

**Wednesday, September 11**

**Lead-Free Soldering: A Global Contract Electronic  
Manufacturer's Perspective**

Jasbir Bath  
Solectron Corporation

*Please remember to indicate a meal selection when you sign up!*

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:* London Broil, Chicken Dijon, or Vegetarian

**RESERVATIONS REQUIRED:**  
Stacy Ewert at (408) 742-2521 or [stacy.s.ewert@lmco.com](mailto:stacy.s.ewert@lmco.com)  
**Reservation deadline is noon on Monday, Sep 9**

**September Meeting Sponsor:**  **BUEHLER**

*Our September meeting is Past Chair's night - see page 6 for details!*



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**Meeting Directions**

**From points south:** north on Lawrence Expressway, pass over 237, make the first left (Moffett Park Drive/Baylands Park), then the first left onto Chesapeake Terrace. **From points east or west:** Caribbean Drive (Lawrence Expressway North) exit off 237, first left at Moffet Park Drive/Baylands Park, then left on Chesapeake Terrace. **In either case, once you are on Chesapeake, simply proceed to the end where you'll find The Wyndham Garden Hotel.**

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If so, please remember to correct your address by logging onto the national website, [www.asminternational.org](http://www.asminternational.org), where you can review and update your membership record.

## About the Topic

### Lead-Free Soldering: A Global Contract Electronic Manufacturer's Perspective

Although we tend to think of tin-lead soldering in the context of electronic assembly, the technology has in fact been used as a general-purpose joining technique for over 2,000 years. However, the environmental impact of lead has recently driven an increase in legislative restriction of its use (*e.g.* European Restriction on Hazardous Substances Act 2006) as well as growing customer and consumer movements aimed at limiting the use of lead. Thus there has been greater focus on lead-free solder alternatives, primarily concentrating on high tin containing lead-free solders (tin-silver-copper).

The increased processing temperatures involved with the use of these new alloys and the extended tin-lead to lead-free transition period have given rise to a number of unique issues which will be discussed in this presentation. Failure analysis work involving visual inspection, cross sectioning, SEM and EDX will be presented to highlight and explain certain defects encountered. The analysis will include a review of interactions that can occur between tin-lead coated components and lead-free soldering assembly materials. The characteristics and features of the new lead-free soldering materials (wetting, melting temperature, reliability) will be compared to the baseline tin-lead assembled products with suggestions for revisions of testing methodologies with lead-free processed products.

## About the Speaker

### Jasbir Bath Solectron Corporation

Jasbir Bath is an Advisory Process Engineer at Solectron Technical Center, Milpitas, CA. He is responsible for corporate lead-free process development at Solectron Corporation, one of the world's largest contract electronics manufacturer. Jasbir has worked in the areas of lead-free and tin-lead surface mount and wave evaluations at Solectron since November 1998, with responsibilities encompassing the evaluation and selection of soldering materials to be used by the Corporation. He has presented at Nepcon West, Apex and Nepcon East/SMTA technical conferences, and published articles in electronics magazines such as Circuits Assembly. He has MS and BS degrees in Materials Science from the University of Manchester/UMIST in Manchester, England. Prior to working at Solectron, he worked for 5 years at Tin Technology Inc. (formerly International Tin Research Institute) in England as a Technical Officer on lead-free solders, wine capsules and shotshells.

### September Meeting Sponsor

ASMI-SCV would like to thank Buehler for sponsoring our September meeting. Buehler is the world's premier manufacturer of scientific equipment and supplies for use in materials analysis. Buehler's products are used throughout the world in manufacturing facilities, quality laboratories, and universities to enable material characterization, ensure quality, and perform materials research. We appreciate Buehler's support, which enables us to provide quality technical programming to our membership at a reasonable cost.

### For further information contact:

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*You may have noticed that this year our traditional second-Wednesday-of-the-month meeting date happens to fall on the anniversary of the Sep 11 tragedy. In light of the significance of this date, a Red Cross donation box will be available at the meeting for those who wish to donate.*

## SJSU Student Wins ASMI Foundation Scholarship

We are proud to announce that one of our very own student members, **Winnie Lee**, has received a \$1000 scholarship from the ASMI Foundation! Winnie is an undergraduate student at San Jose State University, where her hard work and fine academic performance are well-recognized. These scholarships are awarded to outstanding undergraduate members of ASM who demonstrate exemplary academic and personal achievements, as well as interest and potential in metallurgy or materials science and engineering. The scholarship winners are selected by the ASMI Scholarship Committee, a group of distinguished individuals from academia and industry. Congratulations Winnie!

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## Upcoming Events

**Sep 18:** ASQ, "Recent CAPE Award Winners from the bay area - How did they do it?". Visit [www.asq-silicon-valley.org/index.cfm?EventID=10570&SectionID=11](http://www.asq-silicon-valley.org/index.cfm?EventID=10570&SectionID=11)

**Sep 20:** ASCE, "Bay Area Bridges". Visit [www.asce-sf.org/section\\_meeting.html](http://www.asce-sf.org/section_meeting.html)

**Sep 20:** SVMG, "Silicon Valley Projections 2002". Visit [www.svmg.org/Events/Public\\_Events.cfm](http://www.svmg.org/Events/Public_Events.cfm)

**Sep 26:** ACS, "Carbon Nanotubes for Nanoscale Science and Technology". Visit [www.scvacs.org/Local\\_Folder/din\\_mtg.html](http://www.scvacs.org/Local_Folder/din_mtg.html)

**Sep 30 - Oct 4:** SPIE, "22nd Annual BACUS Symposium on Photomask Technology". Visit [spie.org/conferences/programs/02/pm/](http://spie.org/conferences/programs/02/pm/)

**Oct 19:** IEEE-CPMT, "Future Directions in IC & Package Design Workshop (FDIP)". Visit [www.cpmt.org/conf/index.html](http://www.cpmt.org/conf/index.html)

**Oct 21-23:** IEEE-CPMT, "11th Topical Meeting on Electrical Performance & Packaging (EPEP 2002)". Visit [www.cpmt.org/conf/index.html](http://www.cpmt.org/conf/index.html)

View an online version of this event listing at:  
[www.asm-scv.org](http://www.asm-scv.org)

## Chapter Member Wins ASMI Award

ASM International's Board of Trustees has announced the recipients of the 2002 Awards Program. **Professor William D. Nix**, FASM, Lee Otterson Professor of Engineering, Department of Materials Science and Engineering, Stanford University, will receive the **2002 Albert Easton White Distinguished Teacher Award**. Professor Nix was cited for his "long tenure as an inspirational teacher of undergraduate and graduate students, and for significant contributions to the experimental and theoretical aspects of high temperature creep behavior of crystalline solids." We offer our congratulations to Professor Nix, and we are proud to have him in our Chapter!

The Albert Easton White Distinguished Teacher Award was established in 1960 in recognition of Professor White's accomplishments as a teacher of metallurgy, and because of his key role in the founding of the American Society for Metals (now ASM International). The award is made each year to recognize a long and devoted service in teaching with the unusual ability to inspire and impart enthusiasm to students, along with significant accomplishments in materials science and engineering.

Formal presentation of the 2002 Awards Program will take place at the Awards Dinner to be held Monday, October, 7, 2002, in Columbus, Ohio during the Annual Event. For more information visit the Awards Program section of [www.asminternational.org](http://www.asminternational.org) (under the *Membership* tab).

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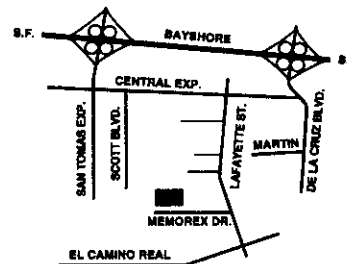
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## Local Teachers Attend Materials Camp

As you may already know, the ASM International Foundation hosts a "Materials Camp" each summer, a week-long academic camp for high school students. This year the Foundation also hosted their first "Teachers' Materials Camp". This is a week-long, hands-on laboratory experience designed to assist teachers in using applied engineering techniques in the classroom. This year the emphasis was on automotive issues and materials engineering principles. The program was hosted by the University of Michigan Materials Science and Engineering Department, and was led by a team of "Master High School Teachers", university professors, and industrial experts.

We are pleased to report that 3 of the 30 teachers selected from all over North America to participate in the program were locals! **Craig Childress** of Hillsdale High School (San Mateo), **Bruce Kawanami** of Monte Vista High School (Cupertino), and **Daniel Quach** of Thurgood Marshall Academic High School (Sunnyvale) represented the Bay Area at the event. By all reports the event was a success, and the teachers came away with valuable new resources for math and science education.

We congratulate Craig, Bruce, and Daniel on being selected for the program, and thank them for their dedication to professional development during their summer vacation. Our children, community, and profession will benefit from their efforts!

*Stay tuned in coming months for a report on the 2002 Student Materials Camp...*

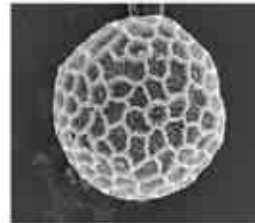
## September is Past Chairs' Night

One of our traditions in the Santa Clara Valley Chapter is to designate the September meeting as **Past Chairs' Night**. This means that we will take a moment at the meeting to recognize our past chairs for their service to the chapter. More importantly, it means that if you're a past chair, you'll get a free dinner! This last year we had a historic event in the chapter: we had 2 chairs! Wendy Chung served the first half of her term, but duty called her to Singapore for an extended work assignment. Vice chair Jim Knowles graciously stepped in and served the remainder of her term. Here is a full listing of our 46 past chairs:

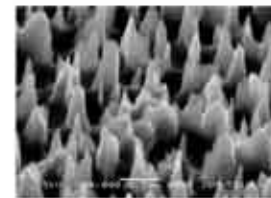
Ralph Parkman	1957-1958	Edward Kaminski	1973-1974	Gary Holmquist	1989-1990
Perry Slocum	1958-1959	John Leatherman	1974-1975	John Mardinly	1990-1991
Howard Sumsion	1959-1960	Jerry Dassell	1975-1976	Cal Augason	1991-1992
Malcom Davis	1960-1961	Frank Crossman	1976-1977	Jim Lewis	1992-1993
Oleg Sherby	1961-1962	Elliott Willner	1977-1978	Gary Wozadlo	1993-1994
Al Spencer	1962-1963	Linda Clements	1978-1979	Al Kwong	1994-1995
Edward Wright	1963-1964	Elliott Rennhack	1979-1980	Leonard Migliore	1995-1996
Robert Johnson	1964-1965	Patrick Pizzo	1980-1981	Bob Wallace	1996-1997
Marvin Buehler	1965-1966	Harry Wachob	1981-1982	Jamie Sandoz	1997-1998
Robert Hansen	1966-1967	Robert Elliott	1982-1983	Paul Flowers	1998-1999
Donald Crooks	1967-1968	Robert Caligiuri	1983-1984	Scott Dickerson	1999-2000
Raymond Fenn	1968-1969	Dave Himmelblau	1984-1985	Lou Wirtz	2000-2001
Alfred Goldberg	1969-1970	Charles Schmidt	1985-1986	Wendy Chung	2001-2002
William Donnelly	1970-1971	Brian Boggs	1986-1987	James Knowles	2001-2002
Sheldon Roberts	1971-1972	Rosemarie Koch	1987-1988		
Roger Perkins	1972-1973	Surya Pattanaik	1988-1989		

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## Chapter Information & Upcoming Activities

### Officers

<b>Chair:</b> Janine Kardokus	(408)986-7568
<b>Vice Chair:</b> HuiHui Lin	(408)256-1072
<b>Treasurer:</b> Stacy Ewert	(408)742-2521
<b>Secretary:</b> Jacques Matteau	(650)591-7787

### Executive Committee

Richard Chung	(408)924-3927
Paul Fojas	(650)361-2969
Dave Himmelblau	(408)743-7893
Francis Honey	(408)748-9955
James Knowles	(650)728-3786
Alfred Kwong	(408)935-5805
Mingwei Li	(650)966-5735
Leonard Migliore	(650)967-0977
Ramas Raman	(408)295-8976
John Stringer	(650)855-2472
Gabriel Toea	(831)634-1443
Lou Wirtz	(408)756-0621

### Special Positions

<b>SVEC Rep:</b> Ed Kaminski	(408)241-4842
<b>Newsletter Editor:</b> Scott Dickerson	(408)584-1013

### Thanks to our ASMI-SCV Sustaining Members:

Evans Analytical Group	Charles Evans, Jr.	San Mateo
CSU—Fresno	Henry Madden	Fresno
R.L. Engineering	Richard Lund	Placerville
Vivid Incorporated	John H. Comeau	Santa Clara

*Would your company like to support the chapter by being a sustaining member? To find out more, contact Janine Kardokus at (408)986-7568.*

*Yes, we have been experiencing technical difficulties with our web-site this summer. However, by the time you read this (or shortly thereafter) it will be back up and running. When we do come back, we will be at the same address as before:*

**[www.ASM-SCV.org](http://www.ASM-SCV.org)**

*We apologize for the inconvenience!*

### Executive Committee Roster Changes

You may have noticed that there are 4 new names on the ASMI-SCV Executive Committee. We welcome **Paul Fojas, Mingwei Li, Ramas Raman,** and **Gabriel Toea** to the committee. We also welcome back to the committee two of our favorite “retreads”, **Dave Himmelblau** and **Lou Wirtz**. Paul, Mingwei, and Gabriel were elected to the committee last spring, while Ramas, Dave, and Lou are stepping in to fill vacancies left by committee members that resigned, namely **Jen Lee, Alison Olver,** and **Guilian Gao**. We thank Jen, Alison, and Guilian for their service, and welcome (or welcome back) Paul, Mingwei, Ramas, Gabriel, Dave, and Lou!

**Executive Committee Meetings:** *The Executive Committee meeting schedule for 2002-2003 will be announced soon. Stay tuned for more info!*

## 2002-2003 Technical Program

Sep 11	<b>Lead-Free Soldering: A Global Contract Electronic Manufacturer's Perspective</b> <i>Jasbir Bath, Solectron Corporation</i>	<i>Past Chair's Night</i>
Oct 9	<b>Failure Analysis -Interesting Case Studies</b> <i>Eric Sullivan, Aptech Engineering Services, Inc.</i>	
Nov 13	<b>Surface Engineering: The Interactions Between Thermal Spray Materials, Processes, and Applications</b> <i>Andrew Nicoll, FASM, Sulzer Metco</i>	<i>Trustee's Night</i>
Dec 11	<b>TBD</b>	<i>Companion's Night</i>
Jan 15	<b>Procedure and Use of Tribo-metrology</b> <i>Dr. Norm Gitis, Center for Tribology</i>	<i>SCV Fellow's Night</i>
Feb 12	<b>Ceramics: Aluminum Oxide and Anodizing</b> <i>Dr. Frank Anderson, CoorsTek</i>	<i>Joint with ACerS</i>
Mar 12	<b>TBD</b>	
Apr 9	<b>Microfluidics</b> <i>Dr. Nghia Chiem, Teragenics</i>	<i>Student Posters &amp; Scholarship Awards</i>
May 14	<b>Laser Shock Peening</b> <i>Dr. Lloyd Hackel, Lawrence Livermore National Laboratory</i>	<i>Awards &amp; Elections Night</i>