

The pictures of the general sessions are not in the order of the session program. I am sorry but I was just incapable of doing that! Please look for and find yourself.

Season's greetings and best wishes for a prosperous New Year!!

With best regards,

Mami Yamashita, Secretary
EMAP 2005 Secretariat

(See the Call for Papers for EMAP'06 in Hong Kong,
December 11-14, 2006, [later in this Newsletter](#))

Chapter News

Region 10 Chapter Activity Round-up

By **Dr. P.B. Parikh**, Region 10 News Coordinator

Malaysia Chapter:

Dr. Ch Chew –Chairman of CPMT Chapter, Malaysia has reported having planned a number of Technical activities for this Chapter including IEMT 2006 which scheduled at Kuala Lumpur from 8th -10th November 2006. This event will feature 4 Distinguished Lecture Programs, 3 parallel technical sessions (paper presentation), and exhibition. A number of distinguished members of IEEE and Leading experts in the IC packaging have confirmed short courses and keynotes talks as under:

- **Bernie Siegal** - Short Course on “Thermal Test Methods for Integrated Circuits”.
- **Dr. Rolf Aschenbrenner** - Short Course on “Emerging Technology In IC Packaging”.
- **Dr. Annette Teng Cheung** - Short Course on “Wafer Dicing Technology”.
- **Dr. John H. Lau** - Short Course on “Design, Material, Process and Reliability of Pb Free Packaging and Assembly”.
- **Carlo Cognetti** – Keynote talk on “Packaging and Manufacturing Evolution”.
- **Dr. Dongkai Shangguan** - Keynote talk on “Packaging and Board Assembly Technology Trend and Impact on the Supply Chain”.
- **Charles Vath** – Keynote talk on “Interconnect Technology”.
- **Kin Gan** - Keynote talk on “Assembly Technology and Challenges”.
- **Yee Eh Horng** - Keynote talk on “Test Challenges and Trends”.

The new Committee of the Chapter has launched a special membership drive inviting membership to leading industries in IC packaging including material suppliers and government bodies. The Chapter is targeting to increase the total membership by 30 % by year end.

The Chapter also aims to provide good coverage and knowledge sharing on technological developments in all areas of electronics packaging and manufacturing technology.

The chapter has announced that one of their Chapter CPMT members, **Dr. Teck Joo Goh** has been awarded the “Outstanding Young Engineer” for 2006 for his significant con-

tributions to the growth of Malaysia IEEE CPMT Chapter and semiconductor packaging community. The CPMT Chapter was also awarded as one of the most active IEEE Malaysia Chapters during 2005 IEEE Malaysia Section dinner.

The Chapter Officers and the Committee members for 2006 have been announced as under:

Chair: **Dr. CH Chew**, ON Semiconductor

Vice Chair: **Dr. Ishak Abdul Azid**, University Science Malaysia

Treasurer: **Azhar Aripin**

Committee Members: **Dr. Chee Choong Kooi**, Intel

Wee Teck Lim, ON Semiconductor

Fuaida Harun, Infineon

Shutesh Krishnan, ON Semiconductor

L.C. Tan, Freescale

Taipei Chapter:

Prof. Lih-Shan Chen- Chairman of Taipei Chapter had reported that the Chapter will co-organize with IMAPS Taiwan Chapter for the “2006 International Symposium on Advanced Packaging and Green Packaging Technology”, as 4 day event to be held from June 28th to July 1st, 2006 at the Taipei World Trade Center, Taipei, Taiwan. More than 100 papers are likely to be presented in the Technical Sessions and a combined Ferro Technical Session. Topics will cover the latest developments on advanced packaging and green packaging technology.

Invited keynote speakers are:

- a) **Dr. C. Robert Kao** - Institute of Materials Science & Engineering, National Central University, Taiwan.
- b) **Dr. Kyung W. Paik** - Korea Advanced Institute of Science and Technology, Korea.

Besides, a short course entitled “Accelerated Testing; Ways to Understand Reliability Quickly and Accurately” will be given by **Dr. Michael Pecht** (Director of the CALCE Electronic Products and Systems Center at the University of Maryland).

China Chapter:

CPMT Shanghai, China

Dr. Wen-Yan Yin of CPMT Shanghai China has reported that the Chapter has planned an International work shop on EDAPS 2006 on December 17th and 18th with an objective to enhance the technical awareness in the area of packaging and on-chip system electrical design concepts. The event will focus on issues and challenges ahead for next generation electronic products.

The following topics are proposed to be covered-

- Computer-Aided Design Issues for SoC and SiP/SoP Modeling and Design;
- EM and Thermal Modeling for SoC and SiP/SoP, Electrical Design and Modeling, with Experimental Verification;
- Field-Circuit Interactions and Simulations;
- Interconnect Modeling, Design, and Testing for System-on-Chip (SoC Mixed Technology Modules Nanotube and Nanowire);
- Interconnects Optical Approaches to Packaging;
- On-Chip High-Power and Ultra-Wideband EMC and EMI;
- Power Delivery and Low Power Consumption;

- Package Reliability;
- System-in-Packaging (SIP) Testing Strategies and Techniques;
- RF, Microwave, Millimeter-Wave and Light Wave Circuit Packages;
- Signal Integrity;
- Specific Implementation of Thermal Management to Advanced High-Power Packages;
- Wireless Interconnects.

Delegates are requested to contact:

Prof. Jun-Fa Mao Tel: +86+ 13916314802 Email: jfmao@sjtu.edu.cn

Prof. Wen-Yan Yin Tel: +86+ 21+34201339 Email: wyyin@sjtu.edu.cn

Singapore REL/CPMT/ED Chapter by Wilson TAN, Chair:

A. Short Courses

- 21 April 2006, Failure Mechanisms and Reliability in Integrated Circuits, Dr MK Radhakrishnan, *CTO of NanoRel – Technical Consultants*

This short course attracted 29 participants, 22 from the industry and 7 from academia.

B. Workshop on Silicon-based Technologies

Jointly organized by Pall Filtration Private Limited & Microelectronics Center, School of EEE, Nanyang Technological University (NTU) and the Chapter, a workshop on “Technology of Silicon-based Nanodevices” was successfully held on 24 Feb 2006 in NTU. Pall Filtration Private Limited had financially funded the workshop. Four overseas speakers and six local speakers presented talks on topics ranging from new filtration technologies on defectivity reduction to advanced sub-30nm transistor technologies. The details of the talks are as follows:

- Effectiveness of New Filtration Technologies on Defectivity Reduction in Advanced Microlithographic Processes, Dr Barry Gotlinsky, *Pall Corp Scientific and Laboratory Services, USA*
- Sub-30 nm Transistors: Material and Device Structure Innovations for Enhanced Performance, Dr Y.C. Yeo, *National University of Singapore*
- Towards Nano Purification with Selective Ion Removal Technology in Wet Chemistry, Dr Fumitomo Kunimoto, *Nihon Pall, Japan*
- Challenges, Issues and Solutions to low-k Implementation in Future Technology Nodes, Dr Sanjeev Jain, *Applied Materials, USA*
- Reliability Issues and Challenges in Cu/low-k Interconnects, Mr Y.K. Lim, *Chartered Semiconductor Manufacturing*
- Cu-based Nano Interconnects, Dr C.M. Tan, *Nanyang Technological University*
- Three-dimensional Interconnects, Mr N. Ranganathan, *Institute of Microelectronics*

- Silicon Based 3-D Multi-layer CMOS Integrated Circuits, Dr Mansun Chan, *Hong Kong University of Science & Technology, Hong Kong*
- Negative-bias Temperature Instability of p-MOSFETs: The Role of Nitrogen, Dr D.S. Ang, *Nanyang Technological University*
- Si Technology for Nano and Bioelectronics, Dr Patrick Lo, *Institute of Microelectronics*
- Silicon Front-End Junction Formation - Physics and Advanced Technology, Dr Benjamin Colombeau, *Chartered Semiconductor Manufacturing*

The workshop attracted more than 180 participants from the industry, research institutions and universities. The Chapter plans to organize similar workshop annually.



Left to right: Dr Patrick Lo, Dr Mansun Chan, Dr K Prasad, Dr KL Pey, Dr DS Ang, Dr Sanjeev Jain, Mr N. Ranganathan, Dr Benjamin Colombeau, Mr Y.K. Lim, Dr CM Tan, Dr Barry Gotlinsky, Dr Fumitomo Kunimoto

C. Conferences

IPFA2006

Preparations are well underway for the 13th IPFA which will be held from 3 to 7 July in the Meritus Mandarin Hotel, in the heart of Singapore's central business district. The technical sessions will be:

- FEOL (gate dielectrics, NBTI, hot carriers, etc.)
- BEOL (Cu and Al interconnects, low-k and ultra-low-k, stress migration and electromigration, etc.)
- Packaging (flip chip, system-on-chip, SIP, etc.)
- Novel device architectures, design, processes, and characterization (SGOI, FinFET, nanowires, CNT, etc.)
- Advanced instrumentation or methodology for Failure Analysis
- Advances in reliability evaluation and approaches including methodology for novel new devices, design-in/build-in reliability, wafer level reliability, etc.

Of the approximately 100 hundred abstracts submitted, 44 papers have been accepted for oral presentation and 25 for the poster session. As well as the submitted papers, we have 5 invited papers and exchange papers from ISTFA and ESREF. This year we are particularly fortunate and honoured to have two keynote papers given by very prominent experts in their fields, Professor Hiroshi Iwai of Frontier Collaborative Research Center, Tokyo and Dr. Chih-Yuan Lu, Senior Vice-President of Microelectronics & Memory Solution Group, Macronix in Taiwan.

The following invited talks are scheduled for IPFA 2006:

A Review of New Characterization Methodologies of Gate Dielectric Breakdown and Negative Bias Temperature Instability - Prof. Muhammad Alam (Purdue University, USA)

The Scanning Confocal Electron Microscope: A New Tool for Defect Studies in Semiconductor Devices - Dr. Nestor J. Zaluzec (Argonne National Labs, USA)

Technology Reliability Qualification of a 65nm COMS Copper/Low-k BEOL Interconnect - Dr Fen Chen (IBM, USA)

Advanced Test Methodology/Roadmap and Strategies for Semiconductor - Dr. Burnell West (Credence, USA)

Design for Reliability - Dr. Tim Turner (Chiron Technology)

Carbon Nanotube Interconnects in Electronic and Biological Systems - Prof. Cary Yang (Santa Clara University, USA)

In a paper exchange arrangement, the best papers from ESREF 2005 and ISTFA 2005 will be presented at IPFA 2006, while the best papers in reliability and failure analysis from IPFA 2006 will be presented at the corresponding ESREF & ISTFA conferences.

In conjunction with the three day technical symposium, two days of tutorials will be held on the 3 and 4 July 2006:

- Transmission Electron Microscopy for Failure Analysis: S. Subramaniam (Freescale Semiconductor, USA)
- Atomic Force Microscopy Principles and Role in Failure Analysis: Terence Kane (IBM, USA)
- Reliability of Lead-Free Solder Joints for Semiconductor Packaging: John Lau (Agilent, USA)

- Copper Interconnect and Low-k Reliability: Eckhard Langer (AMD, USA)
- Fundamentals of Integrated Circuit Test for Physical Failure Analysis: Burnell West (Credence, USA)
- Ultra High Resolution in Scanning Electron Microscopy: Nestor Zaluzec (Argonne National Labs, USA)

The exhibition will be held in parallel with the symposium between 5 and 7 July and is expected to draw just under 30 companies.

EPTC 2006:

The 8th Electronics Packaging Technology Conference (EPTC 2006) will be held from 6th to 8th Dec 2006 at the Pan Pacific Hotel, Singapore. The 1st call for papers has been announced recently.

EPTC 2006 is an International event organized by the IEEE Reliability/CPMT/ED Singapore Chapter, sponsored by IEEE CPMT Society with technical sponsorship from IMAPS.

EPTC 2006 will feature technical sessions, short courses and exhibition. It aims to provide a good coverage of technological developments in all areas of electronic packaging from design to manufacturing and operation. It is a major forum for the exchange of knowledge and provides opportunities to network and meet leading experts in the field.

Since its inauguration in 1997, EPTC has developed into a highly reputed electronics packaging conference in Asia and is well attended by experts in all aspects related to packaging technology from all over the world.

The conference program includes full-day short courses which will be conducted by leading experts in the field. Details will be updated in the conference website and available in subsequent mailings.

A tabletop exhibition featuring suppliers of materials, equipment, components, software and service providers of the microelectronics and electronic assembly industries will be held during the conference.

The Conference topics include:

- Interconnection Technologies;
- Emerging Packaging Technologies;
- Manufacturing Technologies; Materials & Processes;
- MEMS Packaging;
- Electrical Modeling & Signal Integrity;
- Thermal Characterization & Cooling Solutions;
- Mechanical Modeling & Structural Integrity;
- Optoelectronics;
- Quality & Reliability.

D. Others

Book Prize Awards

The Chapter donated a book prize of S\$2,500 to the School of Materials Science & Engineering, Nanyang Technological University. This book prize entitled "IEEE Singapore Reliability/CPMT/ED Chapter Book Prize" is awarded to the student who has distinguished himself/herself in the Microelectronics related subjects, offered in the third and final year of the Engineering (Materials Science & Engineering) course of next 5 years, commencing in 2006.

The Chapter also donated a Subject Prize of S\$1,500 to the Temasek Polytechnic Engineering School. This award is entitled the "Subject Prize" for the student who graduates with a Diploma with Merit in the Diploma in Microelectronics course of next 5 academic years, commencing in 2006.

IPFA 20th Year:

The IPFA Board met on 21 April 2006 to discuss over the hosting of the "20th Year of IPFA" celebration since its first inception in 1987 in Singapore. A task force committee has been setup to plan for this celebration in conjunction with the 13th IPFA Conference to be held from 3 to 7 July 2006 at the Meritus Mandarin Hotel, Singapore.

Watch for the December, 2006, Newsletter Issue

- Interviews with CPMT Officers
- Reviews of new Books
- CPMT Society 2006 Award Winner Profiles

Send Your News Articles to the Editor at
nsltr-input@cpmt.org



Institute of Electrical and Electronics Engineers, Inc.
Phoenix Section
Components, Packaging and Manufacturing Technology Society Chapter
&
Waves and Devices Chapter

PRESENT AN ALL-DAY WORKSHOP ON

Convergence in Communication and Computing

Date: Friday, November 17th, 2006

Time: 7:00 A.M. – 5:00 P.M.

Location: Arizona State University, Tempe, Arizona – ASU Memorial Union (Arizona Room)

TOPICS

Vision – A View of the Future of Convergence

Market – Current Status and Future Trends

Communication Technology Options and Standards

Packaging – Mobile Products and Infrastructure

Device Technology – RF, Microwave, Analog, and Base Band / Graphic Processing

Panel discussion on the Future of Convergence in Communications

Business Model

System and Architecture

Antenna / Propagation

System Integration

Vendor Displays

For Additional Information Access <http://www.ieee.org/phoenix>

Put your Technology Leadership in Writing!

Publish in our IEEE Transactions. Figures in **full color**; worldwide access to results.
For more details:

www.cpmt.org/trans/