DALLAS CHAPTER IS PROUD TO PRESENT....
“Advances and New Developments in Vapor Phase”

Friday, September 16th, 2016

David Suihkonen, Vice President - North America, R&D
VaporTech / IBL Technologies

ABSTRACT:
This discussion will cover advances in equipment and process as well as discuss new applications and uses for vapor phase reflow. Rework, Soft Vapor, and automatic thermal profiling will be discussed as well as equipment advances in vapor containment and power savings.

(Continued Page 2)
Bio-

David Suihkonen - VP North America, R&D VaporTech / IBL Technologies
Founding Partner: R&D Technical Services,
Winner: Vision Award, Best New Product Award, Soldering Equipment, 2007
Founding Partner: VaporWorks,
Winner: Circuits Assembly New Product Award,
Winner: Global SMT Award, Repair and Rework 2008 & 2009
Over 25 years’ experience with vapor phase reflow and rework technology including process, equipment design and development, manufacturing, marketing, management, and customer support. Co-developer of the RD52 Inline Vapor Phase Reflow Oven and V-Works, the world’s first vapor phase single component rework process and equipment.

The Dallas chapter SMTA is proud to announce two award-winners among us!

SMTA Board of Directors has selected
Gary Tanel to receive the prestigious 2016 Founder's Award (SMTA’s highest honor), which will be presented to him at SMTA International in Rosemont in September. This award recognizes not only Gary’s contributions to the SMTA, but also to the industry at large. Gary is currently the Dallas chapter president.

SMTA Board of Directors has also recognized Viswam Puligandla with the 2016 Member of Technical Distinction. Viswam is currently one of the Dallas chapter’s technical advisers.
Be sure to congratulate these two men when you see them at the next chapter meeting.

Upcoming Chapter meetings
Sept Technical Speaker:

David Suihkonen-Vice President North America, R&D
VaporTech / IBL Technologies

Chapter Calendar for 2016:
Sept 26-29.
SMTA-I in Chicago
Nov 4th
DFR presenting DFM/DFR
Dec 2nd
Member party

Chapter Calendar for 2017
Jan-Chapter Meeting
March-Expo
April-Chapter Meeting
May-Chapter Meeting
June-Chapter Meeting
July-Top Golf
Sept 2017
National Medical Symposium in DFW
Oct.2017 SMTAI in Chicago
November 2017 -
Dallas Geek-A-Palooza
Dec. 2017-Member Party
Presidents Message

Greetings to SMTA Dallas Chapter members and guests.

We have had another wonderful first half of 2016 and we are excited to be planning for
the rest of 2016 and ahead for 2017. I am happy with our new meeting venue in Rich-
ardson as it offers us a private room with better sound and lighting. Hope you all
agree. Tell your colleagues about our meetings and send me their contact information so that I can get
them on our chapter mailing list. Be sure you make every effort to get to our big international event
(SMTA-I) in Chicago September 26-29. It is a world class event and you will learn a lot.

Dallas Chapter Membership Rolls—115 Members!!

We welcome our newest members to the SMTA family:

<table>
<thead>
<tr>
<th>Name</th>
<th>Member Type</th>
<th>Company</th>
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</thead>
<tbody>
<tr>
<td>Parker, Jim</td>
<td>Individual</td>
<td>Renata Batteries</td>
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<td>Helms, Joseph</td>
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<td>Varghese, Shupha</td>
<td>Participating</td>
<td>Optimal Electronics Corporation</td>
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<td>Carter, Gary</td>
<td>Individual</td>
<td>ThingWeaver Solutions, LLC</td>
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<td>Day, Charles</td>
<td>Associate (Students/Retirees)</td>
<td>Matthews Consulting</td>
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<td>Matthews, Chad</td>
<td>Individual</td>
<td>Vi Technology</td>
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<td>Rivas, Rich</td>
<td>Participating</td>
<td>Osai Automation System USA Corpor</td>
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<td>Gallizio, Giuliano</td>
<td>Corporate Supplier</td>
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Corporate Members: 15  Corp Participating members: 13  Individual Members: 59
Global Members: 3  complimentary members: 1  Participating Members: 13
Associate/Student Members: 11

Dallas Chapter Corporate Member List - September, 2016

<table>
<thead>
<tr>
<th>Name</th>
<th>Member Type</th>
<th>Company</th>
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<tr>
<td>Alliance Rubber Company</td>
<td>JTAG Technologies</td>
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<td>Keysight Technologies</td>
<td>Southwest Systems Technology Inc.</td>
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<td>BBM, Inc.</td>
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<td>.St. James Technologies</td>
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<td>Mek Americas LLC</td>
<td>Sunshine Global PCB Group</td>
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<td>Conecsus LLC</td>
<td>.National Circuit Assembly</td>
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<td>Test Equity LLC</td>
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<td>DG Marketing Corporation</td>
<td>Optimal Electronics Corp</td>
<td>The IPS Group, LLC</td>
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<td>E.T.S. Group, Inc.</td>
<td>Osai Automation System USA Corp</td>
<td>Thing Weaver Solutions, LLC</td>
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<td>PAC Global, Inc.</td>
<td>Trilogy Circuits, Inc</td>
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<td>Fujitsu Network Communications</td>
<td>Philips Entertainment</td>
<td>Variosystems, Inc.</td>
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<tr>
<td>GSC (Garland Service Company)</td>
<td>Precision Technology, Inc.</td>
<td>VI Technology</td>
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Page 4 Technology Corner

What is Via Filling? Who needs it and WHY?

Filling via’s with epoxy, silver – epoxy, copper-epoxy and copper is nothing new, but what are the purposes of each and what are their advantages.

Types of Via Fill:

Let’s start with the simplest of all of the above.

EPOXY filled vias. Typically used when there are no THERMAL considerations and the intended use is for the via’s in question to be filled and FLAT at assembly so there will be no issues with co-planarity or “part-rock”. Generally used for BGA type applications where the Via is dog-boned off the SMT pad.

Normally seen as a clearance for the via on the side where the BGA exists and is mounted and NO mask clearance on the opposing side. If NOT filled with some type of Epoxy or copper epoxy the Polymer mask forms a cup on the tented side that does not allow solution to move through the vias in wet process trapping solution, resulting in oxidation in the hole and all the aberrations that will cause later on down the road.

This is where Epoxy filling comes in. If the vias in question can simply be filled there is no consequence of having one side cleared and the opposing side covered as the holes themselves will have been filled, planarized (made FLAT) before final surface plate and application of mask, At which point the absence of a mask clearance for one side means nothing as the hole is already filled and flat.

Additionally sometimes we see folks using them for “PROOF of CONCEPT” for areas UNDER parts that have large solderable lands that are cleared on one side and again not the other. These smack of THERMAL type applications where heat is being transferred/dispersed from one side (the side the component is mounted on) to the other.

This is Generally where in future (Non PROTOTYPE ) runs the vias under large land patches may be filled with either SILVER-EPOXY (basically epoxy with silver impregnated into it) or Copper – EPOXY (same only with copper instead of silver) or even better from the THERMAL performance stand point, SOLID COPPER fill accomplished by plating the vias closed. Whereas this matches the CTE of the copper on the part it is NOT something offered by all fabricators.

Back in the days when Blind and Buried via jobs were more prevalent it was found that depending upon the construction dielectrics vs. the Blind or Buried hole size the pre-preg or B-stage would flow into the holes and fill them to some degree, but this was inconsistent and was dependent on GEOMETRIES that may not be best suited for other parts of the board. At some point folks started back filling these partially filled vias to have some modicum of surface planarity.

Some folks when PROTOTYPING will even specify to fill vias with mask but this can also trap solution in the holes only to outgas or crack barrels at or after ASSEMBLY.

This is where working with your local assemblers at a FAB level is indispensable. It only takes ONE failure at ASSY to typically get a customer to go to re-think the initial prototype fab. The answer may be as simple as opening up clearances on BOTH sides of the mask or REMOVING clearances from both sides.

If this does not work due to a BGA, they may choose to epoxy fill the vias in question again, making the presence or absence of a mask clearance irrelevant.

Karl Doebbert
Leadership/Volunteer Section

Special Thanks to the following volunteers !!

**Technical Advisor (Appointed)**: Viswanadham Puligandla Ph.D. (Nokia (Retired))  
**Phone**: 972-355 7107  
**Email**: viswam38@gmail.com

**Technical Advisor (Appointed)**: Riki G. Brown (LeeMAH Electronics)  
**Phone**: 951-733-2806  
**Email**: rbrown@leemah.com

**Social Media Editor (Appointed)**: Alicia Hamby (Circuitronics)  
**Phone**: 469-226-4872  
**Email**: aliciahamby@circuitronics.com

**Set Up Committee (Appointed)**: Jimmy Fallin (Philips Entertainment)  
**Phone**: 214-647-7960  
**Email**: jimmy.fallin@philips.com

**Board Liaison**: Richard Henrick (Sanmina Corporation)  
**Phone Contact**: 256-882-4579  
**Email Address**: richard.henrick@sanmina.com
REASONS TO JOIN YOUR LOCAL SMTA CHAPTER

- Do you have something to share such as new technologies or new products?
- Are you new in a sales territory – do you know all the players? Do they know you?

Be informed and involved on the Local Chapter level:

- Take advantage of technical information provided at local meetings Get to know colleagues in your local area
- Network for technical information and get to know companies and people in your local area
  - Share information with colleagues on new products and services

THE MISSION OF SMTA

The Surface Mount Technology Association (SMTA) membership is a network of professionals who build skills, share practical experience and develop solutions in electronic assembly technologies and related business operations.

MEMBERSHIP DUES

Participating: $50 - If your company (same location/division) holds a Corporate Membership it’s employees are eligible to receive the full range of benefits at a discounted price.

Individual: $75 - This membership is designed for individuals who wish to join SMTA to receive all the benefits independent of a Corporate Membership.

Corporate: $450 - A corporate membership in SMTA provides discounts to employees located in the same location/division where the Corporate Membership is held.

Student/Retiree: $20 The Student/Retiree Membership is available to all full-time post-secondary students and retirees at a discounted rate.

HOW TO JOIN

On-line at www.smta.org