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Be Part of the Solution

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Alan Albee, Teradyne, Inc.

INS3: Advances in Process Controls, From 3D Printing to 3D Inspection to Measuring Thermal Expansion Mismatch
Chair: Michael Newman, Harris Corporation
Co-Chair: Christoph Wimmer, MICROSCAN

Digital Image Correlation Using High Magnification Optical Microscopy ˙, $-
W. Carter Ralph, Cheri B. Moss and Kevin B. Connolly, Southern Research Institute

Addressing High Precision Automated Optical Inspection Challenges With Unique 3D Technology Solution ˙, %)
Todd Liberty and Tim Skunes, CyberOptics Corporation

Thermo-Mechanical Warpage and Stress Simulation for 2.5D and 3D IC Packaging ˙, &$
Akash Agrawal, Guilian Gao, Bongsub Lee, Laura Mirkarimi and Sitaram Arkalgud, Invensas Corporation

SUBSTRATES

Substrate Sessions Organized by Raiyo Aspandiar, Ph.D., Intel Corporation, Don Banks, St. Jude Medical and Srinivas Chada, Ph.D., Schlumberger

SUB1: Investigating Surface Finish Reliability and Attributes Outside of Solderability
Chair: Lenora Toscano, MacDermid, Inc.
Co-Chair: Don Banks, St. Jude Medical

Final Finish Specifications Overview IPC Plating Subcommittee 4-14 ˙, &+
George Milad, Uyemura International Corporation

Eliminating False Positive ICT Response Through the Use of Organic-Metal Final Finish '! 52
*Rita Mohanty, Ph.D., John Fudala, Sathiya Narayana, Enthone Inc.

Comparing PCB Surface Finishes and Their Assembly Process Compatibility ˙, ')
Rob Rowland, Axiom Electronics LLC; and Ray Prasad, Ray Prasad Consultancy Group

SUB2: Emerging Topics on Design and Process Technologies of Printed Circuit Boards
Chair: Raiyo Aspandiar, Ph.D., Intel Corporation
Co-Chair: Don Banks, St. Jude Medical

Development of Advanced Embedded Die Modules for Power Electronics Applications ˙, ($
*Lars Boettcher, Stefan Karaszkiewicz and Andreas Ostmann, Fraunhofer Institute for Reliability and Microintegration (IZM); Dionysios Manessis, Technical University Berlin

Direct Metallization System for Flexible Printed Circuit Board "! 69
*Rita Mohanty, Ph.D., Albert Angstenberger, Melanie Rischka and Han Verbunt, Enthone, Inc.

Via-In-Pad Plated Over (VIPPO) Design Considerations for Enterprise Server and Storage Hardware '! 76
*Matt Kelly, Mark Jeanson, Timothy Younger, Jim Bielick, Theron Lewis and Mitch Ferrill, IBM Corporation

SUB3: Surface Finish Parameters that Impact Interconnect Reliability
Chair: Srini Chada, Ph.D., Schlumberger
Co-Chair: Viswam Puligandla Ph.D., Nokia (Retired)

Influence of Surface Finishes and Solder Alloys on Solder Ball Joint Reliability , * '
Yoshinori Ejiri, Takaaki Noudou, Takehisa Sakurai, Yoshinori Arayama, Yoshiaki Tsubomatsu and Kiyoshi Hasegawa, Hitachi Chemical Co., Ltd.

Controlling Copper Roughness to Enhance Surface Finish Performance ˙, +,
*Lenora Toscano and Ernest Long, Ph.D., MacDermid

The Impact of P Content in Pd Deposit for Solder Joint Reliability and Wire Bonding Reliability of ENEPIG Deposits ˙, , ,
Tsuyoshi Maeda, Shinsuke Wada, Katsuhisa Tanabe, Yukinori Oda and Shigeo Hashimoto, C. Uyemura & Corporation Co., Ltd. Central Research Laboratory; *Donald Gudeczauskas and George Milad, UIC Technical Center

SUB4: Influence of Finishes on Printed Circuit Board (PCB) Reliability
Chair: Srini Chada, Ph.D., Schlumberger
Co-Chair: Robert Farrell, Benchmark Electronics, Inc.

Fatigue Life Estimation of Electroplated Through Hole in PWB by FEM with Thin Cu Material Properties '! ; 6
Yoshiyuki Hiroshima, Shunichi Kikuchi and Akiko Matsui, Fujitsu Advanced Technologies Limited; Yoshiharu Kariya, Ph.D., Naoyuki Yajima and Kizuku Obinata, Shibaura Institute of Technology; Hiroshi Shimizu, Hitachi Chemical Co. Ltd; Kazuhiko Nakamura, HDP User Group International, Inc.

Establishing a Ti-Cu-Pt-Au Thin Film – on – Low Temperature Co-Fired Ceramic (LTCC) Technology for High-Temperature Electronics ¨- $&
*Paul Vianco, Ph.D., J. Rejent, M. Grazier, A. Kilgo, B. McKenzie and A. Allen, Sandia National Laboratories; E. Guerrero and W. Price, Nuclear Security Complex, Honeywell Inc.

SPOTLIGHT SESSIONS

L³ 1: Come and See Where the Future is Going!
Chair: Steve Greathouse, Plexus Corp.
Co-Chair: Eddie Kobeda, Ph.D., IBM Corporation (Retired)

European Union RoHS Leaded Solder Exemption Update ˙- &%
Curtis Grosskopf, *Marie S. Cole, and Pam Lembke, IBM Systems; Jeff Lagler, IBM Transformation and Operations; Kurt Van der Herten, IBM Corporate Environmental Affairs

L³ 2: Environmental Solutions Require Diligence
Chair: Rich Henrick, Sanmina Corporation
Co-Chair: Michelle Ogihara, Seika Machinery

In House Dross Recovery- Do You Know What You Are Putting Back in Your Solder Bath? ˙- ')
Mitch Holtzer and Jason Fullerton, Alpha, an Alent plc Company

The Return of the Red Retardant ˙- (%
Dock Brown, CRE, DfR Solutions

L³ 3: Factory Automation – Optimizing to Reduce Cost and Increase Reliability and Yield
Chair: Trevor Galbraith, Global SMT & Packaging
Co-Chair: Greg Vance, Rockwell Automation

On the Smart Move: Industry 4.0 in Electronics Production ˙- (*
Günter Schindler, ASM Assembly Systems GmbH & Co. KG

Using "Manufacturing Analytics" as a Competitive Strategy ˙-) %
Farid Anani, M.S.E.E., MBA and *Jay Gorajia, B.Sc.E.E., MBA, Mentor Graphics

Reducing Labor Content as a Strategy to Improve Competitiveness - An Analysis that Addresses the Value of Designing for Automation and an Empirical Analysis That Exploits the Automation Using META Process Control ˙-) ,
Tom Borkes, The Jefferson Project and Lawrence Groves, Trans-Tec Yamaha

L^3 4: Real World SMT Production Problems, Investigations and Solutions
Chair: Chrys Shea, Shea Engineering Services
Co-Chair: Greg Wade, Indium Corporation

Key Technical Challenges and Process Improvements for an Electronics Manufacturing Service Provider ˙-*,
*Robert Farrell, Bruce Tostevin, Rick Wyman, and Paymon Adl-zarabi, Benchmark Electronics, Inc.

L^3 5: Product Life Cycle
Chair: Roy Starks, LogiSync LLC
Co-Chair: Rakesh Kumar, Ph.D., Specialty Coating Systems, Inc.

Agile Scrum Methods for Cross Functional Product Development ˙-++
Scott Gleason, Plexus Engineering Solutions

Are You Leveraging Unit Level Traceability Fully? ¨-,)
James Trego and Kirk Griffin, Trego Integrated Systems

POSTER SESSIONS

Damage Prediction in SAC305 Lead Free Electronics Subjected to Mechanical Shock After Long-Term Storage ˙--&
Pradeep Lall, Di Zhang, Auburn University; David Locker, US ARMY AMRDEC

Cyanide Free Immersion Gold Suitable for PCB Surface Finishing ˚%$$'
Jun Nable, Ph.D., Emely Abel-Tatis, Ernest Long, Ph.D., John Swanson, and Martin Bunce, MacDermid Inc.