

**IEEE**

# 19th INTERNATIONAL SYMPOSIUM ON THE PHYSICAL AND FAILURE ANALYSIS OF INTEGRATED CIRCUITS

## 2 – 6 July 2012 MARINA BAY SANDS SINGAPORE

### SECOND CALL FOR PAPERS

The 19th International Symposium on the Physical and Failure Analysis of Integrated Circuits (IPFA 2012) is organized by the IEEE Reliability/CPMT/ED Singapore Chapter. The Symposium is technically co-sponsored by the IEEE Electron Device Society and IEEE Reliability Society. Also, IPFA will be celebrating its 25th year in 2012.

IPFA 2012 will be devoted to the fundamental understanding of the physical mechanisms of semiconductor device failures and issues related to semiconductor device reliability and yield, especially those related to advanced process technologies. The Technical Programme Committee is inviting papers related, but not limited to, the following areas:

#### SAMPLE PREPARATION, METROLOGY AND MATERIAL CHARACTERIZATION

- Sample Preparation for Analysis
- Ion Beam Sample Preparation Techniques
- FIB & TEM Related Applications
- Material Characterization for Failure Analysis

#### ADVANCED FAILURE ANALYSIS TECHNIQUES

- Advanced and Novel Techniques for Die and Package Failure Analysis
- Optical, Magnetic, X-ray, SPM Techniques
- Design for Analysis & Test

#### PRODUCT RELIABILITY EVALUATION AND APPROACHES

- Wafer-level and Design for Reliability
- Chip Package Interactions Reliability
- Built-in Reliability
- Product Reliability
- Stack Die Reliability

#### NOVEL GATE STACK/DIELECTRICS AND FEOL RELIABILITY AND FAILURE MECHANISMS

- Ultra Thin Gate Dielectrics: Reliability and Models
- Metal Gate / High-k Gate Dielectrics: Reliability, Models, and Failure Mechanisms
- Hot Carrier Reliability, NBTI

#### DIE-LEVEL/PACKAGE-LEVEL FAILURE ANALYSIS CASE STUDY, RELIABILITY AND FAILURE MECHANISMS

- Die / Package Failure Analysis Process & Sample Preparation
- Die / Packaging Related Failure Mechanisms
- ESD / EOS, CMOS Latch-up
- Flip chip, System-on-chip, SiP

#### PHOTOVOLTAICS & NOVEL DEVICE RELIABILITY AND FAILURE MECHANISMS

- Strained Si, Si/Ge and SOI/SGOI/GOI
- DRAM, FLASH and Memory Devices
- Compound Semiconductor Devices
- Power and Automotive Devices
- Solar and Photovoltaic Devices
- Polymer Electronics
- MEMS and Nano-Devices

#### ADVANCED INTERCONNECTS AND BEOL RELIABILITY AND FAILURE MECHANISMS

- Cu Electromigration / Stress Migration: Models and Failure Mechanisms
- Mechanical Stress and Adhesion Issues
- Low-k / Ultra Low-k Dielectric Reliability
- 3D interconnects

#### EXCHANGE PAPERS

In a paper exchange arrangement with ESREF and ISTFA, the Best Papers from ESREF 2011 and ISTFA 2011 will be presented at IPFA 2012, while the best oral papers in reliability and failure analysis from IPFA 2012 will be presented at the corresponding conferences.

#### BEST POSTER AWARD

A cash prize will be given to the best poster paper under the Poster Presentation mode.

#### TUTORIALS

In conjunction with the technical symposium, two days of tutorials will be conducted.

#### EXHIBITION

A 3-day exhibition of analysis equipment and services will be held concurrently with the Symposium. Please contact the IPFA Secretariat if your company is keen to participate.

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## **“ART OF FA” PHOTO CONTEST**

Do you have a memorable image during your failure analysis work or feel there is an element of “Art” in it? Join IPFA’s “Art of FA” Photo Contest 2012. For more information, please check the IPFA website: <http://www.ieee.org/ipfa> or contact the IPFA Secretariat.

### **ABSTRACT SUBMISSION GUIDELINES**

Prospective authors are requested to submit one cover page and a two-page summary (includes text and figures) of their previously unpublished and original research work.

The cover page should contain the following information:

1. Title of the work.
2. Name, affiliation, and address of each author.
3. Telephone number, fax number and e-mail address of the corresponding author
4. An abstract not exceeding 50 words.
5. The category/categories (FEOL, BEOL, Failure Analysis techniques, etc.) that you would like your submission to be considered under.
6. Presentation mode: Oral or poster presentation or no preference.

The summary section of the submission should not contain any reference to the authors or their affiliation, and should present the content of the submission according to the following sub-headings:

1. Brief introduction to the background and motivation/objectives of the work.
2. Experimental results, analysis and discussion.
3. Summary of the findings, highlighting their impact, novelty and importance.
4. Supporting figures, tables, and references.

All submissions must be in English. Please submit your abstract through the IPFA Website <http://www.ieee.org/ipfa> by **18 January 2012**. Please limit your submission file size to 2 MB. Hardcopy submissions will not be accepted. For further details please contact the Technical Program Chair.

Authors of papers that have been accepted for presentation will be notified by 14 March 2012. Upon notification of acceptance, authors will be asked to submit a final manuscript (to be submitted by 9 May 2012) such that it can be published in the Symposium Proceedings and presented at the symposium.

**IMPORTANT DATES: 18 January 2012**      **Submission of Summary and Abstract**  
**14 March 2012**                              **Notification of Paper Acceptance**  
**9 May 2012**                                      **Submission of Final Manuscript**

### **LATE BREAKING NEWS MANUSCRIPTS**

The conference also accepts important findings as late papers. Full-papers, no longer than 4 pages, should be submitted by 18 April 2012 for consideration. The acceptance of such papers is limited to break-through findings and is subject to space availability and scheduling considerations. Accepted late papers will be included in the conference proceedings and in the technical presentations at the conference.

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