



# Philadelphia Liberty Bell Chapter Newsletter

www.asm-philadelphia.com

Thursday, January 20, 2005

## National Officers Night

Spouses and guests are invited and welcome. Williamson Restaurant, Easton Road, Horsham, PA



**Speaker:**  
**GEORGE F. VANDER VOORT**  
ASM International Trustee  
**Topic:**  
Color Metallography

Mr. George F. Vander Voort is director of Research and Technology, Buehler, Ltd., Lake Bluff, Ill., where he has worked since 1996. He received his B.S. degree in Metallurgical Engineering at Drexel University in 1967 and his M.S. degree in Metallurgy and materials science from Lehigh University in 1974. He has had a long career in the steel industry, including 16 years with Bethlehem Steel and 13 years with Carpenter Technology.

An ASM member since 1966, Mr. Vander Voort was active with the ASM Lehigh Valley Chapter for many years. He has served on many ASM national committees, starting in 1977 with the Metals Engineering Institute Committee. He was the founding chairman of the Technical Books Committee and has served on the Publications Council and the Handbook Committee. In 1977 he became one of the first ASM members to teach courses at the Materials Engineering Institute (MEI), and he has since taught 41 MEI courses. He has been an instructor in 22 workshops offered by ASM, International Metallographic Society (IMS), and other organizations. He has also given lectures at 33 ASM Chapters and a dozen student chapters. He was named a Fellow of ASM in 1990.

Mr. Vander Voort has had a life-long interest in microscopy and failure analysis, and is well known for his color micrographs that have been published on many magazine covers and made into ties, such as the Heat Treat Society tie. He has received 24 awards for his micrographs, including the Jacque-Lucas Grand Prize and the DuBose-Crouse Award in the annual metallographic contest jointly sponsored by ASM and IMS. He is currently chairing the committee to revise volume 9 of the Metals Handbook, Metallography and Microstructures.

As an author, Mr. Vander Voort has 17 articles in six volumes of the Metals Handbooks and both editions of the Desk Edition. He has written approximately 200 publications, including the book, *Metallography: Principles and Practice*. He also made 11 of the 14 programs in the ASM "Principles of Metallography" video course. He is associate editor of Materials Characterization, the IMS journal, and is on the editorial advisory board for *Praktische Metallographie*.

**TOPIC: Color Metallography**

Most metals and alloys must be treated in a specific manner after specimen preparation if we are to observe their microstructure. The obvious exception of this rule is the examination of certain metals and alloys with non-cubic crystallographic structures that respond well to crossed-polarized light. Historically, general-purpose etchants have been used that bring out the overall structure by superficial corrosion. This process makes use of the minor potential differences that exist between constituents of different composition, between grain boundaries and grain interiors and between phase boundaries and phase interiors. Minor height differences are created on the surface that yield light-dark contrast when bright field illumination is utilized. This is the traditional black and white world of the metallographer, which can be reversed when dark field illumination is used, or altered by the use of color filters, such as the yellow-green filter required for photography when using achromat objective lenses.

Color etching techniques alter this view, just like the shift from black and white movies or television to color movies and television. But, unlike these color entertainment forms, color etchants also reveal information about

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### Meeting Cancellation Notification

In the event of cancellation of a meeting due to inclement weather, we will broadcast the news as part of KYW News radio's (1060AM) Storm Center Service. ASM cancellations will be specifically announced when KYW airs community cancellations at :20 and :50 past each hour during the afternoon of the day of the meeting. ASM's name will be specifically mentioned, so listen for the name rather than an organization number as is used for schools.

### Technical Chairperson

Scott Nyce  
Solar Atmospheres, Inc.

### Meeting Sponsors:

Solar Atmospheres Inc.  
Tinius Olsen Testing Machine Co.  
Struers Inc.

### Dinner Menu

French Onion Soup  
Fresh Garden Salad  
Roasted Top Sirloin of Beef  
Baked Stuffed Potato  
String Beans Almondine  
Chocolate Mousse

### Social Hour

6:00 - 7:00 p.m.

### Dinner

7:00 p.m.  
Price: Members & Guests: \$23.00;  
Retirees: \$15.00; Students: \$12.00

## ASM Philadelphia Sustaining Members (2004-2005)

Air Products & Chemicals Co.  
Ajax Electric Company  
Allied High Tech Products, Inc.  
Apollo Designs  
B & G Manufacturing Co. Inc.  
Bristol Steel Treating  
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Carpenter Technology Corp.  
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Consulting Engineers, Inc.  
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Superior Tube Company  
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Ugine Stainless & Alloys Inc.  
Vacuum Furnace Systems  
Robert Wooler Company  
**Institutional Members**  
Drexel University  
Temple University  
University of Pennsylvania  
Villanova University  
William Tennent High School  
Williamson Trade School

## Chapter Officers 85th Year

Scott Nyce, Chairperson  
Solar Atmospheres, Inc.

Travis Nelson, Vice Chairperson  
Materials Resources International

Anna Whitehead, Secretary  
Global Systems Tec. Inc.

Don Jordan, Treasurer  
Solar Atmospheres, Inc.

Robert DeKalb, Executive Secretary  
Robert Wooler Co.

Fred Klock, Exec. Treasurer  
SPS Technologies, Retired

## For more info about the ASM Liberty Bell Chapter...

Contact Chapter Chairperson Scott Nyce at 215-721-1502 x 219 or email: [dsn@solaratm.com](mailto:dsn@solaratm.com).

## Do you have news...

that should be shared with the other members of the "Liberty Bell" Chapter? If so, please send your info to Anna Whitehead at her email address:

[aj.whitehead@att.net](mailto:aj.whitehead@att.net)

Be sure to add the phrase "Item to add to the ASM Chapter newsletter" in the subject line. We'll be sure to include it in the next monthly Chapter newsletter.



## Chairperson's Message

January, 2005

Greetings,

2005. It's hard to believe. In some ways it feels just like last year we were all preparing for the Y2K scare!

The change of the calendar gives us an opportunity to both reflect on the past & look to the future. With this in mind, it's very appropriate that our National Officers Night is in January. This is our opportunity to show off what our chapter has done in the last year & show where we are going in the next few months. We are looking forward to our visit from George Vander Voort, representing ASM International & his presentation on Color Metallography.

January also is the beginning of our scholarship campaign. Please encourage any students you know to apply for our many scholarships, for high school, under-grad and graduate students. You may contact me directly for any information on how to apply.

If you haven't made a meeting yet this year, January would be a great time to start. If you have attended, have you brought a guest with you to a meeting yet? It has been great to see so many new faces this year. I hope we can continue the efforts well into 2005.

See you at the January Meeting,

Scott Nyce

## Changes To Your Membership Information

Any Chapter Member who needs to make a change to their membership listing or to their company affiliation listing must call Membership Service, ASM International at 1-800-336-5152 or use the ASM website at [www.asminternational.org](http://www.asminternational.org). This will permanently update your information.

We depend on ASM International to receive our updated mailing list for this newsletter. So please do not send information to the return address on this newsletter.

## Mission Statement

### ASM International, Philadelphia "Liberty Bell" Chapter

The Philadelphia "Liberty Bell" Chapter of ASM International supports the development and continuance of the materials industry in the Philadelphia area. Chapter activities strive to inform the local technical community of new developments in materials, raise the visibility of the materials industry, provide educational opportunities in materials technology, recruit new people and organizations into materials-related activities, and provide networking opportunities for members of the materials community. The Chapter works with ASM International to use our joint resources to accomplish this mission.

## Upcoming Events...

1-20-05	Thursday	<b>National Officers Night</b> Topic: Color Metallography, Williamson Restaurant, Horsham, PA	6:00 pm
2-17-05	Thursday	<b>Eisenman Award Night</b> Topic: The Business of Putting Things Together, Williamson Restaurant, Horsham, PA	6:00 pm
3-17-05	Thursday	<b>Albert Sauveur Night</b> Topic: Materials Technologies & Trends on Boeing Aircraft, Williamson Restaurant, Horsham, PA	6:00 pm
4-21-05	Thursday	<b>Sustaining Members Night</b> Topic: Quality Systems & Their Application in the Dale Earnhardt Engine Shop, Williamson Restaurant, Horsham, PA	6:00 pm
4-23-05	Saturday	<b>Spring Dinner Dance</b> Old York Road Country Club	6:00 pm
5-19-05	Thursday	<b>Honors &amp; Past Chairmen Night</b> Topic: Awards & Honors, Williamson Restaurant, Horsham, PA	6:00 pm

## Sustaining Member Plaques

Every meeting our chapter is proud to display the number of sustaining members we have. Guest and speakers are always impressed with the amount of industry support we receive. This group of companies are the backbone of the chapter and these plaques are a great way to showcase their support.



If you are a sustaining member & don't have a plaque on our board, or you would like to update a current plaque, please contact Chris Constable at [chris.constable@rexheat-treat.com](mailto:chris.constable@rexheat-treat.com) or 215-855-1131.

## ASM Scholarship Applications

In the academic year of 2004-2005, the Philadelphia Liberty Bell Chapter will provide three scholarships (\$1500.00 each) to college engineering students who intend to pursue a career in Materials Science. All eligible students are encouraged to apply. One full-page essay (single spaced, Arial font, with font size between 10 to 12), stating his/her commitment to the Materials Science profession, will be required. Please contact Dr. Kei-Peng Jen at Villanova University for the application form and details (e-mail: [kei-peng.jen@villanova.edu](mailto:kei-peng.jen@villanova.edu); Tel: 610-519-7311). The deadline for application is March 1, 2005.

## C.F. Burns Poster Contest

The Liberty Bell Chapter will be holding its 4th annual poster contest for graduate students during our Sustaining Members Night, 4/21/05. This will be the second year the contest is sponsored by Solar Atmospheres. Prize money will be \$500 for 1st Place, \$300 for 2nd and \$200 for 3rd. Due to limited space, we are asking for students to pre-register this year. Space will be awarded on a first come, first served basis. Please register your name and poster title with Scott Nyce (email [dsn@solaratm.com](mailto:dsn@solaratm.com)). Good Luck to everyone!

## High School Essay Contest

Three \$100 awards will be given to high school students. To enter the contest, write an essay no more than 500 words on the topic "What is materials engineering? Think about an object you use everyday. How could you use materials engineering to make it better?" Please send type written submissions to Attn: Elizabeth Hoffman, Dept of Materials Science and Engineering, 344 LeBow, Drexel University, 3141 Chestnut St., Philadelphia, PA 19104. Applications will be accepted no later than March 1, 2005. Winners will be notified no later than April 30, 2005.

## Liberty Bell Chapter Spring Dinner Dance

Plans are moving forward for the Spring Dinner Dance scheduled for April 23rd at 6:00 pm at the Old York Road Country Club. This annual event is always the highlight of our social program for the year. It is an evening of wonderful food and beverages with dancing until late into the evening. Be sure to pencil in April 23rd on your calendar.

## Speakers Directory Being Compiled!

It was recently suggested that the Philadelphia Chapter should keep a list of chapter members who are available and willing to do presentations for outside groups. These outside groups could be other ASM chapters, other professional societies, or various community groups interested in materials. The topics can run from highly technical ones to sheer entertainment, and can be presentations that have already been given to other groups.

The Chapter Program Committee has been assigned the task of compiling and maintaining this list. In order to get started, anyone who has a presentation topic that he is willing to share with either ASM or outside groups, please contact John Janiszewski (215.641.8849, [jjaniszewski@ltk.com](mailto:jjaniszewski@ltk.com)). A form will be sent to you.

## Welcome New Members

Kristin Breen	Exxon Mobil
Tom Farrington	Lockhead Martin
Lawrence Fransen	Boeing Co.
Michael Korchinski	Boeing CO.
Bhargav Kuntamukkala	Wright State Univ.
Brian Martin	Handy & Harman
Michael Marucci	Hoeganaes Corp.
Michael Quinn	Richards Apex
Shari Nathanson Rosenbloom	
Roger Shupe	Bid Service
Lawrence Turowski	Precision Tube
Jeff Warden	Superior Tube Co.

## Meeting Registration

Register to attend our meeting on our website [www.asm-philadelphia.com](http://www.asm-philadelphia.com).

If you have a large group attending or do not have access to the website, please contact Rob DeKalb at 215-542-7600 to register.

## Yearbook Advertising Campaign Begins!

The Liberty Bell Chapter advertising committee is putting together the advertisers' list for the 2005-2006 chapter yearbook. **The Liberty Bell yearbook is seen by over 900 materials professionals and companies in the Delaware Valley and South Jersey.** And, it has been consistently recognized by ASM International as one of the top chapter publications worldwide. Professionally put together and printed, the Liberty Bell yearbook provides a focused method of getting your company's products and services in front of the people who use them!

If you would like to reserve preferred space or for more information including ad options and rates, please contact Advertising Committee chair, Mike Drakeley at 215-721-1502 ext. 203 or [mjd@solaratm.com](mailto:mjd@solaratm.com).

## SUPPORT Your Local Chapter

by advertising in the 2004-2005 Liberty Bell Chapter Yearbook. Please contact Mike Drakeley at 215-721-1502 x 213 or [mjd@solaratm.com](mailto:mjd@solaratm.com) to reserve your space.

## Color Metallurgy *Contd. from page 1*

the specimen that is not visible in black and white after using general-purpose etchants. Anodic tint etchants that color the matrix grains usually reveal grain orientation information, that is, they color the grains as a function of crystal orientation. If there is a random texture, there will be a random coloring of the grains with a wide range of hues. If there is preferred orientation, the range of colors diminishes. Segregation is vividly revealed by color etchants as variations in color within the grains. Residual deformation is also clearly revealed by color, but is often difficult to detect in bright field unless copious slip or mechanical twinning accompanies it. Most color etchants are selective in nature, that is, they will color only certain phases or constituents. This is highly useful for image analysis work.

Color can be introduced by other methods, such as anodizing and heat tinting. Anodizing is a very useful technique for certain metals and alloys. The treated surface must be examined by crossed-polarized light. Heat tinting, often claimed to be non-reproducible, is a nearly universal method for coloring microstructures. The correct temperature must be determined by trial-and-error, and that temperature cannot cause phase changes. But, once the practice is established, it is reproducible and useful. There are vapor-deposition (the Pepperhoff method) and reactive sputtering techniques that will color phases and constituents, but these will not be discussed in this talk.

## Advertisers in the 2004-2005 ASM Yearbook

Air Products & Chemicals, Inc.	Leco Corporation
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Consulting Engineers & Scientists, Inc.	Rex Heat Treat
Delaware Valley Utility Advisors	A.L. Singmaster Personnel Svcs.
Drexel Univ., Dept. of Mat. Eng.	Solar Atmospheres, Inc.
Electron Energy Corp.	SPS Technologies, Inc.
Evans Heat Treating Co.	Stork -MMA Testing Labs
Extec	Struers, Inc.
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Hoeganaes Corporation	Tinius Olsen Testing Mach. Co., Inc.
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Inductotherm Corporation	Villanova University, Dept. of Mech. Eng.
Industrial Metal Treating	Westmoreland Mech. Testing Machine
L&L Special Furnace Co., Inc.	Williamson Restaurant
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