

# LA/OC SMTA CHAPTER NEWS

APRIL 2006 EDITION

**LA/OC SMTA  
is Proud to Present...**  
April 2006 Presentation  
Dinner Meeting

**Speaker**  
Sia Afshari  
Product Manager  
RMD Instruments

**Topic**  
Tools for Verifying Lead-Free  
Materials

**DATE**  
Thursday, April 20th, 2006

**AGENDA**  
6:00PM, Social Hour  
7:00PM, Dinner/Presentation

**MEETING FEES**  
\$20, Members  
\$25, Nonmembers

**MENU**  
Teriyaki Steak

**LOCATION**  
Embassy Suites  
3100 East Frontera  
Anaheim, CA

**LA/OC SMTA  
is Proud to Present...**  
May 2006 Presentation  
Dinner Meeting

**Speaker**  
TBD

**Topic**  
TBD

**DATE**  
Thursday, May 18th, 2006

**AGENDA**  
6:00PM, Social Hour  
7:00PM, Dinner/Presentation

**MEETING FEES**  
\$20, Members  
\$25, Nonmembers

**MENU**  
Stuffed Pork Chops

**LOCATION**  
Embassy Suites  
3100 East Frontera  
Anaheim, CA

## EVENT RESERVATIONS

<http://www.laocsmta.org/reservation.php>

**NO SHOWS WILL BE INVOICED**  
If you can not attend, please cancel your reservation by 12 Noon on Wednesday, prior to the meeting. See you there!



## LA/OC SMTA Chapter is Proud to Present...

April 2006 PRESENTATION DINNER MEETING

### *Tools for Verifying Lead-Free Materials*

Presented By: **Sia Afshari, Product Manager**  
**RMD Instruments**

#### Speaker Profile

Sia Afshari is the Product Manager of RMD Instruments, Waverly, Massachusetts. Sia obtained his B.S. and MS. degrees from University of Massachusetts Lowell in Nuclear Engineering with concentration of graduate study in area of material science. Sia's background includes positions as Scientist, Design Engineer, and Program Manager with B&L Analytical division and DIANO Corporation. Sia has been involved with research, design, and development of analytical instrumentation especially XRF/XRD systems for over 25 years. His classes across the country on x-ray technology are a popular forum for learning about XRF application and measurement techniques.

#### Presentation Abstract

RoHS compliance has created an urgent need for analytical instrumentation for screening electronic components and subsequent confirmatory analyses of suspected items by laboratory methods. X-ray Fluorescence (XRF) analyzers, portable and bench top, are considered the most effective screening tools for nondestructive evaluation of electronic components for RoHS compliance. Laboratory methods for suspected parts range from Atomic Absorption Spectrometry (AA) to Inductively Coupled Plasma (ICP) for elemental analysis and FTIR/GCMS, SEM, and UV-VIS techniques for determination of Cr and Br compounds. Both XRF screening and laboratory results have come under scrutiny as of late in several papers. Interpretation of RoHS directives as it applies to calculation of prohibited elemental concentration, the nature of electronic components such as size and heterogeneity, lack of representative calibration standards for complex matrix formations, and unfamiliarity with analytical techniques have all contributed to perplexity in screening process. This presentation will provide an overview of the XRF technology as it is applied to electronic components. The effectiveness of XRF method and its limitations as a screening tool and discuss the contributing factors in obtaining accurate measurements.

#### What's Inside this Months News Letter...

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## CHAPTER OFFICERS

### *President*

**Michelle Ogihara**  
**Seika Machinery, Inc.**  
 3528 Torrance Blvd., Suite 100  
 Torrance, CA  
 TEL: 310.540.7310  
 E-mail: [michelle@seikausa.com](mailto:michelle@seikausa.com)

### *Vice- President*

**Scott Penin, CSMTPE**  
**Paradigm Manufacturing Partners**  
 11562 Knott Avenue, Unit 17  
 Garden Grove, Ca. 92841  
 TEL: 714.889.7074  
 FAX: 714.889.7062  
 E-mail: [spenin@paradigmmanufacturing.com](mailto:spenin@paradigmmanufacturing.com)

### *Secretary*

**Kathy Palumbo**  
**Production Analysis & Learning Services, LLC**  
 5 Homestead Drive  
 Trabuco Canyon, CA  
 TEL: 949.713.7229  
 FAX: 949.713.7229  
 E-mail: [palsrvs@palsrvs.com](mailto:palsrvs@palsrvs.com)

### *Treasurer*

**Riki Brown**  
**Golden West Technology**  
 Fullerton, CA  
 TEL: 714.738.3775  
 FAX: 714.738.7727  
 E-mail: [rikigb@earthlink.net](mailto:rikigb@earthlink.net)

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**Board Position Open**

*Vice-President of Membership &  
 Vendor Advertisement Chairman*  
**Board Position Open**

### *Golf Tournament Chairman*

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**Paradigm Manufacturing Partners**  
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 Garden Grove, Ca. 92841  
 TEL: 714.889.7074  
 E-mail: [spenin@paradigmmanufacturing.com](mailto:spenin@paradigmmanufacturing.com)

## Presidents Message

**By: Michelle Ogihara**

From March 10<sup>th</sup> ~12<sup>th</sup>, Scott Penin and I attended the SMTA Chapter Officer's Training Forum in Bloomington, Minnesota. Sunny, cool weather met us as we arrived and while waiting for the hotel shuttle bus to pick us up, we were able to chat with Mike Buetow of Circuits Assembly. We discussed his latest editorial and other current trends driving our industry. Right after the forum, we had this brilliant idea to invite Mike to speak at our future Corporate Member Appreciation/Promotion Breakfast planned for July and he kindly agreed!

Inspired by all that we had gained from the forum, I wanted to implement many ideas from this training session right away and for the rest of the year. I hope that those of you who attended our last meeting at Henkel/Loctite enjoyed some of the arranged activities such as the Joke-of-the-Month contest and prize drawing for those who turned in the Quick and Easy Survey. Congratulations to Steve Ratner of Universal Instruments who won the contest almost hands down. Unfortunately, after receiving the winning joke by email, the board realized that including this in the newsletter may break some type of bylaw and had to omit it. Sorry, folks, you all voted for this one and it goes to show you where our tastes in humor lie. Honorable mentions go to Dick Berryman of Northrop Grumman and David Suh of CEME.

Also, during the Forum, the new SMTA mission statement was read out loud and discussed: "The SMTA membership is an international network of professionals who build skills, share practical experience and develop solutions in electronic assembly technologies, including Microsystems, emerging technologies and related business operations." This statement and the SMTA organization are updated as the industry evolves.

I've learned at this forum that this organization is by the people and for the people to help keep our industry strong and vital. As a volunteer for the SMTA, I've met a number of caring, talented individuals that I learn not only from technically but on a personal level as well. Many capable leaders in the SMTA such as Dave Raby, our President and Gary Tanel, a National board director, and the warm staff at National headquarters have provided encouragement, support and ideas that emphasize focus on the member's needs and the local community. Within our own board, I am very fortunate to be surrounded by people of great character who willingly give their time and skills so that the membership are benefited with the best of what this organization has to offer. Don't worry though, Riki, Scott, Kathy and I know how wonderful it is to be a part of all of this. We'd like YOU to join us in the experience. On the volunteer page, please see the many ways that you can participate including some that take only a few minutes!

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## March 2006

# Implementation of Lead Free Process Meeting Review

*Written By: Riki Brown*

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Our March Meeting was one of the best meetings we have had in a long while and one of the best attended with about 50 people. Our Speaker was Dr. Brian Toleno from Henkel Loctite. It was held at the Henkel facility in Irvine. Brian gave an excellent presentation and a copy of his presentation is on our website and available to download ([http://www.laocsmta.org/archive/Pb\\_Free\\_Presentation\\_03\\_06.pdf](http://www.laocsmta.org/archive/Pb_Free_Presentation_03_06.pdf)). Brian started his presentation with a review of the RoHS requirements and it's implementation date of July 2006. It was also mentioned that California might be adopting the RoHS requirements also under SB50. If passed, and it is expected to do so, it will take effect Jan 2007. Brian pointed out that there is a great deal of reliability and other data on Sn/Pb solder but very little on Pb free. Henkel's test results show SAC alloys are slightly worse in pure vibration then Sn/PB and worse in severe reliability tests but perform better in combined thermal shock and vibration and under low – cycle fatigue conditions. Wetting angle is much higher for SAC then Sn/Pb. This results in a slightly different nozzle design in Pb free flow soldering for optimization.

In general solder will not wet as well in SAC vs. SnPb and parts will not self center as well either. These issues could contribute to more tombstoning. Operators and inspection will need to be re-trained in Pb free soldering. Making solder joints correctly and reliably will take more heat and more time than Pb free. The joints will also look different. SAC will appear rougher, dull or less shiny in appearance and this is OK. Brian found that with training, yields improved over SnPb but this was probably attributed to the training and more attention to the job with Pb free.

Brian also noted that even though there are exemptions, Sn/Pb components are not always available. Many consumer products have been produced over the last 2 years that are Pb free with no significant reliability issues noted; however, consumer products have a relatively short life span and go into obsolescence before problems can occur.

When mixing metals with Sn/Pb and Pb free, problems can occur. There are many unanswered questions because of the lack of data. Problems occur when mixing Pb free with Sn/Pb on BGAs. Do not mix Sn with SnPb bumps. Sn bumps won't reflow at the temperatures used for Sn/Pb. Pb free BGAs tend to have much more voiding and blowholes in them. Reliability studies have been performed on this issue and found that reliability was not affected however it still exceeds IPC acceptability.

Overall Brian gave an excellent presentation followed by a great tour of the Henkel facility. They employ many specialized and qualified personnel and have the latest scientific equipment to analyze any problem that might come up with the many products they sell as well as extensive process analysis for Pb free. The chapter wishes to thank Brian and Henkel Loctite for their generosity in sharing their facility and giving a most excellent presentation. All our meetings this year will be on Pb free technology so mark your calendars and be at our next meeting on April 20th at the Embassy Suites in Anaheim.

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## Members Page

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### Volunteer Opportunities with the SMTA LA/OC Chapter!!

There are many open positions to select from. We would like volunteers for the following committees. Become the champion or a member/participant. Some take only a few minutes a month! Whatever your interest and whatever time you can give is okay!

- **Student Chapter Committee**
  - Champion, open
  - Communication
  - Mentors
- **Website and Newsletter Committee**
  - Champion, Kathy Palumbo
  - Advertising
  - Technical articles
  - Design/Graphics
- **Membership Committee**
  - Champion, Michelle Ogihara
  - Welcome new members at meetings
  - Communication by phone
  - Promotion
- **Golf Tournament Committee**
  - Champion, Scott Penin – 714-889-7074
  - Sponsors/Advertisers
  - Volunteers for day of tournament
  - Organizing activities
  - Prizes, Golfers
- **Miscellaneous**
  - Photographer
  - Greeter/help out at meetings

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### Corporate Member Profile

#### *Michael Leedom, Owner/Vice President, EMT*

Michael Leedom is one of the owners and acting Vice President of eMT, a 2<sup>nd</sup> generation, family-owned contract manufacturer that has been offering a turnkey solution for complex integrated enclosures and complete turnkey box building manufacturing services for over 25 years. eMT is an ISO-9000-2000 state-of-the-art facility located in Lake Forest, California. The company prides itself as a manufacturer that utilizes sophisticated software, and test in conjunction with the technical expertise of higher-tier companies with a personal touch of a family-owned business.

On a personal note, Michael is married to the lovely Jeanine and they have 3 children, Tim, 17, Justine, 14 and Lance, 4 years old. The youngest was born 2 days before eMT's grand opening! They enjoy a very active lifestyle including camping, RV, motorcross riding, golf and a variety of other active sports together.

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Are you ready for the July 2006 deadline?

# WEEE/RoHS Compliance Testing

(read below for details)

### Specialized Testing Services

- Liquid Crystal Hot Spot Detection
- Crack Testing – Magnaflux, Permanent Fluorescent dye and Dykem
- CAF/CFF Testing
- Surface Insulation Resistance Testing
- RoHS/WEEE Evaluation and Compliance Testing
- Product Reliability Assessment
- Memory Module Environmental and Mechanical Qualification
- Material Identification (molecular and elemental)
- Product ESD Immunity Testing
- Contamination Testing
- Failure Analysis
- IPC-6012B Structural Integrity Testing
- Precision Cross Sections
- Microscopic Inspection
- Integrated Circuit Package Decapsulation
- Design for Reliability Evaluation
- Dimensional Measurement
- Product Competitive Analysis
- Product Design Verification
- Design for Testability



### Electrical Test Capabilities

- Curve Tracing
- Time Domain Reflectometry (TDR)
- 500Mhz Digital Oscilloscope
- High Resistance Tester
- Frequency Counter
- LCR Testing
- Waveform Generator
- Multi-channel data acquisition
- Dynamic Signal Analysis
- Electric Strength Testing
- HiPot Testing

### Environmental Test Capabilities

- Temperature Soak/Burn-in
- High Temperature Storage Testing
- Low Temperature Storage Testing
- Temperature Cycling
- Thermal Shock
- Unbiased and Biased Temperature-Humidity
- Unbiased and Biased HAST
- Autoclave
- Single Axis Sine and Random Vibration
- Single Axis Shock Testing
- Mechanical Shock up to 6000g
- 3 axis – 6 dof Random Vibration
- HALT/HASS/HASA
- Tensile/Compression Testing

### Analytical Test Capabilities

- Field Emission Scanning Electron Microscope (FESEM)
- Energy Dispersive X-Ray Analysis – EDS
- Energy Dispersive X-Ray Mapping
- Fourier Transform Infrared Spectrometry (FTIR)
- Microscopic FTIR
- Ion Chromatography
- Research Grade Thermal Testing with DMA, Modulated DSC, Modulated TMA (all with sub-ambient operation) and TGA
- High Performance Liquid Chromatography (HPLC)
- Inductively Coupled Plasma Optical Emission Spectrometry (ICP-OES)
- Micro spot X-ray Fluorescence (XRF) for RoHS, elemental identification and plating thickness measurement

## WEEE/RoHS compliance testing - New at Accolade Engineering Solutions

Now you have a resource for RoHS compliance testing. AES has acquired a state of the art Horiba X-Ray Fluorescence Microscope. With an LN2 cooled High-Purity SI detector, X-ray guide tube technology and evacuated X-Ray path, our XRF system can detect elements from Na to U with RoHS element detection limits down to < 5ppm. We also have a field emission scanning electron microscope with an EDAX EDS system with the newest detector technology for light element analysis at the microscopic level along with X-Ray mapping. For even lower elemental detection limits (ppb range), we also have a Perkin-Elmer Optima ICP-OES system.





## Get Connected!

### CHECK OUT

Chapter News  
 Technical Articles  
 Membership Directory  
 SMTA News  
 Books

[www.smta.org](http://www.smta.org)

Those of you who are receiving this newsletter by U.S. mail, please forward your e-mail address to:

[secretary@laocsmta.org](mailto:secretary@laocsmta.org)

...so that we may e-mail the news letter to you.

This helps lower our distribution costs, which means more benefits for our members.



**Isn't it time...  
 You advertised...**



	Business Card	1/4 Page	1/2 Page
1 Month	\$ 50.00	\$ 90.00	\$ 175.00
1/2 Year (5 Issues)	225.00	400.00	750.00
1 Year (9 Issues)	375.00	675.00	1,200.00

### Submission Guidelines

**Acceptable Artwork Formats:** .pdf, .jpg, .bmp, .gif, .tif, html, & Camera Ready Artwork. Laser Printed Pages will not be accepted.

**Acceptable Font Style:** Graphic, MSWord, or html.

AD SIZES	WIDTH	LENGTH
Business Card	3.75"	2.25"
1/4 Page	3.75"	4.75"
1/2 Page	7.75"	4.75"
OR	3.75"	9.75"

### Schedule

Ads should be submitted at least one week prior to the end of the month proceeding the first month of desired publication.

### Vendor Tables

Display your products and literature at a Chapter Meeting for a fee of \$100, and receive a bonus of one free 1/4 page AD for one month.

### Contact

Scott Penin

Call: (714) 403-1874 / E-Mail: [info@paradigmmanufacturing.com](mailto:info@paradigmmanufacturing.com)

## WE NEED VOLUNTEERS!!!!

SMTA is an all volunteer organization.

The only way our chapter can put on successful events is through our volunteers.

We are in need of many volunteers for our upcoming Golf Tournament.

If you would like to be part of a great event please contact our

**Vice President Scott Penin**

**[spenin@paradigmmanufacturing.com](mailto:spenin@paradigmmanufacturing.com)**

**Or**

**714.889.7074**



5200 Willson Road · Suite 215 · Edina, MN 55424-1343  
T 952-920-7682 · F 952-926-1819 · [www.smta.org](http://www.smta.org)

## Invitation to Start an SMTA Student Chapter

The SMTA is looking to start student chapters! The mission of SMTA student chapters is to build a network of students and professionals and to create learning opportunities for students to develop skills and knowledge necessary to work in electronic assembly technologies and related business operations.

A student chapter may be established at any post secondary school that supports surface mount technology, microelectronics, electronics packaging, or related industries via programs, courses, and/or activities. Only five student members are needed to start and maintain a student chapter. The student membership cost is \$5.00 per year. You can find the application for an Associate (Student) membership on-line at [http://www.smta.org/membership/membership\\_step\\_1.cfm](http://www.smta.org/membership/membership_step_1.cfm). Membership puts students in touch with the many SMTA publications and services. It also provides student discounts on conferences along with many opportunities for professional development.

*The details of operating an SMTA student chapter are quite simple and spelled out in the "SMTA Student Chapter Guidelines and Bylaws".*

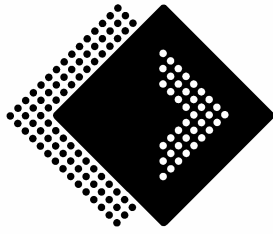
If you would like to start an SMTA student chapter at your school, please complete the "Student Chapter Start-up Application Form" that is attached.

Thanks for considering the formation of an SMTA student chapter at your school!

Sincerely,  
Sis Sullivan  
Student Chapter Coordinator  
[sis@smta.org](mailto:sis@smta.org)

**TO FIND OUT MORE ABOUT FORMING  
YOUR OWN STUDENT CHAPTER**

**GOTO: <http://www.laocsmta.org/Students/index.html>**



**SMTA**  
Surface Mount Technology Association

## STUDENT CHAPTER START-UP APPLICATION FORM

Application for academic year beginning \_\_\_\_\_ (Month/Year)

School Name \_\_\_\_\_

### SCHOOL ACTIVITIES THAT SUPPORT RELATED INDUSTRIES

Please describe how your school supports the surface mount technology, microelectronics, electronics packaging, or related industries, in terms of school programs, courses and or activities offered.

### FACULTY ADVISOR

Name and contact information of the **SMTA member** to serve as faculty advisor:  
(Advisor must be an SMTA member)

Faculty Advisor Name: \_\_\_\_\_

Preferred Address: \_\_\_\_\_

Business Phone: \_\_\_\_\_ Business Fax: \_\_\_\_\_

Business Email: \_\_\_\_\_ Member Number: \_\_\_\_\_

### STUDENT MEMBERS

Five **SMTA student members** are required to start and maintain an SMTA student chapter. Please list five students that are currently SMTA members at your school.

Student 1 Name: \_\_\_\_\_ Member Number: \_\_\_\_\_

Student 2 Name: \_\_\_\_\_ Member Number: \_\_\_\_\_

Student 3 Name: \_\_\_\_\_ Member Number: \_\_\_\_\_

Student 4 Name: \_\_\_\_\_ Member Number: \_\_\_\_\_

Student 5 Name: \_\_\_\_\_ Member Number: \_\_\_\_\_

Please mail, fax, or email this form to:

SMTA Headquarters  
5200 Willson Road  
Suite 215  
Edina, MN 55424  
Fax 952.926.1819  
e-mail: [sis@smta.org](mailto:sis@smta.org)  
[www.smta.org](http://www.smta.org)

All Student Chapter info (including this form) is available at : <http://www.laocsmta.org/Students/index.html>

If you have any questions please...just give us at 952-920-7682



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