ABSTRACT:

HDI Manufacturing and Design

Time – 1 hour

• Level – advanced
• Discusses the basic use of and design considerations for high density interconnects
• Provides guidance on types and constructions for HDI

including predominant industry methodologies and relative costs

• Ideal audience:
  • PCB designers, design teams
  • NPI teams

PCB High Density Interconnect Manufacturing and Design, presented by Kathy Nargi-Toth

Friday, May 5th, 2017

MEETING LOCATION

Aboca’s Italian Grill,
100 S Central Expy #63,
Richardson, TX 75080

11:00 am (doors open for networking) Lunch buffet with multiple entrees, salad and dessert.

To attend, we ask that you RSVP reply by COB May 3rd to this e-mail

GaryT@Lbraind.com

Agenda

11:00-11:30 check-in & Networking
11:30 Lunch Begins
11:45 Meeting Begins

Welcome & Introductions
Chapter Announcements
12:00 Technical Presentation by the Speaker: Donald Banks

1:00 Technical Round Table Conversation

Pricing: (CREDIT CARDS NOW ACCEPTED on Website)

$ 20 cash/check, Or charge (in advance on website) for:

Members, Guests of Members
Visitors & non-members
Bio-
Kathy Nargi-Toth
VP of Quality and Technology, NCAB Group
USA

Credentials include; BS Marketing, minor Chemistry, Lean, Six Sigma Black Belt Certified, Certified IPC-A-600 Trainer, Certified IPC-6012 Trainer

Expertise in the following disciplines; PCB Fabrication expert, NPI Project management, DOE, SPC and Six-Sigma Project formulation and analysis, IPC Standards, guidelines and procedures; active, DfM, DfA analysis, REACH, RoHS and Conflict Mineral compliance, ISO-9001 management and certification, Quality system auditing, Technical process auditing, Technical writing / editing

Kathy has worked in the industry for a number of years in job functions including Engineering Manager for a multilayer PCB manufacturer, Technical Marketing Manager for a specialty laminate and chemical supplier, Global Business Development Director for a supplier to the connector industry and Editor for Printed Circuit Design and Fab magazine. She currently heads the quality systems and engineering groups for NCAB Group, a supply chain management company with 14 offices located in Europe, Asia and USA.

Upcoming Chapter meetings

Chapter Calendar for 2017:

May 5th - 2017
HDI Manufacturing & Design

June 2nd - 2017
Stencil Printing and Design

July 11 or 13th –2017
Top Golf event

Sept 8th –2017
Advanced IC Packaging

Oct 6th -2017
TI Packaging Guru,
Steve Kummerl

Nov 3rd-2017
Geekapooaloza event!

Dec.1st 2017
member Christmas party
Presidents Message

Greetings to SMTA Dallas Chapter members and guests.

We are excited to tell you about several new activities we are doing this year that will interest you and others in your company. We are going to have a fun social event at the Dallas Top Golf in July. An evening event with fun, food, beverages. We are also hosting something called a Geek-A-Palooza in November, possibly at Lone Star Park in Grand Prairie. Finally we are hosting Process Engineering Certification, also in November. Along with our regular meetings, these activities will add another great dimension to the offerings of this technical association to help you. As I always say: Get involved….. You get more out than you put in.

Gary Tanel, Dallas Chapter President.

Dallas Chapter Membership Rolls— 116 Members !!

We welcome our newest members to the SMTA family:

Scott Stroud Henkel Electronic Materials-Participating

Corporate Members: 18
Corp Participating members: 14,
Individual Members: 55,
Global Members: 3,
Participating Members: 15,
Associate/Student Members: 9
Lifetime members: 2

Dallas Chapter Corporate Member List - April 2017

ASSET InterTech  Fujitsu Network Communications  Philips Entertainment
Barry Sales, Inc.  GSC (Garland Service Company)  Precision Technology, Inc.
BBM, Inc.  JTAG Technologies  Roper Resources, Inc.
Circuitronics  Keysight Technologies  Southwest Systems Technology Inc
Conecsus LLC  Krypton Solutions  .SPEA America
CVInc.  Lockheed Martin Missiles & Fire Control  Summit Interconnect
CR Assembly Corp  Libra Industries  Sunshine Global PCB Group
DG Marketing Corporation  Mek Americas LLC  SVTronics, Inc
Dragon Circuits  Morgan Newton Company  The IPS Group, LLC
E.T.S. Group, Inc.  National Circuit Assembly  Techni-Tool, Inc.
Electrolab Inc.  NPI Technologies, Inc.  Trilogy Circuits, Inc.
EWL Solutions  One Source Group  Variosystems, Inc.
FHP Reps  PAC Global, Inc.  VI Technology
Neural Probe Technology: Gold traces on polyimide

Designers working on research studies required a sensor with one mil trace/space and adding complexity to this request, the traces need to be gold rather than copper.

Why gold traces rather than the copper traces?

Neural probes are used in clinical settings for diagnosis of brain diseases such as seizures, epilepsy, migraines, Alzheimer’s and dementia. Biocompatibility of the neural probes to minimize the immune response is critical. Copper, nickel and chromium all adversely impact cells near the electrodes. Flexible materials, such as polyimide, are commonly used in implanted devices to match geometric and flexibility requirements. Metalizing with gold provides further compatibility versus less noble conductors such as copper or nickel.

Additive process enables both fine lines and gold metallization

Traditional PCB manufacturing utilizes a subtractive-etch process. PCB manufacturers start with a panel of copper-clad material. Traces and spaces are created with a “develop-etch-strip” process removing unwanted copper from the panel leaving the desired trace patterns.

Additive technology reverses this, beginning with bare substrate and adding copper to the panel. This circuit was created with a proprietary nano-catalytic ink enabling a simplified five-step process.

Bare substrate is prepared, vias are drilled, and ink is coated, cured and patterned with photolithographic imaging. Finally, metal is plated to this pattern. In this application, the metal is gold but could also be copper or other metals. The key to this technology lies with the catalytic ink. Precursor catalysts deposited in thin atomic layers have unique properties like so many other nano materials. Additionally, a catalyst that is deposited via a liquid or “ink” can fill in areas that would not be touched by line-of-sight methods like sputtering. This provides a basis for electroless plating that will fill vias of all types with more thorough coverage than conventional methods.

When working with gold rather than copper, a thin layer of conductive palladium is applied electrolessly followed by the gold plating. Gold is a difficult metal to etch; the palladium is easily removed without impacting the gold.

The additive process enables both lines and spaces less than 1 mil and thin metallization (< 5 micron). The ability to design features less than .001” allows new flexibility to maximize breakouts and minimize multilayer blind-via constructions. This coupled with the ability to plate pure gold without nickel, chrome, or exposed copper layers, provides a unique offering for applications that may need circuits exposed in end use.
Our Chapter Leaders

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Special Thanks to the following volunteers!!

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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 Membership—$20 The Student/Retiree Membership is available to all full-time post-secondary students and retirees.

HOW TO JOIN

On-line at www.smta.org