Chapter Meeting Offers In-Line Solder Paste Inspection Panel Discussion and 3M Innovation Center Tour

Meeting Details

Place: 3M Innovation Center
3M Center, Building 278
2350 Minnehaha Ave.
St. Paul, MN 55144-1000
Phone: (651) 737-0278

Date: Tuesday, November 6, 2007

Cost: $20 Members / $30 Non-members

Time/Agenda:
12:30 to 1:00 PM – Registration, Check-In
(Note: This meeting requires advanced registration.)
1:00 to 2:30 PM – 3M Innovation Center Tour
3:00 to 5:00 PM – In Line SPI Equipment Panel Discussion

In-Line Solder Paste Inspection

If you are in the market for in-line Solder Paste Inspection AOI equipment, then this panel discussion is a must see. Hurry, attendance is limited and you must pre-register by Friday, November 2, 2007.

Panel discussion Write-Up:
The topic of the panel is “In-Line Solder Paste Inspection Equipment” moderated by Phil Zarrow. SPI is the new advancement toward process monitoring solder volume measurement without requiring destructive shear testing after reflow processing. This measurement method is done in many forms (e.g. laser, optical, etc.). Representatives from some equipment vendors in the panel are:

Jeff Bishop
Agilent Technologies

Paul Haugen
Senior Technologist
CyberOptics Corp.

Carlos Melendez (Regional Sales Manager)
John Weisgerber (Engineering Manager for the SVS Product Line)
GSI Group

Martin Gershenson
Christopher Associates (Representing Koh Young)

Pre-registration is required by Friday, November 2, 2007. Please click or paste the following into your web browser.

http://www.smta.org/chapters/rsvp.cfm?BEE_ID=1403&BULK_EMAIL_NO=3
Hello Everyone,

Well, I hope everyone is enjoying a beautiful fall here in the mid-west. It is time for our last fall chapter meeting and it should be a great one. Phil Zarrow is going to lead an industry panel discussion on Automated In-line Inspection for solder paste. All of us in the industry that require traceability and have need of 100% inspection should not miss this event. Phil always puts on a lively and entertaining dialog and invokes those hard questions from the panel and the audience. In addition, he will touch on other inspection methods and lead a general Q&A for our 4 panelist guests. 3M has graciously offered to host the event at their Innovation center with a tour before the meeting. As always, we try to keep the cost at minimum and as a reminder, registration ahead of time is required.

Our year has been a good one for our chapter with some great events and meetings. Our last meeting at HEI was well attended and many stayed for the manufacturing tour of HEI’s Victoria facility. As part of our last meeting, all proceeds raised at the HEI meeting were donated to the Southern Minnesota flood relief fund. Some of our members and their families were tragically affected by the flood in the Rushford area. Our chapter matched the donation and 1,650$ went to the flood re-build fund. These donations help keep our membership strong and support from our chapter will be used to assist some of our members in the long slow process of rebuilding. While on the subject of donations, our chapter has made several over the last year that are worth mentioning. We support our NDSU student chapter and donated 500$ to them. In addition, 700$ was donated to make-a-wish from proceeds of the Golf outing raffle and the vendor day raffle. A 500$ donation to the national SMTA Hutchins fund for support of a student was made this year as well. I would personally like to thank our members for helping us support these well deserved charities and organizations by attending our chapter meetings. Lastly, our chapter gave a golf outing grand prize, of a trip to Florida to SMTAi.

Kudo’s goes out to our chapter officers for bringing in a second place for chapter of the year this year. The award was presented at the SMTAi show. Great work everyone. If anyone would like to join our chapter officers in trying to achieve a first place next year, please consider being an officer for 08. With chapter elections around the corner, now is the time to put your name into the hat for an officers position with our local chapter. Our organization relies on volunteers to run our chapter and our meetings. If anyone is interested in helping others, in turn helping yourselves to become more involved in the electronics industry, please contact any of our officers or the national division of the SMTA. We can always use extra input I meeting planning, preparation and events. In turn, each person helps influence the chapter’s direction and educational output.

So, don’t miss Phil Zarrow and his round table meeting focused on AOI solder paste inspection. The meeting will be held on Nov 6th, at 3M’s Innovation Center with a tour. So with our next event just around the corner, we hope to see you all attend. As with most all our events, registration is easy with links provided in our chapter emails, but more information is always available on the local-chapters section of the SMTA web page (www.smta.org). If anyone has ideas for the social, or ideas or feedback for meeting topics, presentations and other events, please contact one of your local chapter officers.

Thank you all for your time.

Anthony Primavera - Ph.D.
Boston Scientific Corporation
Anthony.primavera@guidant.com
Panel Discussion Details:

Moderator - Phil Zarrow (President and Principal Consultant) – Bio:
Phil Zarrow has been involved with PCB fabrication and assembly for thirty years. His expertise includes the manufacture of equipment for circuit board fabrication and assembly of through-hole and surface mount technologies. In addition to his background in automated assembly, Mr. Zarrow is recognized for his expertise in surface mount technology processes and methodologies, particularly, printing, placement, reflow and wave soldering, Design for Manufacturability and Assembly, as well as material issues including lead-free implementation. Having held key technical and management positions with Vitronics Corporation, Excellon-Micronetics and Universal Instruments Corporation, GSS/Array Technology, and ITM Consulting, he has extensive hands-on experience with set-up and troubleshooting through-hole and SMT processes throughout the world. Phil is a member of IPC, SME, IMAPS, a co-founder of ITM Incorporated, and is a past national level officer and national director of the Surface Mount Technology Association (SMTA). He was also Chairman of the Reflow Committee for SMEMA. He was the recipient of the SMTA's Member of Distinction Award (1995) and Founders' Award (2000). Mr. Zarrow has served on the Editorial Advisory Board for Circuits Assembly Magazine and is the author of the award winning "On the Forefront" column.

For more information on in-line Solder Paste Inspection equipment from the panel participant companies please refer to their respective websites:

- Agilent Technologies  
  http://www.agilent.com

- CyberOptics Corp.  
  http://www.cyberoptics.com/products/solder_paste_inspection/

- GSI Group  
  http://www.gsig.com/systems/frame_svs.html

- Christopher Associates (Representing Koh Young)  
  http://www.christopherweb.com/newsite
  http://www.kohyoung.com

3M Innovation Center Tour
The 3M Innovation Center is a one-of-a-kind facility, designed to showcase how we make uncommon connections that result in unique solutions for you. We invite you to spend 90 minutes immersed in innovation. Located in the heart of 3M’s global headquarters, the 3M Innovation Center offers an extraordinary journey into how we ignite the spark of innovation on your behalf to help fuel your business success. The centerpiece of the 3M Innovation Center is the World of 3M Innovation. The World of 3M Innovation is comprised of interactive displays, films, presentations and stories that provide us with the opportunity to connect our customers to the depth and breadth of everything that 3M has to offer (e.g., business processes, technologies, products and global connectivity). We welcome you to see, hear, touch, interact and discover how these technologies and processes can be transformed into profitable solutions for your business.

Tech Links
Download a Glossary of Acronyms Relevant to Electronics Manufacturing. Please insert the following link into your browser:
SMTAI was moved from the ATE show in Chicago, IL to Orlando, FL and was held on October 7-11. This show was a huge success and far exceeded the expected number of attendees. The exhibit hall was sold out with approximately 150 suppliers. The conferences held were "over the top" and received rave reviews.

The prestigious Founder’s Award was presented to Jeff Kennedy from Celestica, for his exceptional contributions to the industry as well as the years of support and service he has provided to the SMTA. Congratulations Jeff!

The SMTA Upper Midwest Chapter also accepted the award for 2nd place for Chapter of the Year. 1st place went to LA/Orange County. This award was accepted by Erik Stromberg and Todd Ness on behalf of the Chapter and the other officers not in attendance. This is a great achievement for our Chapter, as over 35 Chapters compete for Chapter of the Year and are evaluated on many different criteria. Our Chapter remains one of the strongest Chapters in membership and meeting attendance. Thanks for all of your support.
MIDWEST CHAPTER DONATES TO 2007 FLOOD RELIEF:

Thank you to those that attended the Chapter Meeting September 11. The proceeds from this meeting were matched by the Chapter and we donated $1650 to the Southern Minnesota Initiative Foundation. This foundation established a Business Recovery Fund to assist southeastern Minnesota businesses affected by the August devastating flood. The dollars will be allocated as grants to help get local businesses back in operation. The goal is to assist businesses in meeting financial needs and will focus on the purchase of tangible assets lost or damaged in the flooding. This will assist and support the long term economic viability of the communities impacted in seven Minnesota counties. The fund has provided to over 100 businesses in need. Thank you for support as many companies in our industry were impacted by the flash flood. Pictures below of Rushford, MN where one of RiverSide Electronics facilities is located. For more information please visit http://www.smifoundation.org

Rushford, MN
Flooding inside and outside RiverSide Electronics’ facility located in Rushford, MN
**Tech Tip** – by Dale Lee, Boston Scientific Corporation

**Customized Solder Stencil Design For Optimized Component Attachment Solder Volume**

As components decrease in size, their corresponding mounting pads also decrease. Small component mounting pads have smaller process margins. For small component mounting pads (<0.020”) with a trace connection of the same size can increase the effective SMT pad size by greater than 50% and thus a potential insufficient solder connection. Figure 1 illustrates the impacts on component mounting pad size with various trace sizes.

Traditionally, solder stencil design was performed across all component mounting pads based on copper pad size only. Since solder mask opening and trace/plane interconnection defines the potential component mounting pad size, by optimizing the solder stencil aperture size for each pad location the solder volume can be adjusted to meet the minimum solder volume requirements for each unique solder connection location.

Lead free assembly has increased the demand for proper solder volumes. Component and PCB warpage may increase with lead free soldering temperature resulting in snowman/stacked ball solder defects due to gaps forming between the solder balls on components and paste on board in reflow. If the design cannot be modified to balance the effective pad size, impacts to the assembly process may be minimized through customizing the stencil design to match the effective pad sizes of the PCB.
### Chapter Calendar of Events

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<tr>
<th>Date / Time</th>
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<tr>
<td>November 6, 2007</td>
<td>AOI/ X-ray and test equipment display technical panel discussion</td>
<td>3M Innovation Center St. Paul, MN</td>
<td>952-224-9300 ext. 2 612-220-3272 Mobile</td>
<td>Erik Stromberg <a href="mailto:estromberg@er-minnesota.com">estromberg@er-minnesota.com</a></td>
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<td>June 11, 2008</td>
<td>Vendor Day at 3M</td>
<td>3M Center St. Paul, MN</td>
<td>952-920-7682</td>
<td>Leslee Johns <a href="mailto:leslee@smta.org">leslee@smta.org</a></td>
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<td>July 22, 2008</td>
<td>Annual Golf Outing</td>
<td>Tartan Park Lake Elmo, MN</td>
<td>952-224-9300 ext. 2 612-220-3272 Mobile</td>
<td>Erik Stromberg <a href="mailto:estromberg@er-minnesota.com">estromberg@er-minnesota.com</a></td>
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### Corporate Members of our Chapter

- 3M Company
- Accu-Tronics Inc.
- Aim Tek, Inc.
- Altron, Inc.
- Alza Corporation
- Analog Technologies Corp.
- ASC International
- Ayrshire Electronics MN
- Banner Engineering Corp.
- Bergquist Company, The
- BTW Inc.
- BW Technologies
- Conductive Containers Inc. (CCI)
- CyberOptics Corporation
- Datakey Electronics
- Digi-Key Corporation
- E-Tool
- El Microcircuits, Inc.
- Electronic Systems Inc.
- Great Lakes Engineering
- HEI Inc.
- Infinite Graphics
- Ironwood Electronics
- Itron, Inc.
- JMW Enterprises, Inc.
- Kimball Electronics Group
- MarquipWardUnited
- Micro Dynamics Corp.
- Microstructures, Inc.
- New Wave Components
- Phoenix International
- Raven Industries Inc.
- Restronics Company, Inc.
- Riverside Electronics Ltd.
- Rockwell Collins
- Sauer-Danfoss
- Seagate Technology
- V-Tek, Inc.
- Winland Electronics, Inc.

### Global Participating Members of our Chapter

- Creation Technologies Inc.
- Creation Technologies – St. Peter
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dwstiff@mmm.com

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Ad Space For Sale

We Appreciate Your Continued Support of This Newsletter!
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.

<table>
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<th><strong>Our Chapter Leaders</strong></th>
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<tbody>
<tr>
<td><strong>Anthony Primavera, Ph.D.</strong></td>
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<tr>
<td>(President)</td>
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<tr>
<td><strong>Erik Stromberg</strong></td>
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<tr>
<td>(Vice President,</td>
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<td>Golf Chairman)</td>
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<tr>
<td><strong>Katie L. Wohletz</strong></td>
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<tr>
<td>(Secretary)</td>
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<tr>
<td><strong>Todd Ness</strong></td>
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<tr>
<td>(Treasurer)</td>
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<tr>
<td><strong>Alexander Gene Zeitler</strong></td>
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<td>(Website)</td>
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<tr>
<td><strong>David Stiff</strong></td>
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<tr>
<td>(Chairman, Newsletter Editor)</td>
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<tr>
<td><strong>David Raby</strong></td>
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<td>(SMTA Board Liaison)</td>
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2008 Pan Pacific Symposium Call for Papers
Promoting technical interchange and international networking

The Pan Pacific Microelectronics Symposium promotes international technical interchange and provides a premier forum for extensive networking among microelectronics professionals and business leaders throughout the Pacific Basin. Participants come from Australia, China, India, Japan, Korea, North America, Southeast Asia, and Taiwan as well as Europe!

The Pan Pacific Microelectronics Symposium focuses on the critical business markets and technologies of microelectronic packaging, interconnection, microsystems technology and assembly. The Program Committee invites you to submit your recent results for presentation at the Symposium on any of the following topics.

For a PDF copy of the Pan Pac 2008 Call for Papers, please click here
http://www.smta.org/files/pan_pac_cfp_08.pdf
Directions to 3M Innovation Center

3M Center, Building 278
2350 Minnehaha Ave.
St. Paul, MN  55144-1000
(651)737-0278

From the West:
Take I-94 E
Take exit 246C to merge onto McKnight Rd N 1.1 mi
Turn right at Minnehaha Ave E 0.1 mi

From the East:
Take I-94 W/US-12 W
Take exit 247B toward McKnight Rd 0.2 mi
Merge onto Hudson Rd 0.6 mi
Turn right at McKnight Rd N 0.9 mi
Turn right at Minnehaha Ave E 0.1 mi