Download the full Newsletter: www.cpmt.org/newsletter

ogy. HDI-type technology adapted from mobile phones perhaps. The PoP, packaging on package, approach will be used where a memory stack is placed on top of a wire-bonded large die.

Petri Savolainen

Next Petri Savolainen representing Nokia in Finland presented "Packaging for Mobility, Intelligence & Style." He suggested something that the engineering audience had trouble accepting, namely that consumers often decide on which cell phone to buy based on "style" and not necessarily the best functionality.

He pointed out that the phone is becoming a computer to get e-mail and is taking on other functions such as photography. These increased abilities are often the goal now that the size race is no longer the main decider. Even though the size/weight is no longer the sole metric, "you can never be too thin."

Advanced Packaging is still the key to each generation of mobile phones. The quest for more phone intelligence is resulting in die stacking, package-on-package, and package embedded ICs. Tomorrows phones will need faster ICs which do not need larger batteries. The phone is the internet link most of the time for more people.

Given all this exciting component and packaging challenge, Savolainen reminded the audience that success in this arena without having your product make a fashion statement and passing the "looks cool" test would result in a business failure.

Herbert Reichl

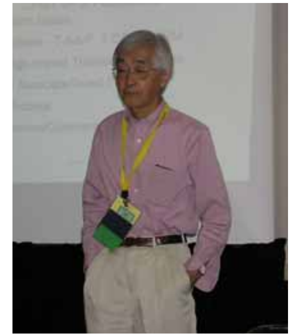
Prof. Herbert Reichl of IZM Germany presented a "Research vision for More Moore and More". He discussed the European Technology Platform work labeled "Nano-electonics" but indicated that the whole advance electronics effort would be better called "heterogeneous Integration". By this Reichl meant the expansion of the system packaging to include batteries, antenna, and sensors. It would be a smart system with some components made "package-sized" by the use of nano-materials: advanced cooling, low-temperature interconnect, and self positioning.

Reichl showed the "old" digital IC as only a part of the system with wireless, power supply and sensors also being integrated on the chip. He saw more of the historic "packaging" taking place at the wafer level further blurring the "back-end" from the assembly. He agreed that thinner was a continuing theme.

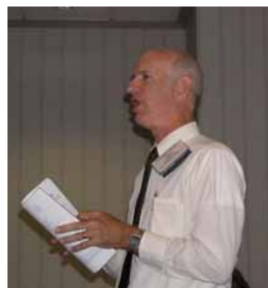
On the module level he saw polymer build-up technology with embedded passives not unlike the BCB-Cu technology that was popular a decade ago before the tech crash. He also saw the packaging build the battery layer by layer as the rest of the package was fabricated.

CPMT Publication Quality Strategy Meeting:

Early Friday morning at 57th ECTC 2007 meeting in Reno, Nevada, a CPMT Publication Quality Strategy meeting was led by Avram Bar-Cohen and Paul Wesling to improve Publications quality.

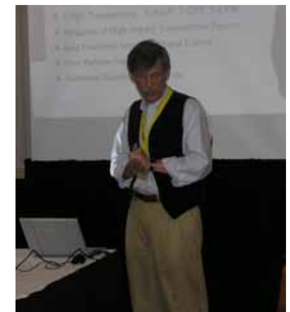


President William Chen set the tone for the 15 attendees stating: (1) we have improved the official impact metric of our Transactions over the last few years but they can become greater for all members benefit, (2) today's article cycle time can be slow and articles have been lost, (3) a lot of the quality of CPMT to our profession comes from our quality publications, and (4) as activities continue to move to Asia we must strive for more Asian reviewers, editors, and readers. "We are never too proud to improve."



Paul Wesling added that our publications serve a large community (80,000) in addition to our society members (3000). However, since IEEE Xplore Internet access to articles is virtually universal, we must optimize our quality for our much more transparent community.

Avi Bar-Cohen enumerated and facilitated discussion on the publication challenges. Since packaging science and engineering are intertwined, our Society must be a home for both the practitioners and the academicians. Often practitioners want immediacy and novelty in publications whereas professors are driven by citations and journal "impact factor". We must benefit both, since publications are key to the CPMT "value proposition."



IEEE Transactions expectations are (1) half of manuscripts finish first reviews in 3 months, and (2) No manuscripts are laggard for more than 12 months.

Our Transactions were born more than 60 years ago. Two reformulations in 1994 and 1999 resulted in our 3 current transactions:

- Components and Packaging Technologies
- Advanced Packaging (partnering with LEOS)
- Electronics Package Manufacturing

Each year 400 manuscripts are submitted and about 300 are published taking about 2100 pages to 5000 subscriptions. In addition, articles are called up by subject searches using Xplore.

A journal's "impact" is determined by the number of times its articles are referenced within two years after publication. Clearly the impact goes up if results are published quickly so others in the field have your current work, if other authors to our Transactions are aware of previous similar articles in the same Transactions (90% of references to our Transactions are in other journals), and if our articles are filed by the best descriptive titles and key words so they are found in computer searches.

Attributes of a High Impact paper:

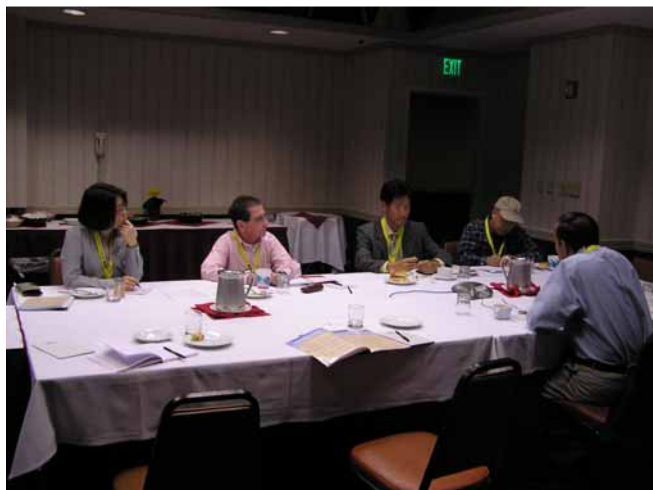
- Original contribution of data, understanding, techniques, or process
- Furthers state-of-art
- Removes barriers for implementation
- Previously unpublished work
- Sufficiently detailed so the work can be repeated
- Clearly identifies prior art and how this work builds on that
- Written in proper English
- Right words in title and key word section so it can be found
- Clearly implemented so review process will go quickly

The path of the manuscript takes about 6 months from submittal to the mailed out Transactions. Quick response by the editors and authors can cut a bit of time from this but this remains the goal because typically busy schedules add some time to the process. To increase the value of the Transactions our Society will add an IEEE staff person to bird-dog the manuscripts. Editors will help authors with higher impact titles, references, and key words. Many of our best written communication remain in the "non-archival" conference Proceedings which does not have the reach and completeness of the reviewed/edited Transactions. It is hoped that these quality improvements will entice more conference presenters to do the extra work to help the profession through a Transactions paper.

Components and RF/Wireless TC meets:

Your Technical Committee concerning RF and Wireless as well as your ECTC committee covering Advanced Components and RF met for a breakfast meeting under the leadership of Mahadevan Iyer, Georgia Tech. Ten volunteers attended and Craig Gaw contributed over the speaker phone. Attendees included: Lih-Tyng Hwang, Tim Lenihan, Nanju Na, Hideki Sasaki, Len Schaper, Eric Beyne, Amit Agrawal, J. J. Maloney, and Dave Palmer.

This group is responsible for attracting many RF and Component papers for the ECTC meeting as well as for the Transactions. The sessions chaired by this group had about 100 attendees. It was stressed at the meeting that authors must submit advanced component papers through this group and not just RF component papers. The goal is 45 papers.



Nanja Na, J.J. Maloney, Hideki Sasaki, Lih-Tyng Hwang, and Mahadevan Iyer at Components and RF / Wireless TC Meeting

A list of past authors, future possible authors, and organizational volunteers was again updated in preparation for another year of ECTC preparation and member communication. A call for papers for the next ECTC was outlined with the final being released soon by Craig Gaw and Mahadevan Iyer. Some of the topics to emphasize were integrated passives processes and yield, high performance discretes such as decoupling capacitors, and high frequency modules.

Workshop Reviews:

Summary of the 10th European System Packaging Workshop Como, Italy

January 29th-31st, 2007

www.packagingworkshop.polito.it/

Submitted by Evan Davdison, IBM (Retired)

The Technical Committee on Systems Packaging had a very successful workshop in Como, Italy last January. Fifty-eight people attended. Most were from Europe with significant contingents from Asia and North America. It was a thorough program including topics on: wearable electronics, medical devices, portable equipment, 3D packaging systems, high-speed optical communications, electromagnetic simulators, microprocessor packaging, computer systems, process technologies, MEMS and market analysis. This breadth of papers was typical for a Systems Packaging workshop (the full program can be seen at the above website).

TCSP workshops focus on the need to integrate all aspects of an electronic system to create a product. Throughout its forty-year **history**, TCSP has been doing this. In this age of non-vertically integrated companies, external component vendors, contract manufacturers and outsourcing; our mission is especially important. The company that markets the final product has to create the system design, procure all the parts, build the prototype and be responsible for functionality, design integrity, design aids, component specifications, qualifications, cooling, and overall reliability. TCSP workshops are unique in the sphere of technical meetings by providing an emphasis on gluing all these total systems technology elements together at the final product level. Quite often the role of hardware integration falls to the system package designer and it is the needs of these people that TCSP meetings address.

The 10th European Workshop was chaired by Flavio Canavero (Politecnico di Torino) and Carlo Cognetti (STMicroelectronics) with help from Flavio's able assistant, Carla Giachino: the treasurer and logistics expert. Thomas Winkel (IBM Germany) and Cian Ó'Mathúna (Tyndall) were the Program Chairs. There were seven keynote presentations from the following well-known experts: Madahavan Swaminathan (Georgia Tech), Herb Reichl (Fraunhofer IZM), Len Schaper (U. of Arkansas) Carlo Cognetti (STM), Bob Guernsey (IBM USA), Christian Val (3D Plus) and Jan Vardaman (TechSearch USA). Some of these and other presentations can be seen at the workshop website.

There was a multitude of advanced work presented at this workshop. Most of it is already in products. Some of the key take-away points are:

- Thinness and low power in portable devices are new key drivers for semiconductor and packaging technologies.