsletter. Bob Zeller will continue as PRIDE Chairman and Jack MacMillan as Membership Chairman. To the various people who have held these positions in the past, I say "Thank you," for a job well done and to the people in the new positions, "Good Luck." I know you will serve as well as you have in all the other jobs you have held with CAD. To John Copp, the new past Chairman, "Thank you," for a job well done this past year.

DON DEEM

TERRA TECH COLOR PROGRAM BEGINS SECOND YEAR

At least eleven new students have enrolled for Fall Quarter in the Plastics Engineering Program at Terra Technical College in Fremont, according to Gordon Saam, Director of the Engineering Division. They will join nine returning full-time students for the specialized program at the two-year technical college in Fremont. All of these students will be eligible for the color matching major within the program, according to Saam. A prerequisite is successful completion of the color hue test.

(Continued on page 6)
SPE COUNCIL CHARTERS NEW GROUP, ADOPTS BUDGET

ANTEC
Attendance at ANTEC was 4,807 comprised of the following:
Advance Registrations 2,863
On-Site Registrations 1,614
Seminars 330
TOTAL 4,807

It was SPE's third largest ANTEC ever and total registration was outstanding in view of a location somewhat removed from a heavily populated plastics processing area. Registration income once again exceeded three-quarters of a million dollars.

NEW GROUPS
Council chartered the following new SPE groups:
1. Rio Grande Section - Encompassing Western Texas and Southeastern New Mexico and centered in El Paso.
2. Arkansas Section - Embracing the entire state
3. Virginia Section - Including all but the western part of the state and centered about Richmond.
4. Advanced Polymer Composites Division - which had been operating with great success for the past two years as a Division-in-Formation.
5. Winona State University (Minnesota) Student Chapter.

The name of the former Virginia-Carolinas Section was changed to Carolinas as a result of the chartering of the new Virginia Section.

FUTURE ANTECs
Toronto was selected as site of the 1997 ANTEC utilizing the downtown Convention Center for meetings and exhibits. Atlanta, site of the successful 1988 ANTEC, will again be the host city in 1998.

ELECTIONS
Vice President, International, Klaus-Dieter Johnke, was confirmed by the Council in accordance with the bylaws for the two-year remaining portion of the four-year term to which he was first elected in 1988.

CONSTITUTION AND BYLAWS
Four bylaw amendments were adopted which provided rebates for two years to Divisions-in-Formation and reversed the order of rank and election of the Secretary and Treasurer. It had been reasoned that the Treasurer's position required greater knowledge of SPE activities and opera-

SPE OFFICERS 1990 - 1991
President - Leonard H. Drexler
President-Elect - George W. Thorne
First Vice President - Henry J. Wojtaszek
Second Vice President - Lance M. Neward
Vice President for International Affairs - Klaus-Dieter Johnke
Treasurer - Bonnie Dieter Johnke
Executive Director - Robert D. Forger

FINANCES
An operating budget with a total income of slightly over $5.4 million was adopted including 11 of 12 proposed Special Projects. Projected operating surplus is but $300. Developing a surplus in the year to come will again depend heavily on the success of the 1991 ANTEC in Montreal and the educational seminar program which includes courses to be offered at NPE in June 1991.

New rebate schedules were adopted, establishing rebates to Sections and divisions as a percentage of dues rather than utilizing flat dollar amounts. With this change, it will not be necessary to adjust the rebate schedule whenever dues are increased.

CRITICAL ISSUES
The Council adopted a Position Statement on Plastics Waste Management urging active participation of all members and all government levels in an effort to provide sound technical information to those involved in discussion and legislation regarding waste management.

THE 1990-1991 YEAR
Incoming President Leonard H. Drexler selected "VISION" as the keynote for the year. He defined it as a "look into the future as we want it to be." His goals for the year are centered about the theme:
TO DO THE BEST
FOR OUR MEMBERS by satisfying the needs of our membership
FOR OUR PROFESSION by improving and enhancing the plastics engineering profession.
FOR OUR SOCIETY by improving the quality of the Society.
FOR THE PUBLIC by informing the public on the facts regarding plastics so that they can make educated decisions.

Councilor Color and Appearance
Robert A. Charvat

Color and Appearance Division 1990 - 1991

OFFICERS OF THE BOARD
Chairman Don Deem
Chairman-Elect Charlie Bradshaw
Treasurer John Hackman
Secretary Brian West

MEMBERS OF THE BOARD
1991 - Dick Abrams
Jeff Parker
Bob Zeller
Jack MacMillan

1992 - John Adams
Linda Kartoz
Bruce Muller
Tom Pfeiffer

1993 - Jack Graff
Frank Fasano
Ron Harris
Tim Lewis

TECHNICAL PROGRAM COMMITTEE
Chairman Regina Wojciechowicz
Chairman-Elect Earl Sexton
Treasurer S. George Rangos
Secretary

TPC MEMBERS
1991 - Bruce Mulholland
Terry Golding
William Jarrett
1992 - Mike Corcoran
Pam Gardner
Andrew Haber
1993 - Gary Beebe
Bob Henson
Dennis Meade
C.A.D. People

The purpose of this column is to keep you informed of the happenings of your friends and acquaintances in the Color and Appearance Division. If you have any good news of a colleague, please forward this information to the editor or to John Copp (The Dow Chemical Company, 433 Building, 3rd Floor, Midland, MI 48667).

**Joe Boys** of Shepherd Color Company had a perfect 300 game this year. A change in your grip and back swing could help your game Joe.

In other sports news, **Harry Sarvis** and **Al McKinney** of Ferro's Pigment Division both broke 120 (which side?) on a tough upper mid-west golf course.

Productivity at Reed Plastics - Albion, Michigan plant must be up with both **Jay Lindstrom** and Sara Yawkey expecting additions to their families.

**Joe Turck** formerly of American Thermoplastics and Quantum Chemicals has established a consulting business in Shrewsbury, MA for coloring of plastics.

**Bob Waring** formerly of the PMI Division of Georgia Pacific, has established a new concentrate company in Jasper, TN, called Polymer Materials Inc.

**Brian Stott** formerly of Reed Plastics has accepted a position with PMS In Norwalk, OH.

**Russ Steimle** formerly of BASF Pigments has taken a position with X-Rite, Inc., of Grandville, MI. X-Rite manufactures hand-held spectrophotometers.

**Tim Lewis** of PMS has recently been promoted to Corporate Quality Control Director. Although Tim will remain in Norwalk, he might have Ft. Worth on his mind. Tim has also been elected to the CAD Board of Directors and has taken on the responsibility of the Education Committee.

**Jim Mongiardo** of PMS in Norwalk gets congratulations twice. First for a new daughter and second for his promotion to Plant Manager. Better start banking your increase to pay for your daughter's education, Jim!

**Scott McCallum** of PMS Norwalk has been promoted to Laboratory Manager. Scott was previously Automotive Color Development Supervisor.

**Terry Golding** of Spectrum Colors and **Bill Jarrett** of Kerr McGee have both accepted appointments to fill unexpired terms on the CAD Technical Program Committee.

A number of new people have been elected to the CAD Board and TPC along with board committee assignments. Please review your officer and committee listings. The new faces on the CAD board are **Tim Lewis** of PMS, and for TPC, **Bob Henson** of The Dow Chemical Company, and **Dennis Meade** of Ferro Corporation. Dedicated (sucker?) CAD person of the year award goes to **Jack Graf** for accepting the Newsletter Editor job.

**Scott Johnson**, formerly of Accurate Color, has moved to Thermofil in Brighton, MI, as Color Department Supervisor.

CALL FOR PAPERS

"Elements of Color and Appearance for the Thermoplastics Processor"

JOINT CONFERENCE
Color and Appearance with Thermoplastic Material and Foams Division

RETEC XXV
NEW ORLEANS, LA
OCTOBER 15-17, 1991

Please contact:
Pamela Gardner 304-424-5913
or
Mike Warner 502-826-7641

If you are interested in presenting a paper. Abstracts are due by December 1, 1990. Topics should relate to design/process/problem solving approaches related to coloring polyolefins.
1990 ANTEC Review

The 1990 ANTEC, SPE’s 48th Annual Conference, attracted over 4,800 people in Dallas. The conference was held at the Loews Anatole Hotel, May 7-11. The overall theme of the conference was "Plastics in the Environment: Yesterday, Today, and Tomorrow". The technical sessions included over 500 presentations. In addition, 150 exhibitors participated in the event. A nine hour super session on "Dealing with the Solid Waste Crisis" was also well attended. At ANTEC, Dr. Leonard Drexlker assumed the presidency of the Society. His theme for 1990-1991 is "Vision" - a look into the future as we want it to be. In practice, his theme means "to do the best for our members, for our profession, for our society, for the public."

The Color and Appearance Division's full day session was held on Wednesday, May 9th. Our Division theme was "Colorants: A World-wide Strategy". After opening remarks by the organizer, Bruce Muhlolland, the session was turned over to Bob Charvat. With Bob in charge, the morning went smoothly with approximately 300 people in attendance. Hugh Smith, our first speaker, discussed the changes in regulation and lessons learned by industry, in "Regulation, Defamation, and Inspiration: A Window of Today's World of Pigments".

Next Eric Regert talked about cadmium replacement and options in "Color Considerations in a World Free of Heavy Metals." Eric raised a good question: "What assurance do we have that the organic replacement is any safer to the environment?" Our theme was carried to a practical level as Harnish Jani discussed cadmium alternatives in PVDF, PBTP, and Nylon 6. Several pigment options were identified.

But how do you ship those pigments to Europe? Janos Schulze let us know as he discussed new hazard labeling regulations in Europe. (Actually, he let us know how complex and confusing these systems are and why we need to have regulatory personnel on the payroll!) Janos pleaded that - hopefully - one day a world-wide international system can emerge. To round out the morning session, Andrew Haber presented information on the factors which affect titanium dioxide dispersion in color concentrates. Of course, this information also applies to other colorants.

The afternoon session was moderated by Bill Eaton, and began with a discussion on the "Global Regulation of Inorganic Pigments in Plastics," written by Demetra Balmer. Due to illness, Demetra was unable to attend. Her paper was presented admirably by John Belcastro. In it, Demetra attempted to define what constitutes a heavy metal and concluded it depended upon who you asked. The bottom line in using "heavy metals" is: it is ultimately the customer and his definition which is important.

Again on the practical level, Bob Henson shared with us "Technical Considerations and Challenges to Cadmium-Free Color Matching in ABS." Bob discussed several issues which must be addressed when considering cadmium-free color matching in ABS (or any other resin). These included heat stability, weatherability, migration resistance, properties, dispersion and, of course, cost. He also discussed one more important issue which is typically overshadowed by the rest, metamerism.

The rest of the afternoon was devoted to general topics. First, a student paper presented by Professor Petrie discussing the results of UV energy on pigmented polycarbonate. Sandra Pifer then shared the effect of varying the concentrate carrier resin on the properties of LDPE blown film. Finally, Fred Simon showed us how data interchange can improve the correlation of measurements made using different instruments. An impromptu panel discussion on cadmium replacement also was included to fill a vacant time slot vacated by a no-show speaker. Panelists included John Copp, Bob Charvat, Bill Eaton and Bruce Muhlolland.

All in all, the CAD sessions were well attended and well received. For the first time in a number of years, our room was spacious with excellent audio/visual equipment. Hopefully, this will be a trend which will continue at future ANTECs.

B. Muhlolland

Membership Committee Report

The Color & Appearance Division membership continues to grow along with the Society. Membership at the end of May, 1990 (the latest available figures) indicate that the membership now totals 1653 members. Our primary/secondary membership ratio stands at about 3/1 which is close to the Society average.

Our growth over the last year has been about 4%, which is below Society results. On the bright side, all of this growth has been in primary members. In fact, we have fewer secondary members now than we did one year ago.

We plan to push for new members by setting up and manning membership booths at all of our RETECs. We have found that a good percentage of the attendees at these conferences are not members of SPE or CAD. It is hoped that the success of our RETECs will help membership growth.

The 1991 program has targeted a ten percent increase in membership.

Color & Appearance Division
Historical Membership Growth

![Membership Growth Chart]

Legend:
- 87-88
- 88-89
- 89-90
DON DEEM - CHAIRMAN

CAD

The 1990-91 Color and Appearance Division Chairman is Don Deem of Ampacet Corporation. Don is a graduate of Governors State University, University Park, Illinois and has been a member of SPE and the Color and Appearance Division since 1961. As a senior member of SPE, Don served on the CAD Board of Directors before becoming an officer. Over the years Don has served as Chairman of the Paper Review Committee, reviewing CAD papers for Divisional Sessions at ANTEC. Don has also been a member of the Awards Committee which selects best papers.

Don started in color with Borg-Warner Chemicals in 1958 and has held several positions such as Supervisor, Color Specialist, Customer Color Manager, Division Color Service Manager and Senior Color Engineer after GE Plastic purchased Borg-Warner Chemicals in 1988.

Don joined Ampacet Corp. at its new Corporate R&D Center in Terre Haute, Indiana as Color Manager in January 1990.

Don is looking forward to serving his year as Chairman of the Board of Directors and has set several goals which include promoting color education and expanding CAD membership.

MEMBERSHIP APPEAL

The Color & Appearance Division membership has not been as vibrant as it has in the past. It has been our experience that this Division is one of the "specialist" Divisions within the Society and draws well-supported by its own members. Word of mouth advertising for our RETEC's and our ANTEC program has been a key factor in their unfaltering success.

But let us not forget that the Society exists for its members, and in order for the members to benefit, it is important that the Society not stagnate. For Color & Appearance, we need a constant influx of new people and new ideas to keep us vibrant. Our best advertisers are you, the members.

Please help us keep the strong growth of the Division going. Ask a friend or business associate to join. Or for you sales types, have you considered a gift membership to one of your clients? Have you considered the possibility of winning the Member-Get-A-Member prize - a trip to Hawaii?

You will find a blank membership form in this newsletter. Use it today to make a better tomorrow for us all.

Color and Appearance Division
Treasurer's Report
Fiscal Year 1989-90

Funds Available:

- RETEC 1989 PROFIT: $19,110
- INTEREST: $3829
- SPE MEMBERSHIPS: $3446
- SPONSORSHIPS: $3282
- BEGINNING BALANCE: $53,531

Balance & Expenses:

- SCHOLARSHIPS & STUDENT TRAVEL: $22,000
- MAILING, POSTAGE, PRINTING & STATIONERY: $6650
- CASH AWARDS & PLAQUES: $950
- MEETING EXPENSES: $555
- ENDING BALANCE: $53,811

The 49th Annual Technical Conference of the Society of Plastics Engineers (ANTEC) will be held May 5-9, 1991, at the Montreal Convention Center.

ANTEC is internationally recognized as the most comprehensive plastics conference in the world, covering all aspects of plastics engineering including design, processing, properties, manufacturing and performance.

The theme for ANTEC 1991 is "Plastics - Rendez Vous with Excellence." The theme for the Color & Appearance Division is "An International Approach to Coloring Plastics."

To contribute a technical paper for the conference, you should have already submitted an abstract form. However, if you missed the deadline, it is still possible to have your abstract or call immediately:

Andrew Haber
Tioxide Inc.
9999 Cavendish Boulevard, Suite 100
St. Laurent (Montreal), PQ H4M 2X5
(514) 747-9294

Upon notification that your proposed paper subject is acceptable, you must prepare a review manuscript of no more than eight pages for submission no later than November 15, 1990. The deadline for the submission of the final paper is December 15, 1990.
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SPE MEMBERSHIPS

$3446

SPONSORSHIPS

$3282

INTEREST

$3629

$50,531

Beginning Balance

Balance & Expenses:

SCHOLARSHIPS & STUDENT TRAVEL

$22,000

MAILING, POSTAGE, PRINTING & STATIONARY

$5650

CASH AWARDS & PLAQUES

$950

MEETING EXPENSES

$919

$53,811

Ending Balance

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BIV WHACKS

Dear Readers:
The new editor thought he'd retile this column with something a little catchier than my name. He claims it suits the acerbity of my style.

From separate sources in the last few weeks have come examples of the difficulties encountered when communicating thoughts about color. Both examples are not truly specific to color, but to language problems in general. The temptation is to turn this question over to William Safire or James Kilpatrick, those self-anointed guardians of the English language.

The first example came to me as a legitimate query from a color chemist. A salesman had relayed the question from a customer to the chemist. The addition of a couple of middlemen obviously adds clarity to any question. It's rather like the party game where one person whispers a statement to the person next to him. That person in turn is supposed to repeat the statement verbatim to the next person in line. What comes out at the end seldom bears any resemblance to the original. In any case, what came to me was, "I made a green and it came out darker. Why?"

There was a time when the use of the comparative mandated following the word "than" and then the object of comparison. "Deeper than the ocean." "Colder than a well digger's a____." (We do maintain certain journalistic standards here.)

In this case my response was another question: "Darker than what?" There are several possibilities.

1. Darker than the customer's standard
2. Darker than my standard
3. Darker than the laboratory match
4. Darker than the customer would accept
5. Darker than the computer prediction
6. All of the above

Because I received this question third-hand, I can only guess which situation applies. In any case, the answers to all of these are really quite simple.

1. You are highly perceptive. Add white. 2. Ditto. As an aside, points 1 and 2 need to be examined together. It boggles the mind, but it is not unheard of for a supplier to have one standard and the customer another. Happens more often than we would like to admit. 3. Your production color matcher had a hangover. Fire him! On second thought, don't fire him. Color matchers are too hard to find. 4. Your customer is an a____. (See well digger reference above.) Get rid of him. Customers are easier to replace than color matchers. 5. You are an a____. 6. Your computer is smarter than you.

Let's assume, however, that the problem was that a production trial of a particular green was darker than the approved laboratory match. And the truly obvious causes such as the phase of the moon, El Nino and ozone depletion have been eliminated. Now we have to start digging for the less obvious:

A. An initial calculation error
B. A scale-up calculation error
C. Inaccurate balances or scales
D. Weighing errors

The next step is to examine the lab process against the production process. While it is well-known that lab processes always correlate exactly with production processes and therefore should not be examined too closely, it might pay to check such things as speeds, temperatures, screw designs, back pressures, dwell times and through-put rates. And then there are the less obvious. Is your lab compound one of those all-purpose utilitarian materials while the stuff in your silo is super high test, flame retardant, low cholesterol, high fiber polyethylene with 10% recycled mutant Ninja turtles? Laugh if you will. No one would actually use one compound in the lab and another in production, would they? At least not compounds with large obvious differences. But what about the differences that don't or shouldn't matter? What's a little plasticizer more or less? Or your lab compound uses two parts of Superstab TCH fortified with green sprinkles because you've always used Superstab TCH with green sprinkles. In fact, your grandfather who hired you bought enough Superstab TCH with green sprinkles to last two lifetimes. But your production material is made with Wondersol SLX because no one has made Superstab TCH with green sprinkles since it was found that, like a government agency, it really didn't work very well and it cost too much money.

I hesitate to make my next suggestion because it is so painfully obvious, but in the unlikely event that some unenlightened cretin has read this far, I will put it in the form of a rhetorical question. The pigments or dispersions you are using in production are exactly the same ones you are using in the lab, aren't they? No one, least of all the intelligent, perceptive readers of this column would ever assume that lot-to-lot variability doesn't exist, would they? After all, SPC and SQC have assured us of perfection—zero defects.

Having rambled on long enough to put you sleep, let me return to my original point: When comparing two colors, make sure everyone understands what the standard is.

The second horrible example of fuzzy communication comes from the July issue of Modern Plastics magazine. On page 39 is a sentence which reads in part, "...a supplier buys silo quantities of ABS and then custom colorizes it." Although Ted Turner has been praised and vilified for his efforts to "colorize" old movies, no dictionary I've consulted contains the word "colorize." Ted Turner has enough money to do anything he wants to. If he wants to "colorize," then I guess he can. We peons, however, simply color things. color is one of those wonderful English words, both a noun and a verb, which has over twenty different meanings. It's a great word. We don't need "colorize."

ROY G. BIV

John Copp accepts CAD's PRIDE award from Viv Malpass at Antec
TERRA TECH (Continued from page 1)

The College is currently registering students for Fall Quarter which begins September 4. The technical college, which is the only two-year institution in the United States to offer the color matching major, serves both full-time and part-time students. The part-time students are usually working full-time and attending classes in the evening.

During the summer, three of the returning students were employed in color matching jobs; Nancy Hoag worked at PMS in Norwalk, and Dave Bryan and Buddy Parsons worked at Chroma Corp., near Chicago. When they return to the classroom, they will bring valuable experience to share with their classmates.

The students will also benefit from several equipment donations to the plastics lab. These include: a spectrophotometer, color monitor and accessories from ACS; and a spectrophotometer, light booth, color test kit, and glossmeter from Macbeth.

In addition, the students will benefit from equipment loaned by PMS, Norwalk. A weatherability tester and a dart impact tester will be used in the color matching lab.

Saam said the loan and donation of equipment enrich the lab experience from Terra's students. Using the same equipment as the plastics companies use helps prepare the students for jobs in the industry.

Job placement will be included among the second year students' concerns this year. Companies interested in recruiting or interviewing potential color matching employees may contact the Career Services Office, 419-334-8400 extension #345; or call Saam directly at 419-332-1002.

IT IS NEVER TOO LATE

If you missed, or just forgot, the August 15, 1990 deadline to send an abstract to present a paper at the Color & Appearance Division session at ANTEC 1991, do not worry. You can still be included in the program if you send your abstract or call immediately:

Andrew Haber
Tioxide Inc.
9999 Cavendish Boulevard, Suite 100
St. Laurent (Montreal), PQ H4M 2X5
(514) 747-999


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Coatings 1-800-323-3224 Colorants 1-800-323-5286

Morton International
Specialty Chemicals Group
Automotive and Industrial Finishes
2700 East 1/0th Street, Lancaster, PA 17603

Color Pigments

INORGANICS
Nickel & Chrome Titanate Yellows
Iron-Free Browns
IR Blacks
Cobalt Blues & Greens
COLOR DIVISION, Ferro Corp., P.O. Box 6550
Cleveland, OH 44101 • (216) 641-8580 • FAX: (216) 641-8831

Performance Products From Engelhard

Specialty Minerals Products:
SATINTONE® calcined kaolin • EMCOR® 85® reinforcement
TRANSILINK® surface treated kaolin • ASP® hydrous kaolin
1-800-932-0444, 1-800-624-0518 (in NJ)

Harshaw® Color Products:
METEOR® pigments (mixed metal oxides)
ORGANIC pigments • LEAD CHROMATE pigments
CADMIUM pigments including MINDUST® (reduced dust)
1-800-321-3762

101 Wood Avenue, Iselin, NJ 08830-0770

ENGELHARD
EXCEPTIONAL TECHNOLOGIES
MEMBERSHIP APPLICATION
Society of Plastics Engineers
Executive Office, 14 Fairfield Drive, Brookfield Center, CT 06805 U.S.A.
(203) 775-0471 Telex No. 643-712

I am applying for: □ Membership □ Reclassification (no charge) □ Reinstatement (initiation fee not required)

NAME: First Middle Last

ADDRESS: Check your preferred mailing address. Company □ Home □

COMPANY ____________________________

POSITION/DEPT.: ___________________ PHONE: ___________________

City State (Prov.) Zip

Country

HOME ADDRESS

City State (Prov.) Zip

Country

DATE OF BIRTH: Month Day Year

GRADE REQUIREMENTS

Senior Member Minimum of twelve (12) experience credits and current continuous membership in the Society for a minimum of two (2) years.

Member Minimum of six (6) experience credits.

Affiliate Member Less than six (6) experience credits.

Student Member Regularly enrolled FULL-TIME student (12 credit hours per semester) in a course of study in plastics.

Check below the membership grade for which you believe details of your experience in plastics qualifies you (see grades above).

□ Student □ Affiliate □ Member □ Senior □ Emeritus

Statement of Fees (U.S. FUNDS ONLY)

□ SENIOR MEMBER, MEMBER, AFFILIATE

The SPE year extends from 7/1 to 6/30 ______________________________________________________________

If you join between 12/31 and 3/31 ______________________________________________________________

If you join between 4/1 and 6/30 ______________________________________________________________

$55.00 (+ $10 initiation fee)

$27.50 (+ $10 initiation fee)

$10.00 (initiation fee only)

□ STUDENT MEMBER (no initiation fee/not pro-rated)

Annual Dues: whenever joining $14.00

□ REINSTATED MEMBER (no initiation fee/not pro-rated)

Annual Dues: whenever reinstated $55.00

Charge my □ Am. Exp. □ MasterCard □ VISA

Card #: ____________________________ Exp. Date _____________

REFERENCES The Bylaws require the names of three references who are familiar with your work. One should be an SPE member.

1. (SPE Member) ____________________________

2. ____________________________

3. ____________________________

I wish to join the ____________________________ Section.

My free primary Division choice is ____________________________

check (+) others below as secondary Divisions (cost-$4 each).

□ 21 Color and Appearance □ 30 Blow Molding □ 31 Plastics in Automotive

□ 22 Extrusion □ 32 Plastics Analysis □ 34 Decorating

□ 23 Injection Molding □ 33 Plastics Manufacturing □ 35 Moldmaking and Tools

□ 24 Electrical and Electronic □ 34 Decorating □ 36 Medical Plastics

□ 25 Thermoforming □ 35 Moldmaking and Tools □ 37 Marketing

□ 26 Engineering Properties and Structure □ 36 Medical Plastics □ 38 Polymer Modifiers

□ 27 Vinyl Plastics □ 37 Marketing □ 39 Thermal Polymers

□ 28 Thermoset □ 38 Polymer Modifiers □ 40 Thermoplastics and Foams (Nonvinyl)

□ 29 Thermoplastic Materials and Foams (Nonvinyl)

□ 30 Blow Molding □ 31 Plastics in Automotive

□ 32 Plastics Analysis □ 34 Decorating

□ 33 Plastics Manufacturing □ 35 Moldmaking and Tools

□ 34 Decorating □ 36 Medical Plastics

□ 35 Moldmaking and Tools □ 37 Marketing

□ 36 Medical Plastics □ 38 Polymer Modifiers

□ 37 Marketing □ 39 Thermal Polymers

□ 38 Polymer Modifiers □ 40 Thermoplastics and Foams (Nonvinyl)

What is the primary end product manufactured or service performed at your company location?

□ 01 General & Corporate Management □ 06 Purchasing

□ 02 Design/Design Engineering □ 07 Sales/Marketing

□ 03 R&D Development Engineering □ 08 Education/Research

□ 04 Production Manufacturing □ 09 Student

□ 05 Quality Control □ 10 Library

□ 11 Other (Specify) ____________________________

What is your primary job function (check one only)?

□ 01 General & Corporate Management □ 06 Purchasing

□ 02 Design/Design Engineering □ 07 Sales/Marketing

□ 03 R&D Development Engineering □ 08 Education/Research

□ 04 Production Manufacturing □ 09 Student

□ 05 Quality Control □ 10 Library

□ 11 Other (Specify) ____________________________

STATEMENT OF COLLEGE WORK

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<th>Years attended</th>
<th>Institution</th>
<th>Major</th>
<th>Degree</th>
<th>Education Credits</th>
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RECORD OF QUALIFYING EXPERIENCE IN PLASTICS

<table>
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<tr>
<th>DATES</th>
<th>Give your title, name and location of employer. List in chronological order. Describe duties fully and state any important engineering work you have done in each position. If space is not sufficient, use separate sheet.</th>
<th>Time in years (a)</th>
<th>% in plastics (b)</th>
<th>Qualifying experience (a x b)</th>
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<th>CREDENTIALS COMMITTEE APPROVAL ONLY</th>
<th>Approved Grade</th>
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<td>(S) Date</td>
<td>(S) Date</td>
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</table>

Office use only: Division

ID# Job Class

Grade Date Elected

Education credits from above: □

Total education and experience credits: □

I certify that the statements made in this application are correct. I agree, if elected, to be governed by the Constitution and Bylaws of the Society and to promote the objectives of the Society.

Signature in ink Date

Sponsor: ____________________________

Name Member Number

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