14 April 2015 WS4 – 1:30 A.M. – 5:00 P.M. Duration: ½ day (3.5 Hrs)
South East Asia Technical Conference on Electronics Assembly –2015

PROCESS DEVELOPMENT & YIELD ENHANCEMENT INVOLVING ADVANCED PACKAGES

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OVERVIEW

The goal of greater functional integration is impacting both SMT assembly and IC Packaging with technological challenges. SMT know-how is no longer just the privy of the board assembly shop but is being adopted in the manufacturing of organic substrate based packages such as SiPs, MCMs and other specialty modules. Implications of this adoption are obvious- both segments equally face the vital need to acquire and share concepts and know-how geared towards their environment for mutual benefit.

ABOUT THIS COURSE

This workshop provides a focused coverage of techniques, materials and processes involved in state-of-the-art SMT assembly. It provides participants knowledge on the significant interactive variables impact involving current, advanced packages and ultra-miniature components assembly. It provides an understanding of approaches and techniques to address defects, process issues and improve yields. Practical, real life, examples are used to illustrate and to augment the learning during this program.

TARGET AUDIENCE:

Target audience would include engineering personnel from Assembly, Equipment, Materials and Failure Analysis disciplines. Target industries include PCB assembly, EMS/ESPs and segments of IC packaging deploying surface mount assembly or requiring skills to address their end-user product utilization and processing issues.

TOPICS COVERED

1 – ASSEMBLY OVERVIEW

- SMT Assembly & Package Trends
- Product & Process Driving Factors
- From Mainstream to Direct Chip Attachment
- SiPs and MCMs
- Yield & Process Capability Needs

2 – PROCESS CONSIDERATIONS

- Interactive Variables
- Solder Paste Considerations
- 0201 / 01005 & Small Form Factor Devices
- The Importance of Solder Volume Calculations
- Solder Volume For Odd Form Devices – Spreadsheet Example
- Solder Volume Process Window
- Solder Paste Release
- Pad Design & Layout
- Solder Volume & Pad Designs for BGAs
- Practical Tips, Guidelines & Control

3 –ADDRESSING PROCESS ISSUES

- Solder Balling
- Tombstoning – Math & Science
    - Root Cause
    - Different Signatures
    - Impact of Solder Volume
    - Other Interactive Variables
- Bridging & Opens
- Non-Wetting
- 'Black Pad' Issues
- Solder Migration
- Voids
- Low Shear Strength Failures
- Fillet Lifting

Mukul Luthra's Bio

Mukul Luthra is the CEO of Waterfall Technologies, since its start up in 1997 in Singapore and in Canada in 2000. Amongst the previous positions he has held include Director, Seagate Technology and Marketing Director, ST Microelectronics.

He is extensively published, has presented and conducted training workshops at numerous international conferences such as the IPC/APEX, SMTA International, Nepcon, ICSR and GlobalTronics events.

Mukul graduated with a Degree in Electrical Engineering in 1974 and has 4 decades of international experience in high volume manufacturing, quality & process engineering fields in the PCBA, Disk Drive and Semiconductor industries.