ing, characterization and validation.

The *IEEE Transactions on Components and Packaging Technologies Best Paper Award* honors the most outstanding paper published in 2005. This year's winning paper, "Increasing the Accuracy of Structure Function Based Thermal Material Parameter Measurements" was published in the March 2005 issue. **Márta Rencz** accepted the award from **Paul Wesling**, CPMT's Vice President of Publications. The paper was authored by **Márta Rencz** and **András Poppe** (both with MicReD, Ltd., Budapest, Hungary) as well as **Ernõ Kollár**, **Sándor Ress** and **Valdimir Székely** (all with the Department of Electron Devices, Budapest University of Technology and Economics, Budapest, Hungary).

Student chapters offer a sense of professional community at the university level. One student chapter put in many hours to coordinate campus meetings and activities that allow students to enhance their knowledge and hone their leadership skills.

The *Student Chapter of the Year Award* went to the **Chalmers University of Technology** (Gothenburg, Sweden). Chapter advisor **Johan Liu** and chapter treasurer, **Dimitar Kolev**, accepted the award. Additional chapter officers include **Yue Qu**, President, **Mohammad Kamruzzaman Chowdhury**, Interim President, **Mohammad Najmzadeh**, Vice Chairman and **Björn Carlberg**, Secretary.

Finally, the Society took this opportunity to honor its 2005 IEEE Fellows who were in attendance at ECTC. **Ralph Wyndrum** presented certificates to:

- **William T. Chen** (ASE Group, USA) for contributions to packaging and assembly technology.
- **Paul Franzon** (North Carolina University, USA) for contributions to chip-package codesign.
- **Johan Liu** (Chalmers University of Technology, Sweden) for contributions to environmentally compatible electronic materials and processes.
- **Gary May** (Georgia Institute of Technology) for contributions to semiconductor manufacturing and engineering education.
- **Michael McShane** (Freescale Semiconductor, Inc., USA) for contributions to the advancement of semiconductor packaging.
- **Qi-jun Zhang** (Carleton University, Canada) for contributions to linear and nonlinear microwave modeling and circuit optimization.

If you know a colleague who deserves recognition, please visit www.cpmt.org/awards for more information and awards criteria.

CALL FOR CANDIDATES

The CPMT Society is governed by a Board of Governors composed of officers, 18 elected members-at-large, and various committee chairs and representatives (see inside cover of this Newsletter for details.) Annually, Society members are asked to elect six members-at-large for a three-year term of office. Candidates for member-at-large are selected in two ways -- either by the Society Nominating Committee, or by petition. This year's election is the second in which members-at-large will be elected to achieve totals proportionate to the geographic distribution of CPMT members. This translates as follows:

Regions 1-6, 7 and 9 (US, Canada, South and Central America): elect 3 (for total of 12)
Region 8 (Europe, Africa, Middle East): elect 1 (for total of 3)
Region 10 (Asia/Pacific): elect 2 (for total of 3)

Voting members will elect members-at-large from within their Region only (that is, members in Region 8 will vote for members-at-large from Region 8, etc.)

If you are an IEEE and CPMT Society member in good standing and are interested in serving on the Board of Governors, you can become a candidate via petition by following the procedures below. Members of the Board of Governors must be willing to attend two annual Board meetings and participate actively in areas of their interest (publications, conferences, membership development, chapter development, etc.) The term of office for this election is 1 January 2007 through 31 December 2009.

- Prepare a petition that contains your name, member number, and statement of your qualifications for office.
- Provide lines for signatories. Each line should include space for a printed name, member number, and signature.
- Have the petition signed by a MINIMUM of 25 CPMT Society members in good standing (Student grade members are not eligible to sign.)

Membership status of all signatories will be validated. It is suggested that you gather more than 25 signatures in order to assure

meeting the minimum required number of valid signatures.Submit your petition by no later than Friday, 21 July 2006
to:

CPMT Society Nominations Committee
c/o Marsha Tickman
IEEE CPMT Society Executive Office
445 Hoes Lane, PO Box 1331
Piscataway, NJ 08855-1331 USA
or FAX to 732-981-1769.

If you have questions or need additional information, contact Marsha Tickman at the above address, by phone at 732-562-5529, or by e-mail at m.tickman@ieee.org.

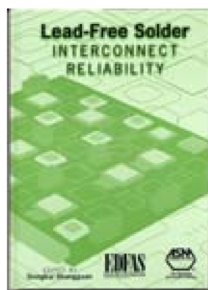
Book Reviews

The Summer the World went Lead-Free

We are reviewing two comprehensive books that are references to the large scale conversion of our industry from its 63% Sn 37% Pb roots to more legislative acceptable alternative solders. This transformation first surfaced in the late 70s in Europe and studies have slowly convinced engineers company-by-company that change is possible without dropping the high performance of their products. There are only a few blessed materials in electronics: crystal silicon, copper wire, and eutectic Sn/Pb. There is one less now.

I suspect that only old engineers remember the magic at their father's or teacher's workbench in discovering a hot iron with the smell of rosin could take a stick of metal and induce smooth silver flow onto copper wire. Frank Howland of AT&T was fond of lamenting that at first we only asked solder to protect our twisted wire from the ravages of gas diffusion caused corrosion but now we ask it to often solely perform mechanical, thermal, and electrical functions. "Never has so much been asked of so little." Although these books can not provide the same eye-opening solder magic to a new generation of "electronikers", they do reassure the experienced engineer that there is lots of support in their continual struggle to produce high quality assemblies. We applaud all the writers for their major effort in supporting this transformation.

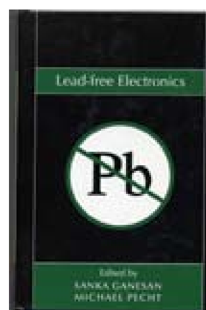
This switch in baseline solder is massive for each individual company as well as for our industry. The characteristics of which solder is used effect the components, the mother boards, the flame retardants acceptable in encapsulates, and every detail of the manufacturing processes. These books provide the common wisdom but also alert the engineer of the danger signs to look for even when keeping on the safe path.



Lead-Free Solder: Interconnect Reliability -- Dongkai Shangguan, editor. ASM International 292 pages, $195 (US).

As editor, Dongkai Shangguan provides an introductory perspective and a summary of points for continued concentration. This book is excellent for a researcher trying to decide who/what has been done in the area and what still needs to be attacked. This book does not directly address aiding a production engineer to switch over a process line. However, the owner of a line in trouble would find plenty of aid in root cause determination in this book. This book is also excellent for a weekend study by a manager not on the production floor but faced with helping decide the transformation of production.

Highlights include the clear pictures and graphs on fatigue and creep by P. Vianco. The clear comparisons between lead and lead-free in joint reliability by J. Clech which discusses the practical considerations of assemblies with both solders. A good discussion on flux residue and its often 5 dB effect on pagers and cellular phone assemblies is included in a chapter by L. Turbini. A good tutorial on accelerated testing (and shortcomings) is cast by G. Grossmann toward Pb-free assemblies. R. Ghaffarian gives great aid to the beleaguered failure analysis engineers pitted against the new solders.



Lead-Free Electronics -- Sanka Ganesan and Michael Pecht, editors. Wiley-IEEE, 766 pages, $100 (US), 2006 edition.

This book is excellent for the manufacturing practitioner and their MBA support. At first the size of the book evokes fear of a CALCE shovel job but, in fact, the pages are needed for the extensive review of the many alloy options and the many reliability studies. There is a slight legacy of the original edition in that all possibilities are still discussed with only moderate emphasis on the alloy path currently being taken by most of industry. This may prove the best long range approach to presenting the material since only one major long term failure mode will have many in industry and academia scurrying to back-up alloys.

Highlights include the extensive alloy review by Y. Fukuda and S. Ganesan; the in-depth treatment of surface mount process options for both reflow and wave soldering by S. Rao, J. Bath, and H. Ladhar; a complete review of reliability research by S. Ganesan; a great tutorial on Separable contacts and connectors by J. Wu and M. Pecht (Sn-Ag-Cu is worse at aging but more resistant to fretting); the tangled IP web we have woven by P. Casey and M. Pecht; and the Guidelines for production change presented as answers to frequently asked questions by V. Eveloy and a gang of co-authors.

For the low price, everyone with electronics assembly responsibilities should have access to this book.

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Workshop Reports

EMAP 2005

Mami Yamashita, Secretary

Dear Participants of EMAP 2005,

Thank you for joining the Conference once again. I have uploaded some of the pictures taken during the conference and the tour. Please take a look at the album and if you have any additions, please feel free to send me. I will be happy to work with them.

www.sms.titech.ac.jp/emap2005/album/album.html