Past Chairs Night

When . . . . . Wednesday, February 16, 2011
Where . . . . . Copper Wok, Hicksville, NY
Topic: Wire Bonding
Speaker: Lee Levine, Process Solutions Consulting, Inc.

Social Hour … 6 pm      Dinner … 7:00 pm      Meeting … 8:00 pm
Members …$22    Guests …$25    ASM 25 years …$20    Students …$12
(New and recently transferred-in members free)
Reservations appreciated - call Peter Indrigo (631-589-6666)

DIRECTIONS TO THE COPPER WOK (formerly Imperial Wok) RESTAURANT

From the Long Island Expressway - take Exit 41 and go south on Route 106/107 (N. Broadway). After about 1.5 miles, stay to the left to keep on Route 107 (Route 106 forks off to the right at this point). Cross John St. and Barclay St., pass under the railroad, and after about 0.1 mile, make a right onto W. Marie Street. The restaurant will be on your right, at 1615 West Marie Street, about 100 feet after the turn. The telephone number at the restaurant is (516) 681-1947.

From the Northern State Parkway – instructions similar to those above, except that you should take Exit 35.
The Topic

In 2008 more than 10 trillion semiconductor interconnects were produced. Of this quantity, more than 90% were wire bonds. Wire bonding is a high speed, ultrasonic welding process. In the most commonly used process, ball bonding, fine diameter (average diameter is now < 25µm) gold or copper wire is welded to a thin (1µm) Al-1%Si-0.5%Cu bond pad on the semiconductor device. Typical bond pads are now < 75µm square and devices like graphic processors may have more than 1000 on a single device. State-of-the-art bonders operate at rates > 16 wires/second (32 welds with high speed motions between the two welds that define the ends of each wire). Placement accuracy for each weld must be better than ±2.5µm. Even though bonding wire is a small fraction of the diameter of a hair (a hair is approximately 100µm), it is a welding process and must be understood from a metallurgical perspective.

Our Speaker

Lee Levine is a consultant for Process Solutions Consulting, Inc. where he provides process engineering consultation, SEM/EDS failure analysis, and wire bonding training. Lee received his BS degree in Metallurgy and Materials Science Engineering from Lehigh University, Bethlehem, Pa in 1972. His subsequent experience includes 20 years as Principal and Staff Metallurgical Process Engineer at Kulicke & Soffa, and Distinguished Member of the Technical Staff at Agere Systems. He has been awarded 4 patents, has published more than 50 technical papers, and in 1999 won the John A. Wagnon Technical Achievement award from the International Microelectronics and Packaging Society (IMAPs). Major innovations include copper ball bonding, loop shapes for thin, small outline packages (TSOP and TSSOP, and CSPs) and introduction of DOE and statistical techniques for understanding semiconductor assembly processes. He is an IMAPs Fellow and a senior member of IEEE. Process Solutions Consulting, Inc is a sustaining member of the Lehigh Valley Chapter of ASM.
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**WELCOME TO THE CHAPTER**

Roseann Csencsits, LBL
Thomas Hales, Sulzer Metco
Anthony Herbert, Sulzer Metco
Robert Houser, Wah Chang
Sridhar Madishetty, Sulzer Metco
Patricia Monette, General Dynamics
Jake Ranneklev, Lindenhurst
Ross Soltanian, Microvention Terumo
Bonny Thompson, Standard Microsystems Corp.
Alfredo Valarezo, SBU

Thomas Glynn, Sulzer Metco
John Hammond, NASA
Ghazal Hirniiz – Univ. of Baghdad
Kenneth Lawrence, Breanco Inc.
Wade Marshall, Baker Hughes Inc.
MSN Raju, Global Weld Coat Engineers
Rick Smith, Goodrich Universal
Alison Sutherland, James Bennett Pty. Ltd.
Julio Trujillo, WHPR
Mae Wang, Sulzer Metco

All new members, including those who have transferred in from another Chapter, are invited to dine free at a regular meeting of their choice. Please take us up on this offer - come along to the meeting and introduce yourself. This is an excellent way to meet with other Chapter members and to establish new business and social relationships in the area.
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**Long Island Chapter Meeting Schedule**

<table>
<thead>
<tr>
<th>Date</th>
<th>Place</th>
<th>Speaker(s)</th>
<th>Topic</th>
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</thead>
<tbody>
<tr>
<td>Mar. 16, 2011</td>
<td>Mauricio’s, St. James</td>
<td>Jason Trelewicz, Mesoscibe</td>
<td>Thermal Spray Materials</td>
</tr>
<tr>
<td>Apr. 22, 2011</td>
<td>Stony Brook University</td>
<td>tba (students)</td>
<td>Review Senior Students Designs and Results</td>
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**Metro NY-NJ Chapter**

(website [http://www.asm.nynj.org/](http://www.asm.nynj.org/))

(contact: Rich Lynch @ 201-891-8399)

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<tr>
<th>Date</th>
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<tr>
<td>Mar. 24, 2011</td>
<td>IBM Watson Research Center, Yorktown Heights, NY Speaker: Terence Kane, IBM</td>
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**Long Island Metal Workers Society**

(website [http://www.limws.org](http://www.limws.org))

(contact: Jamie Swan @ 631-754-1457)

Feb. ??, 2011 Tour (tba)

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**2010-2011 CHAPTER OFFICERS**

<table>
<thead>
<tr>
<th>Position</th>
<th>Name</th>
<th>Phone</th>
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<tbody>
<tr>
<td>Chairman (2011)</td>
<td>Jim Quinn</td>
<td>(631) 632-6663</td>
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<td>Stony Brook University</td>
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<td>Vice Chairman (2011)</td>
<td>Ken Trelewicz</td>
<td>(631) 244-6238</td>
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<td>Dayton T. Brown Inc</td>
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<td>Secretary (2011)</td>
<td>Gary Elgort</td>
<td>(212) 894-9504</td>
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<td>Consolidated Edison</td>
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<td>Treasurer (2012)</td>
<td>Peter Indrigo</td>
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<td></td>
<td>Unitron Ltd.</td>
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**Executive Committee Members**

<table>
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<tr>
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<tbody>
<tr>
<td>Alex Chi (2013)</td>
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<td>Demeton Technologies</td>
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<td>John Coyle (2012)</td>
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<td>Carl Czajkowski (2011)</td>
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<td>Brookhaven National Laboratory</td>
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<td>Atul Gokhale (2013)</td>
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<td>Rao Tipirneni (2011)</td>
<td>(631) 643-6792</td>
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<td>Long Island Testing Laboratories Inc.</td>
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<tr>
<td>James Waldvogel (2013)</td>
<td>(516) 564-7839</td>
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<td>Waldvogel Metallurgical Inc.</td>
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<td>Al Wirth (2012)</td>
<td>(516) 333-7429</td>
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**ADVISORY**

Biays Bowerman (2011) - (631) 344-2946
Brookhaven National Laboratory

**EMERITUS**

Richard Richards (Retired) - (631) 567-6163
Clifford Shaver (Retired) - (631) 586-1842