

LA/OC SMTA CHAPTER NEWS

April 2005 EDITION

**LA/OC SMTA
is Proud to Present...**

April 2005
Presentation/Dinner Meeting

Speaker

Kathy Palumbo

Topic

Eliminating the "WAG" in
Final Finish Selection

DATE

Thursday, Apr. 21st, 2005

AGENDA

6:00PM, Social Hour

7:00PM, Dinner/Presentation

MEETING FEES

\$20, Members

\$25, Nonmembers

MENU

Grilled Red Snapper

LOCATION

Embassy Suites

3100 East Frontera

Anaheim, CA



Los Angeles & Orange County Chapter

"The Surface Mount Technology Association membership is a network of professionals who build skills by sharing practical experiences and developing solutions in electronic assembly technologies and related business operations."

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

April 2005 Presentation/Dinner Meeting

Eliminating the "WAG" in Final Finish Selection

Presented By:

Kathy Palumbo, CEO & Founder, PA&LS, LLC

PRESENTATION ABSTRACT

As a designer/assembler, your decision of which final finish to specify is critical to the success of the PCB assembly. With the wide range of choices available such as HASL, ENIG, Immersion Silver, Immersion Tin, OSP, etc., how do you know which one to choose? With the trend toward Lead-Free and RoHS compliance, your selection becomes even more critical, so it is timely that we investigate and re-evaluate all of the choices.

Our speaker will enlighten you on the Pros and Cons of the various surface finishes available in the market today. Design fab notes for each surface finish, internal and external characteristics that one should consider when selecting a final finish, various benefits and trade-offs of each final finish application, real-life results of the successes and failures after assembly to help you better understand the intricacies and importance of specifying the correct surface finish for each of your designs, a method on selecting the right board house for each particular design, Pro's & Con's chart for each surface finish, and Lead-Free 'Discoveries' will be discussed.

SPEAKER PROFILE

Kathy Palumbo, CEO & Founder of Production Analysis and Learning Services LLC, has been in the electronic industry for over 20 years. Prior to starting Production Analysis and Learning Services LLC, she worked as a Manufacturing & Industrial Engineering Manager at Viking Components, Inc. Kathy holds a Bachelor of Science degree in Electronic Engineering and has worked in a wide variety of Electronic Engineering positions throughout her career such as, Design, Test, Manufacturing, Reliability, & Quality.

Kathy is a certified IPC Master Instructor (MIT) for the IPC-A-610 & 600 documents, a certified IPC Trainer (CIT) for the J-STD-001 documents, and provides technical support, presentations, and seminars at various OEM's and electronic trade shows and events. Kathy is currently serving on the LA/OC SMTA Chapter board as Secretary, the Orange County IPC Designer's Council board as Treasurer, and is actively involved with local University Industrial Advisory Committee's.

Production Analysis and Learning Services LLC provides full turnkey Electronic Circuit & PCB Design, Manufacturing, Reliability, Quality, & Maintenance Engineering support services as well as Technical Sales and Support Services with problem solving capabilities unique to the Electronic & Microelectronics Assembly Industry.

**LA/OC SMTA
is Proud to Present...**

May 2005
Presentation/Dinner Meeting

Speaker

Kris Vasoya

Topic

The Future of PCB Thermal
Management

DATE

Thursday, May 19th, 2005

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!

What's Inside this Months News Letter...

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Presidents Message

By: Scott Penin

What was your opinion of APEX? I saw and heard both good and not so good things being said at the show. Some booths, you couldn't see daylight there were so many people; yet others it was like the show was happening next week. It seems the economy is on its way, but companies are still selective on their purchases with machines capable of No-Lead manufacturing making the largest impact. Please write the board and let us know your view.

Upcoming local events: Our next meeting will be on Thursday, April 21st. Same time, same place. If you can make it we would love to have you. This months meeting will feature our own V.P. of Education/Secretary, Kathy Palumbo. The topic "Eliminating the "WAG" in Final Finish Selection" was a hot one for the OC IPC Designer Council group, as it was booked solid 2 weeks in advance with over 60 attendees and a waiting list of 10 people deep. The presentation proved well worth it too as the feedback from all attendees was outstanding.

National elections are getting close. If you are interested in serving on the national board, please contact Viki Hamada at 408-982-0161 for further information. It is a great opportunity to aid in the direction of society.

We have been planning the calendar for 2005. There were 20 individuals who voted for board members and filled in the survey. We will be using the results of this survey for planning our meetings. Those of you who have not had an opportunity to fill in the survey, but would like to have input on our monthly meeting topics can still do so by e-mailing your ideas to myself, Dick Garlic, or any of our other board members.

The election results are in for our chapter. Our board remains unchanged from last year. We did not have any members that wished to run for any board positions, but we did have several write-in candidates. If you were one of those write-in candidates then please contact myself our Michelle so we may discuss how you can participate on the LA/OC SMTA board. The success of our chapter is the result of our strong board members and their dedication to the mission statement of SMTA. I would like to thank the board for all their hard work this year in keeping our chapter strong and functioning and look forward to a better year in 2005. Please see the left hand column for the 2005 Board members. As always, if you have any suggestions for next year's meetings, are looking to be part of the LA/OC SMTA board, and/or volunteer then please contact us at.

March 2004 Meeting Review

Written By: Atul Mehta, JPL

The LA/OC SMTA chapter meeting for the month of March was held at Embassy Suites in Anaheim. The theme for the evening was "Hawaii". No Hula dancers though.

After brief introductions and chapter business announcements the technical presentation began promptly. The meeting was well attended due to the topic being a real hot one – "Practical Investigations into the use of No Lead Solders for SMT Reflow". Marc Peo from Heller Industry conducted the presentation.

The presentation began with the discussion on the state of affairs for no lead solder adoption. The original drive for pushing no lead solder began in late 1999 by Japan. Most of the other Asian countries such as Taiwan, Korea and China adopted to no lead especially those who were sub contractors of Japanese companies. Next Europeans followed with modest volume of no lead assemblies and later came up with their protocol called RoHS and WEEE to be implemented by 2006. In North America there is lot of interest and awareness but the use of no lead solder is limited to the Japanese captive factories.

As we prepare to adopt no lead several questions arise. First of all can my existing oven be used for no lead reflow? The answer is most likely "Yes". Most convection type ovens are capable of operating at higher temperatures required for no lead reflow. The IR ovens may have issues. However Marc warned that it is best to determine the capability of the oven by running experiments as follows: Choose a paste, Run sample profiles, Use board samples similar to your own production boards, & Generate matrix of important parameters.

Some of the commonly used no lead alloys are: Sn/Ag 3.9/Cu 0.6 – NEMI recommended, Sn/Ag 4.4 – 4.1/Cu 0.5 – 0.9 – IDEALS – Europe, Sn/Ag 3.0/Cu 0.5 – JEITA and IPC recommended. The process window for Eutectic Sn 63 solder is typically from 15 to 35 degrees C whereas one for lead-free alloy is from 5 to 15 degrees which is much narrower. This results in delta T on PWB being very critical for lead free process. Further the process repeatability becomes highly critical since the process window and delta T are almost the same value. As in example if process window is 10⁰ C and delta T is also 10⁰ C the margin for error is essentially zero.

During the profiling limit the exposure of the board above 200⁰ C to less than 60 seconds to protect the components. Extended time above melting point is not desirable, instead limit 20 -40 seconds spike above 217⁰ C and maximum temperature to 230 - 240⁰ C.

The appearance of solder joint almost always appears to be grainy compared to leaded solder joints. The joint is acceptable and should not be reworked. The inspectors must be trained for the new solder joint acceptance criteria.

Marc pointed out that their experimental result showed no significant difference in solder joints formed in air vs. those formed in Nitrogen environment. However many high reliability products such as Telecom are run in nitrogen atmosphere. Lead-free joints are susceptible to more voiding. Choosing proper flux chemistry can alleviate the voiding problem. Cleanliness of the board is important during the lead-free processing. Choosing proper PCB finish is imperative to produce high quality soldering. Due to the higher processing temperatures, board warpage may become an issue. Faster cooling is desirable for obtaining a finer solder grain structure.

Overall it was a great presentation. Marc cited numerous practical examples of his own experiences with lead-free solder which was quite enlightening. The chapter thanks Marc for a wonderful presentation.

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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. 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".

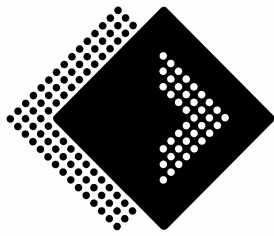
If you would like to start an SMTA student chapter at your school, please complete the "Student Chapter Start-up Application Form" that is attached.

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

Sincerely,
Sis Sullivan
Student Chapter Coordinator
sis@smta.org

**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
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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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

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A Planning Committee member will typically donate just an hour/month performing various planning activities. The activities could range from researching various meeting locations, costs, supplies, and speakers needed, to providing incentive/survey methods and input/feedback on newsletter, website, and/or meeting content.

Many committees are available to choose from, such as the *Christmas Party Committee, Tour Meeting Committee, Chapter Training Program Committee, Golf Tournament Committee, Attendance Committee, Membership Committee, Student Chapter Committee, New Membership Committee, Fund Raising Committee, Technical Speaker Committee, and Newsletter & Website Committee.*

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So come on out and join one of our Volunteer Planning Committees and be a part of our **"Habitat for Leadership Development"**!

Remember....Life is Change...Growth is Optional...Choose Wisely!

For More Information E-mail Michelle Ogihara at michelle-o@jp.seika.com

OR

Contact by Phone at 310.540.7310