



# Santa Clara Valley Chapter

February 2001

Volume 44, Number 6

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## Wednesday, February 21

*A Joint Meeting with the American Welding Society*

### Advances in Metallography

George F. Vander Voort  
Director, Research & Technology  
Buehler Ltd.

5:30 pm Social/Networking.....6:15 pm Dinner.....7:30 pm Speaker

**Meeting Location:**  
WYNDHAM GARDEN HOTEL  
1300 Chesapeake Terrace  
Sunnyvale  
(408)747-0999

**Dinner Cost:** ASM Members \$18, Students \$8, Guests \$20  
*Meal Choices: Medallions of Beef, Chicken Piccata, or Vegetarian*

**RESERVATIONS REQUIRED:**  
Jim Knowles (650) 728-3786 or jim@grandkauai.com  
*\$2 late fee after noon on Monday, February 19*

**February Meeting Sponsor: FTI/Anamet**



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## About the Topic

### **Advances in Metallography**

Over the past twenty-five years, metallographic specimen preparation has largely shifted from manual to automated procedures. This has fostered gains in both productivity and quality. In sectioning equipment, minimum-contact area cutters have improved performance and cut quality. Precision cutters have progressed from simple crude devices to very sophisticated systems. Mounting press automation has reduced or eliminated shrinkage gap formation, which has improved edge retention and reduced or eliminated bleed-out problems. New consumables have been introduced along with new preparation ideas that yield better surfaces in less time with greater reliability. The talk will illustrate these gains using specimens of a variety of compositions.

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## About the Speaker

### **George F. Vander Voort - Director of Research & Technology, Buehler Ltd.**

George received his BS in Metallurgical Engineering from Drexel in 1967 - the last class as Drexel Institute of Technology. After graduation, George joined Bethlehem Steel Corporation in Bethlehem, PA where he was involved in all areas of failure analysis, alloy development, and microscopy. During this time George also earned an MS degree in Metallurgy and Materials Science from Lehigh University. In 1983, George joined Carpenter Technology Corporation as supervisor of Materials Characterization in their research center where he was responsible for microscopy and mechanical testing. In 1996, George joined Buehler Ltd. as Director of Research and Technology. He also edits their newsletter, *Tech-Notes*.

George has over 150 publications, nearly all single authored, including the book *Metallography: Principles and Practices*. He has edited or co-edited fifteen other books and eight special issues of *Materials Characterization*. He is the author of sixteen papers in various editions of the *ASM Metals Handbook* series and he made eleven of the fourteen video tapes in the ASM video course *Principles of Metallography*. He is the author of eight ASTM standards and holds five patents. His micrographs have been within or on the covers of 55 books, magazines, newsletters, brochures or calendars. He has won 23 awards for his work in metallography contests including the Jacquet-Lucas Grand Prize. George also taught physical metallurgy courses at the Allentown branch of Pennsylvania State University, as well as over thirty one-week courses for ASM's Metals Engineering Institute.

George has been active with ASM International since 1966. He has received several ASM awards and was named a Fellow of ASM in 1990. George has also been very active in many other professional organizations.

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## February Meeting Sponsor

ASMI-SCV would like to thank **FTI/Anamet** for sponsoring our February meeting. FTI/Anamet provides failure analysis, mechanical testing, chemical analysis, engineering consulting, and litigation support to all sectors of Bay Area industry. We appreciate FTI/Anamet's support, which enables us to provide quality technical programming to our membership at a reasonable cost.

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## **FTI/Anamet**

Kenneth R. Pytlewski, P.E.  
Metallurgist  
kpytlewski@fticonsulting.com

## Meeting Location

As usual, the SCV meeting will be held at the Wyndham Gardens Hotel. **From points south:** travel north on Lawrence Expressway, pass over 237, and make the first left (Moffett Park Drive), and then the first left onto Chesapeake Terrace. **From points east or west:** take the Caribbean Drive (Lawrence Expressway North) exit off 237, take the first left at Moffet Park Drive, and then left on Chesapeake Terrace. Once you are on Chesapeake, simply proceed to the end where you'll find The Wyndham Gardens Hotel.

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### You Can Be a Science Fair Judge!

As you know, for many years ASMI-SCV has fielded a team of "Special Judges" for the annual *Synopsis Silicon Valley Science and Technology Championship*. As you can see by the name change, this year the event has received a higher level of corporate sponsorship, and promises to be even bigger and better than ever before. Our team is responsible for judging all materials-related science project entries (which are submitted by local students in grades 6 thru 12).

This is an incredibly fun event, but there is always too much ground to cover! We need as many ASMI-SCV judges as we can get, especially this year as we are expecting a record number of entries. The event will be held on **Saturday, March 17<sup>th</sup>** (note the day-of-the-week change from previous years) at the San Jose McEnergy Convention Center. We will preview the projects from 10am to 1pm to select those with significant materials science content. Official judging will be from 1pm to 5 pm - this is the fun part where we will interview the students about their projects. Even if you are available for only one of these times, we can still use your help! This is a truly rewarding experience, and by judging the science fair projects and interacting with the students, you are providing the youth of Santa Clara County with a wonderful opportunity and challenge.

Sound interesting? Call our Science Fair Coordinator, Bob Elliott, at (408) 984-1146.

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### Can't Make the March 17<sup>th</sup> Date but Still Want to be a Science Fair Judge?

Well, this year you have another opportunity to be a science fair judge! That's because the ASM International has an opening on their team of judges for the *Intel International Science and Engineering Fair* which takes place on May 9, 2001 in San Jose, CA. For more information contact Jeane Deatherage at ASMI Headquarters at 1-800-336-5152, ext. 5533 or [jdeather@asminternational.org](mailto:jdeather@asminternational.org).

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*The ASM International Foundation Announces...*

## **Materials Camp 2001**

*Give us your very best and brightest!*

**QUESTION:** Do you know a high school student with an interest in engineering?

**QUESTION:** Want to help a young person explore the amazing world of materials science?

**QUESTION:** Concerned about where the next generation of materials specialists will come from?

If you answered “YES” to any of these questions, we have an answer for you: **MATERIALS CAMP!**

Due to an overwhelming response, the ASM International Foundation is pleased to announce its second year sponsorship of Materials Camp USA! The first Materials Camp was so successful that the Foundation Board has decided to continue the program, and expanding it to two camps this year: MATERIALS CAMP USA- East (location: Materials Park, Ohio) to be held August 6 to 12, and MATERIALS CAMP USA-WEST (location and dates: to be announced). All programs will be conducted in collaboration with the renowned ASM Materials Engineering Institute.

This unique program, limited to students entering their junior or senior year of high school will feature highly interactive, lab-based activities tailored to individual student interest areas. In addition, Materials Camp USA-EAST participants will benefit from a tremendous learning environment: ASM’s new \$3 million MEI Training Center, located at ASM’s headquarters in Materials Park, Ohio.

To complete the learning experience, evening social activities will also include a materials theme! And, to cap it all off, students will “graduate” during ASM Chapter Leadership Days, enabling them to attend the weekend’s events, where they be able to meet and network with ASM, ASM Foundation and Chapter leaders and Board members.

*“Thank you so much for allowing me to have this great experience. I will never forget all the memories I have made at this Camp. All the teachers were wonderful ... they taught us so much about the field of materials science ...”* - **Cara Lynn Santillo**

**Student participant, 2000  
(Beaver Valley Chapter)**

*“... The camp exceeded even my best expectations. The students’ level and enthusiasm was second to none. I really believe the students had an extremely positive experience. I know I did.”* - **John Baker**

**R. J. Lee Instruments  
Volunteer Instructor**

All expenses (tuition, travel, hotel, meals, etc.) for each participant will be paid for by the ASM International Foundation.

**ASM members are encouraged to nominate prospective students. For more information, to get an application/nomination form, or request a copy of the 8 minute video “THE JOURNEY BEGINS” please call 1-800-336-5152, ext. 5533.**

Visit [www.asminternational.org/foundation](http://www.asminternational.org/foundation), for photos and full details.

All nominations will be forwarded to the ASM Action in Education Team for final selection. A maximum of 30 students will be accepted for each session (60 total).

Deadline for nominations is **31 March 2001**

## February 18-24 is National Engineers Week

National Engineers Week ([www.eweek.org](http://www.eweek.org)) was launched 50 years ago as a way to showcase engineering's contributions to our quality of life. It is a time for local communities to recognize their engineers for professional and community service. This is also when the National Academy of Engineering presents the Draper Prize, the "Nobel Prize" of engineering.

Perhaps most importantly of all, National Engineers Week is also a time to help cultivate an interest in math, science, and engineering in our nation's youth with programs such as the *Discover "E"* (E for engineering) program. In our area the Silicon Valley Engineering Council ([www.svec.org](http://www.svec.org)) coordinates a number of activities related to National Engineers Week. If you would like to learn more or become involved, visit the websites noted above for specific information. Also, we at ASMI-SCV are seeking to revive our dormant school visitation program. If this interests you, contact Wendy Chung at (408)256-8614.



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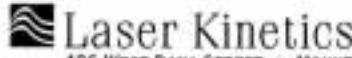
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## Upcoming Events

**Feb 13** - American Electroplaters and Surface Finishers Society - "Advanced Thin Film Head Development", Tom Dinan, IBM. 7:00 pm, Spin-a-Yarn Restaurant, 45915 Warm Springs Blvd., Fremont. *Contact Dave Wiley at (510) 708-3318*

**Feb 23** - The SVEC Engineers Week Banquet, 5:30 pm, Santa Clara Marriott Hotel. *Visit [www.svec.org](http://www.svec.org) for more information.*

**Feb 24** - ASMI-Golden Gate Chapter One-day Seminar on Failure Analysis - see news item on page 7 for more info.

**Feb 27** - Golden Gate Polymer Forum - "The Carbon Dioxide Technology Platform and the Microelectronics Industry", Dr. Joseph M. DeSimone, NSF Science & Technology Center and Univ. of North Carolina at Chapel Hill. 6:00 pm, Michael's at Shoreline, 2960 N Shoreline Blvd., Mountain View. *Register via [www.ggpf.org](http://www.ggpf.org) or contact Brian Pennington at 408-956-3361 or [brian.pennington@scionphotonics.com](mailto:brian.pennington@scionphotonics.com).*

**Mar 17** - *Synopsis Silicon Valley Science and Technology Championship*, San Jose McEnery Convention Center. Come be a Judge! *See page 3 for details.*

**Mar 20** - American Ceramic Society - Northern California Section Student Poster Exhibit and Section Dinner Meeting, UC Davis Silo Pub/Café. *Contact Dan Day at [dday@nrmc.com](mailto:dday@nrmc.com) for details.*

**Mar 29** - Society of Manufacturing Engineers - Plastics Design Technical Seminar. Location and other specifics TBA. *Contact Dave Himmelblau at [dave.himmelblau@lmco.com](mailto:dave.himmelblau@lmco.com) for details.*

**Apr 16-20** - MRS Spring Meeting, The San Francisco Marriott Hotel and Argent Hotel. *Visit [www.mrs.org](http://www.mrs.org) for program details and registration information.*

*Also, visit the following website for a listing of other Bay Area science events:*  
<http://www.supercalendar.com/view.php?a=813>

(Buehler)

### Details on the SVEC Engineers Week Banquet

As the culmination of National Engineering Week, the Silicon Valley Engineering Council (SVEC) will be holding their annual Engineering Week Banquet on February 23, 2001. This year's Keynote Speaker is Joseph R. Tanner, NASA Astronaut who recently returned from Space Shuttle Mission STS-97 where he helped assemble the solar array panels for the International Space Station. This year's Hall of Fame Inductees are Robert J. Frankenberg, Dr. Franke S. Greene, Jr., and Dr. William F. Miller.

The event is a great chance to connect with the local engineering community. More importantly, it is a chance to support the theme of Engineering Week, which is to inspire young people to pursue a career in the engineering profession!

Furthermore, the SVEC is looking for corporate partners to help sponsor scholarships, other Engineering Week activities, and special projects.

If you'd like to attend the banquet or find out more about sponsorship, visit [www.svec.org](http://www.svec.org).

### One-Day Seminar on Failure Analysis

Our sister chapter, ASMI-Golden Gate has arranged for a fascinating Winter Seminar in Failure Analysis. This is a one-day seminar (9 am to 4 pm on Saturday, 24 Feb 2001) that will cover failure analysis in both the microelectronic industry (morning session) and in more traditional metallurgical industries (afternoon session). Take a look:

- **Failure Analysis in Electronic Components** - Ralph Carbone, Reliability Physicist, Hewlett Packard.
- **Failure Analysis in Microprocessors** - Peter Zwigl, Sr. Quality Engineer, Intel.
- **Materials Failures in Fasteners** - Conrad Christensen, P.E.
- **Failure Analysis: Shaking the Fault Tree** - Mark D. Bell, P.E., Preventative Metallurgy.
- **Case Histories in Failure Analysis**, Shahram Sheyban Ph.D.

The event will take place at UC Davis. Advance registration fees are \$150 (\$20 for students), with walk-in fees slightly higher (\$175/\$25). **Please RSVP by 19 Feb.** To sign up contact Andrew Olander at (925)432-5290 or [afolander@dow.com](mailto:afolander@dow.com). For more information about the program, contact Paul Tibbals at (925)866-5356 ([pht1@pge.com](mailto:pht1@pge.com)) or Mike Meier at (530)752-5166 ([mlmeier@ucdavis.edu](mailto:mlmeier@ucdavis.edu)).

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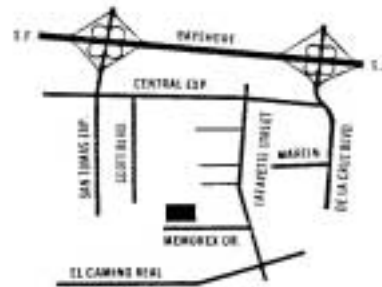
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### Special Appointment - Silicon Valley Engineering Council (SVEC) Representative

Ed Kaminski	Retired	(408) 241-4842	kipski@prodi.gy.net
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### Special Thanks to our ASMI-SCV Sustaining Members:

Charles Evans & Associates	Charles Evans, Jr.	San Mateo	Should your company be an ASMI-SCV Sustaining Member? Call Bob Elliott at (408)984-1146
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### 2000-2001 Technical Program

Sept. 13	Magnetic Recording Technology: Trends and Challenges <i>Tom Albrecht, IBM Research</i>	Past Chair's Night
Oct. 11	Optimization of Processing and Properties of Medical Grade Nitinol Wire <i>Alan Pelton, NDC-Cordis</i>	
Nov. 8	The Science and Technology of Bulk Metallic Glasses <i>Bill Johnson, California Institute of Technology</i>	
Dec. 13	Recovery of the Challenger Shuttle Data Tapes <i>Richard Bradshaw, IBM</i>	Companion's Night
Jan. 10	Beyond Silicon: Microfabrication with Metals, Plastics, and Ceramics <i>John Hachman &amp; Alfredo Morales, Sandia National Laboratories</i>	SCV Fellow's Night Joint ACerS
Feb. 21	Advances in Metallography <i>George Vander Voort, Buehler</i>	Joint AWS
Mar. 14	Overview of Electropolishing <i>David Pokvitis, ABLE Electropolishing</i>	Joint SME
Apr. 18	Jet Engine Fragment Barrier Materials <i>Don Shockey, SRI</i>	Joint SAMPE
May 9	The Wright Stuff: Materials Considerations in Building the Wright Flyer <i>Walter M. Griffith, FASM</i>	Awards Night