IEEE

Electron Devices Society

Reliability Society

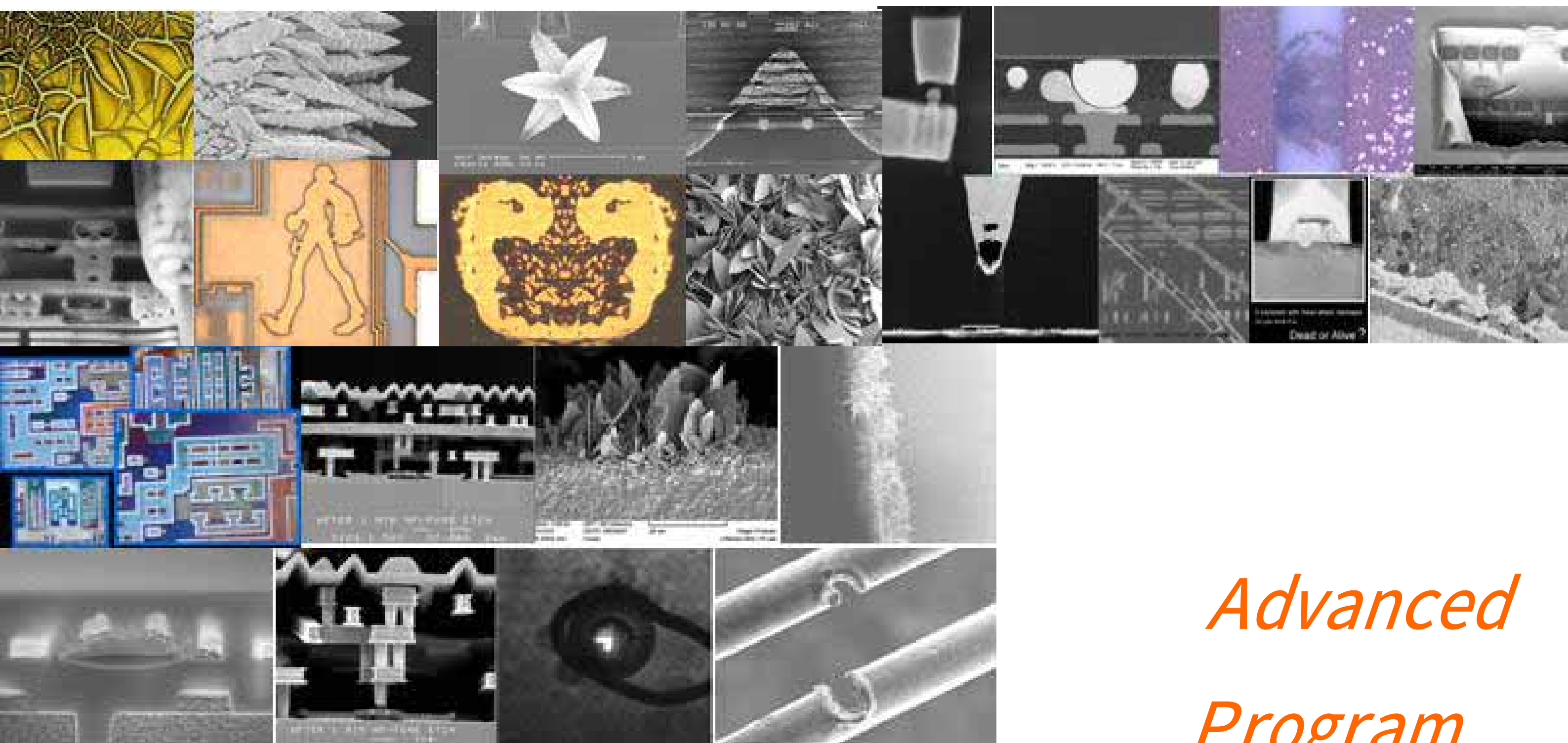
第 16 届 IEEE 国际集成电路物理与失效分析会议

IPFA 2009

2009 年 7 月 6 -10 日

中国苏州独墅湖高教区

IPFA 2009



Advanced Program

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IPFA 2009 介绍

第 16 届 IEEE 国际集成电路物理与失效分析会议（IPFA）由 IEEE Reliability/CPMT/ED 和 IEEE 南京分会主办。由 IEEE 电子器件协会和 IEEE 可靠性协会协办。IPFA 国际会议论文集可以被 EI（分类编号为 002346）检索，同时被 IEEE Xplore 数字图书馆收录。

IPFA 2009 将致力于对半导体失效分析物理机制的基本原理的理解和相关半导体器件可靠性以及成品率问题的认识，尤其是对与其相关的先进工艺过程的认识。

根据论文交换协议，ESREF 2008 和 ISTFA 2008 的最佳论文将会在 IPFA2009 上发表，同时 IPFA2009 关于失效分析和可靠性的最佳论文也会分别在 ESREF 2010 和 ISTFA 2010 会议发表。

IPFA 研讨会历史

1987-首届 IPFA 国际会议由 IEEE 失效分析分会在新加坡举办；

1989-IEEE 可靠性协会的新加坡分会，成为 IEEE 可靠性/CPMT 联合会的新加坡分会。最后自 1994 年起发展为 IEEE 可靠性协会、IEEE 组件-封装-制造技术协会以及 IEEE 电子器件协会联合会的新加坡分会；

2001- 之前，IPFA 国际会议每两年举行一次。2002 年起每年举行一次。IPFA 已经发展为全球举足轻重的可靠性与失效分析会议组织。在美国，相应的会议为 IRPS（可靠性物理国际会议）和 ISTFA（测试与失效分析国际会议）。在欧洲，相应的会议为 ESREF（欧洲电子器件可靠性与失效物理分析会议）；

2002 年- IPFA 成立了技术程序指导委员会（TPSC），目的是进一步扩大 IPFA 会议组织的国际参与度；

2003 年- IPFA 与 IEEE 器件与材料可靠性杂志（TDMR）合作，从每年的 IPFA 论文集中挑选部分论文发表在 IEEE TDMR 的特刊上；

2004 年-IPFA 第一次在新加坡以外的地点——台湾新竹举办，取得了很好的反响；

2005 年-在新加坡举行；

2006 年-在新加坡举行；

2007 年-印度邦加罗尔举行；

2008 年-在新加坡举行；

本届 IPFA 2009，将在中国苏州举行。

IPFA 展会:

除了一个近千人的培训讲座和专题研讨会之外，一个重要的项目是仪器设备展览会。1987 年展会第一次举行，在 IPFA2008 中有 40 余个展位，本届 IPFA 会议将提供近 100 个展位。

其它特点：

自举办以来二十二年间，该会议都是由一群对失效分析与可靠性感兴趣的 IEEE 专业人士与志愿者自愿组织的非营利性学术会

会议主席：宋宪忠
尚德太阳能电力有限公司
中国

技术委员会主席
林天辉
飞索半导体,中国

目录:

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3. **论文评审委员会名单**
4. **培训课程演讲者简介**
5. **特邀论文发言人简介**
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IPFA 2009 会议议程概述 2009 年 7 月 6-10 日

培训讲座议程 (2009 年 7 月 6-7 日)

	2009 年 7 月 6 日--两个课程同时进行	2009 年 7 月 7 日--两个课程同时进行
早上 8:30 开始	课题 1: 光发射与光学显微技术在集成电路失效分析中的应用 Jacob C.H.Phang 教授，新加坡国立大学	课题 5：光伏产品的可靠性与失效机理 待定
	课题 2：集成电路的静电放电及其保护电路设计 J.J. Liou 教授，中佛罗里达大学, 美国	课题 6：先进非挥发性存储器技术及其可靠性 Guoqiao Tao 博士，NXP, 荷兰
下午 13：30 开始	课题 3：失效分析概述及其挑战 Susan Li 博士，飞索半导体，美国	课题 7：光伏产品的可靠性与失效机理 待定
	课题 4: 材料科学在电子封装失效分析中的应用 Tim Fai Lam 博士，飞索半导体，中国	课题 8：栅介质可靠性：物理击穿及统计分析 Ernest Wu 博士，IBM, 美国

研讨会会议程序（2009 年 7 月 8-10 日）

2009 年 7 月 8 号	2009 年 7 月 9 号	2009 年 7 月 10 号
早晨 8:30---10:15 会议 1: 开幕典礼	早晨 8:30---10:15 会议 5: 光伏可靠性和失效机理	早晨 8:30---10:15 会议 9: 新型的堆叠栅/绝缘体和 FEOL 可靠性以及其失效机理
茶歇 10:15	茶歇 10:15	茶歇 10:15
上午 10:35---12:20 会议 2: 先进的失效分析技术 1	上午 10:35---12:20 会议 6: 芯片级和封装级失效分析案例研究以及失效机理研究	上午 10:35---12:20 会议 10: 样品制备，检测分析技术以及材料特性
午餐 12:20	中午 12:35---下午 3:10 会议 7: 午餐/ 论文海报/失效分析照片欣赏	午餐 12:20
下午 1:40---3:10 会议 3: 可靠性评价与静电放电（ESD）介绍		下午 1:40---3:10 会议 11: 先进的可靠性评估和方法
茶歇 3:10	茶歇 3:10	茶歇 3:10
下午 3:30---5:00 会议 4: 先进的互连技术和 BEOL 可靠性及其失效机理	下午 3:30---5:00 会议 8: 先进的失效分析技术 2	下午 3:30---5:00 会议 12: 新颖的器件可靠性和失效机理 闭幕典礼

会议共同主席
- Richard J. Gowen Ph.D, IEEE 协会主席
- Zhengrong Shi 博士，尚德太阳能电力有限公司 首席执行官

会议执行主席：
- Xianzhong Song，尚德太阳能电力有限公司 中国

会议执行副主席:
- Gan Chee Lip，南洋理工大学 新加坡

技术程序主席：
- Tim Fai Lam，飞索半导体 中国

技术程序副主席：
- J.M. Chin, AMD 新加坡

IPFA 董事会主席:
- John Thong，新加坡国立大学 新加坡

讲座主席:
- Mingxiang Wang，苏州大学 中国

出版主席:
- Richard Jiang

展会主席:
- Weidong Huang, AMD 中国

展会副主席:
- Shurong Dong，浙江大学 中国

财务主席:
- Wenjiang Pei; IEEE 中国南京分会

秘书:
- Luxus Liu，华碧检测

IPFA 新加坡秘书:
Jasmine Leong

秘书助理:
- Jessie Tang，华碧检测
- Mike Liu，华碧检测
- Judy Song，华碧检测
- Sunny Shen，华碧检测

IPFA 2009 论文评审委员会名单

新型的堆叠栅/绝缘体和 FEOL 可靠性以及其失效机理

Guido Groeseneken 教授，IMEC, 比利时

K.L. Pey 教授，新加坡南洋理工大学， 新加坡

Jim Stathis 博士，IBM 研发部 ，美国

C.K. Maiti 教授 ，印度理工学院 ，印度

M. Ashraf Alam 教授 ， 普渡大学，美国

D.S. Ang 教授， 新加坡南洋理工大学，新加坡

Cezhou Zhao 教授 ，西交利物浦大学，中国

Daming Huang 教授，复旦大学，中国

先进的互连技术和 BEOL 可靠性及其失效机理

Jeffrey Gambino 博士， IBM ，美国

Chinchang Liao 博士， 中芯国际，中国台湾

Gan Chee Lip 教授， 新加坡南洋理工大学， 新加坡

Ehrenfried Zschech 博士， AMD， 德国

Zsolt Tokei 博士， IMEC， 比利时

Michael Chang 博士， BASF ，新加坡

新型器件可靠性和失效机理

GuoQiao Tao 博士， 飞利浦， 荷兰

Susan Li 博士 ，飞索半导体， 美国

John Thong 教授， 新加坡国立大学， 新加坡

Chengkuo Lee 博士， IME， 新加坡

Ingrid DeWolf 博士， IMEC， 比利时

Mingxiang Wang 教授 ，苏州大学， 中国

芯片级和封装级失效分析案例研究以及失效机理研究

Jian Cai 教授， 清华， 中国

Alastair Trigg 博士， 微电子研究所， 新加坡

Young-Chang Joo 教授， 韩国首尔大学， 韩国

Howard TH Tang 博士， 联电，中国台湾

Yusihiro Fukuda 博士， OKI， 日本

Young-Bae Park 教授， 安东国立大学， 韩国

Alex Mendenilla 博士， NXP， 菲律宾

Tee Tong Yan 博士， Amkor， 新加坡

T.F. Lam 博士， 飞索半导体 ，中国

M. Natarajan 博士 ，特许半导体， 新加坡

Richard Jiang 博士 ，飞索半导体， 中国

先进的可靠性评估和方法

M.K. Radhakrishnan 博士，NanoRel， 印度

Yeow Kheng Lim 博士， 特许半导体，新加坡

Tony Oates 博士， 台积电， 中国台湾

Prasad Chaparala 博士， NS， 美国

Qian Wang 博士， 三星， 中国

Weidong Huang 博士， AMD， 中国

Sim Kian Sin 博士， 英特尔， 马来西亚

先进失效分析技术

Christian Boit 教授， Tech Univ. Berlin， 德国

J.M. Chin， AMD， 新加坡

Ludwig Balk 教授， Univ. Wuppertal, 德国

Phillippe Perdu 博士 ，CNES， 法国

Alan Street， Qualcomm， 美国

Mike Bruce 博士， AMD，美国

Hugo Bender 博士， IMEC， 比利时

Vinod Narang， AMD，新加坡

Eddie Er, Chartered Semiconductor Manufacturing, 新加坡

Lim Soon，硅系统制造公司，新加坡

样品制备，检测分析技术以及材料特性

Tung Chih Hang， 台积电， 中国台湾

Alan Craven 教授， Glasgow Univ., 英国

Sam Subramanian 博士，飞思卡尔半导体， 美国

Hans Juergen Engelmann 博士， AMD， 美国

Leijun Tang， 微电子研究所， 新加坡

Y.F. Hsieh 博士， MA Tech，中国台湾

David Su 博士， 台积电， 中国台湾

Luxus Liu， 华碧检测， 中国

光伏可靠性和失效机理

Yongqian Wang 博士，Suntech，中国

课题 1：光发射与光学显微技术在集成电路失效分析中的应用

Jacob C.H. Phang 教授，新加坡国立大学

演讲者简介：

Jacob C.H. Phang received both his BA and PhD degrees from the University of Cambridge in 1975 and 1979 respectively. He joined the National University of Singapore (NUS) in 1979 where he is now Professor at the Centre for Integrated Circuit Failure Analysis and Reliability (CICFAR). His field of research is in integrated circuit failure analysis and reliability. He is also Executive Chairman of SEMICAPS Corporation, an NUS spin-off company he co-founded in 1988 to commercialize the technologies developed at CICFAR for world-wide distribution.

课题 2：集成电路的静电放电及其保护电路设计

J.J. Liou 教授，中佛罗里达大学，美国

演讲者简介：

Juin J. Liou received the B.S. (honors), M.S., and Ph.D. degrees in electrical engineering from the University of Florida, Gainesville, in 1982, 1983, and 1987, respectively. In 1987, he joined the Department of Electrical and Computer Engineering at the University of Central Florida, Orlando, Florida where he is now a Professor. His current research interests are nanoelectronics computer-aided design, RF device modeling and simulation, and semiconductor manufacturing and reliability.Dr. Liou has filed 3 patents, and has published 6 textbooks (another in progress), more than 210 journal papers (including 13 invited articles), and more than 160 papers (including 58 keynote or invited papers) in international and national conference proceedings. He has been awarded more than $7.0 million of research grants from federal agencies (i.e., NSF, DARPA, Navy, Air Force, NIST), state government, and industry (i.e., Semiconductor Research Corp., Intel Corp., Intersil Corp., Lucent Technologies, Alcatel Space, Conexant Systems, Texas Instruments, Lockheed Martin, Analog Devices, Fairchild Semiconductor), and has held consulting positions with research laboratories and companies in the United States, Japan, Taiwan, and Singapore. In addition, Dr. Liou serves as a technical reviewer for various journals and publishers, chair or member of the technical program committee for several international conferences, external examiner for several universities, and regional editor (in USA, Canada and South America) for the Microelectronics Reliability Journal.Dr. Liou received ten different awards on excellence in teaching and research from the University of Central Florida (UCF) and six different awards from the IEEE Electron Device Society (EDS). Among them, he was awarded the UCF Distinguished Researcher Award three times (1992, 1998, 2002), UCF Research Incentive Award two times (2000, 2005), and IEEE Joseph M. Biedenbach Outstanding Educator Award in 2004 for his exemplary teaching, research, and international collaboration. His other honors include Fellow of the IEE, Trustee Chair Professor of UCF, Cao Guang-Biao Endowed Professor of Zhejiang University, China, Consultant Professor of Huazhong University of Science and Technology, Wuhan, China, Courtesy Professor of Shanghai Jiao Tong University, Shanghai, China, IEEE EDS Distinguished Lecturer, and National Science Council Distinguished Lecturer.

Dr. Liou served as the IEEE EDS Vice-President for Regions/Chapters, IEEE EDS Treasurer, IEEE EDS Finance Committee Chair, Elected Member of IEEE EDS Administrative Committee, and Member of IEEE EDS Educational Activities Committee.

课题 3：失效分析的概述及其挑战
Susan Li 博士，飞索半导体，美国

演讲者简介：

Susan Li is the Global Device Analysis Lab manager and Sr. Member of Technical Staff at Spansion, headquartered at Sunnyvale, California.

Her main responsibility is to supervise Spansion world-wide device analysis operations and lead tool/techniques development for failure analysis at 6 DA lab sites located at Penang and Kuala Lumpur, Malaysia; Suzhou, China; Bangkok, Thailand; Aizu, Japan; and Sunnyvale, USA.

During 17 years with AMD/Spansion, she worked on multiple different products including networking, wireless, microprocessor devices and recently the Flash memory devices. Her main focus is to support design teams, product lines and manufacturing groups for analyzing customer returns, debugging new products and performing failure analysis on existing products for quality and yield improvement. Before she joined AMD in 1992, she earned a Master Degree in Materials Science and Metallurgy from Carnegie Mellon University, Pittsburgh, Pennsylvania, and a B.S.E.E. Degree in Electrical Engineering from Peking University, China. She has published 19 papers at international conferences and currently has 20 granted US patents.

Profession Affiliation:

Elected Board Member of Electronic Device Failure Analysis Society (EDFAS) for 2008 – 2012.

Elected Chair for SEMATECH IC Failure Analysis Council in 2008.

ISTFA Tutorial Committee Member and Session Chair in 2002-2008

Invited Speaker on Multiple Chip Scale Packages Tutorial at International Symposium of Testing and Failures Analysis Conference (ISTFA) from 2002 – 2008.

课题 4:
材料科学在封装失效分析中的应用
Tim Fai Lam 博士，飞索半导体, 中国

演讲者简介：

Dr. Tim Fai Lam was born in Hong Kong in 1939. He gained his B.Eng and Ph.D. from the Beijing University of Science and Technology (Formerly Beijing University of Iron and Steel Technology), majoring in metallic physics and material science. From 1964 to 1989, he worked in the Shanghai Iron and Steel Research Institute in the fields of metal and alloy research and characterization. During the 24 years there, he developed from an engineer to a deputy director of the research and test center of the institute. He joined Advanced Micro Devices Ltd (Singapore) in 1990 and has been working there as a Senior Failure Analysis Engineer, Principal Engineer, Member of Technical Staff and Senior Member of Technical Staff. His experience and knowledge in physics and material science enable him to solve a lot of key problems in IC packaging. Since 1994, his interest also included Finite Elements Analysis (FEA), one of a powerful tool in IC design and manufacturing. He built more than 700 FEA models to solve the problems raised from the AMD worldwide sites and published more than 100 internal formal reports in FEA, some of them were presented at international conferences and publications.

He has been invited to give lectures or conduct workshops in AMD –SPASION worldwide sites and universities and education organizations in USA, Singapore, Thailand, Philippine and China, etc on the following topic:

1. “Material science and failure analysis in IC manufacturing” ,
2. “FEA Principals and its application in IC-Packaging” and
3. “SEM and EDX principals and applications”

He retired from AMD (Singapore) at the end of 2002. Now he is working at SPANSION (China) Limited, Suzhou, as a Technical Consultant.

课题 5：光伏产品的可靠性与失效机理
待定

课题 6：先进非挥发性存储器技术及其可靠性
Guoqiao Tao 博士，NXP, 荷兰

演讲者简介：

Guoqiao Tao was born in 1963 in Jiangsu, China. He graduated with a B.Sc degree in Semiconductor Physics in 1982 from Nanjing University, China.

He received M.Sc. and Ph.D. degree in Electrical Engineering in 1990 and 1994, both from Delft University of Technology, the Netherlands. He has worked on various subjects in the semiconductor field: discrete devices, bipolar ICs, surface acoustic wave devices, solar cells, and embedded non-volatile memories. He is with NXP semiconductors, and a senior principal and domain leader in the area of non-volatile memory devices and reliability. He invented the 2T-FNFN-NOR device and has published numerous papers on NVM device and reliability. He has been a TPSC member of IPFA for several years. He chaired the memory reliability sessions at IRPS 2003 through 2005. He is the TPC chair of IIRW 2008 and general chair of IIRW 2009. Dr. Tao is a senior member of the IEEE.

课题 7：光伏产品的可靠性与失效机理
待定

课题 8：栅介质可靠性：物理击穿和统计分析
Ernest Wu 博士, IBM, 美国

特邀论文 1: 建立可行的 TDDB 可靠性方法：从物理击穿到电路失效
Ernest Wu 博士， IBM, 美国

演讲者简介：

Ernest Wu is a senior technical staff member in Technology Reliability Department Semiconductor Research and Development Center (SRDC) in IBM System and Technology Group.

He received M.S. and Ph.D. degrees in physics from University of Kansas in 1986 and 1989, respectively. Dr. Wu joined the IBM Microelectronics Division in 1994 at Essex Junction, Vermont. He is responsible for technology qualification and development of dielectric reliability methodologies. Dr. Wu has served on the device dielectric committee as chair and co-chair for 2007 and 2005 International Reliability Physics Symposium (IRPS), respectively. He is a member of CMOS and Interconnect Reliability committee of International Electron Device Meeting (IEDM) for 1999 and 2000. He has authored and co-authored more than 100 technical and conference papers with several invited papers and tutorials as well as eleven IEDM papers. He has co-authored two book chapters on gate dielectric reliability. In 2004, he received IBM Outstanding Technical Achievement Award for his contribution to ultra-thin gate reliability in advanced CMOS technology. His research interests include dielectric reliability physics, device physics and reliability, and condense matter physics.

Jordi Suñé (Co-author). Graduated in Physics in 1986 and PhD. in Electronics in 1989 both from the Universitat Autònoma de Barcelona (UAB). Research fellow at IMEC (1989) and at the University of Bologna (1990,1991). Full Professor of Electronics at the UAB since 2002. He has (co)authored more than 150 papers in international journals and relevant conferences, among which 11 International Electron Device Meeting (IEDM) papers, several invited papers and five tutorials on oxide reliability at the International Reliability Physics Symposium (2001, 2004, 2005, 2008 and 2009).

He has served in the technical committees of IRPS, IEDM, INFOS, and SISC. He has received the Award of the Generalitat de Catalunya for the promotion of Research (2004) and the IBM Faculty Award (2008). Main fields of interest are gate oxide reliability and modeling and simulation of electron transport in electron devices.

特邀论文 2: 先进互连技术和 BEOL 可靠性及其失效机理

Chinchang Liao 博士，中芯国际，中国台湾

特邀论文 3: 先进铜制程的可靠性挑战

Jeffrey Gambino 博士, IBM，美国

演讲人介绍：

Dr.Gambino, IBM Microelectronics, Essex Junction, Vermont, USA，Dr. Gambino received the B.S. degree in materials science from Cornell University, Ithaca, NY, in 1979, and the PhD degree in materials science from the MIT, Cambridge, MA, in 1984.

Dr. Gambino joined IBM, Hopewell Junction, NY,in1984, where he worked on silicide processes for Bipolar and CMOS devices. In 1992, Dr.Gambino joined the DRAM development alliance at IBM's Advanced Semiconductor Technology Center, Hopewell Junction, NY. While there, he developed contact and interconnect processes for 0.25-, 0.175-, and 0.15-um DRAM products. In 1999, Dr. Gambino joined IBM's manufacturing organization in Essex Junction, VT, where he has worked on copper interconnect processes for CMOS logic technology. Dr. Gambino has published over 100 technical papers and holds over 100 patents.

Abstract:

Ensuring the reliability of Cu interconnects becomes more challenging as device dimensions shrink, because of the smaller dimensions and because the of the weaker mechanical properties of the low-k. In this report, we will focus on electro-migration and time dependent dielectric breakdown (TDDB) in Cu interconnect structures.

特邀论文 4: 非挥发性存储器中的先进浮栅技术及其可靠性

GuoQiao Tao 博士，飞利浦，荷兰

特邀论文 5: 失效分析概述及其挑战

Susan Li 博士，飞索半导体，美国

特邀论文 6: 100 纳米以下器件的内置可靠性和分析技术的挑战

M.K. Radhakrishnan 博士, NanoRel 印度

演讲人介绍：

Dr. M.K. Radhakrishnan, a scientist, academician and technical consultant in the semiconductor devices area for more than 30 years, has held senior positions in research organizations ISRO, Institute of Microelectronics Singapore, as well as in major semiconductor industries ST Microelectronics and Philips. Currently he is the Chief Technical Consultant of NanoRel, the technical consulting firm he founded which provides technical consultancy and training to semiconductor device manufacturers - wafer fabs, packaging, assembly and test.

He served as an adjunct professor at National University of Singapore (1994-2004) and an Advisor to NUS Enterprises & overseas colleges (2002-2008). He is also a visiting Professor and advisor to many institutions of higher learning. He served as a technical consultant to International Telecom Union (ITU), Geneva, various technology departments in the Governments of India and Singapore.

Dr. Radhakrishnan is an Editorial Board Member Microelectronics Reliability journal (UK) from 1997 onwards, Journal of Semiconductor Technology and Science (JSTS during 2001-2003) and Guest Editor to IEEE TDMR. He is an IEEE Distinguished Lecturer in the area of semiconductor device reliability and failure analysis from 1997 onwards. He was Technical Chairman of IEEE IPFA in 1995 and 1997 and was IPFA General Chair in 1999.

He is a TPSC member of many international conferences in the field of semiconductors and failure analysis including IEEE IRPS, ESREF, IPFA, ISTFA,, EPTC, MIEL, EOS/ESD Symposium. He was invited to give talks at various international conferences including the prestigious IEEE IEDM, IEEE VLSI Design Conference, SPIE, MRS and IMAPS symposium.

As a technical trainer he has designed, developed and taught more than 100 courses in the area of microelectronics devices (ESD, process reliability, failures analysis, etc) at various institutions / industries in Asia and Europe. His current research interests are mainly in sub-micron/nano device reliability, ESD, advanced device analysis and curriculum development. He has more than 60 research publications, many of them are invited papers in reputed journals.

He is a Fellow of IETE, Senior Member of IEEE, Member of ESD Association, USA and Member of EDFAS, USA.

Abstract:

As the device technology is progressing from nanometer level towards atomic scale, the famous comment "There is plenty of room at the bottom" by Richard Feynman 50 years ago needs to be reviewed carefully and understood in detail. This has to be viewed along with a recent comment by the device developers and manufacturers that "There is plenty of difficulty near the bottom". Why this discrepancy in observations?

The difficulty observed now is in the path for building reliable devices. The process with which the device development progresses and incorporates strength and reduces latency is through analysis, which helped the progression in last century through understanding the device Physics. Currently, the smaller dimensions and new materials and interfaces challenge the analysis. At first, it is observed in identifying the fail sites and localizing the failures. Fail site localization tools and its limits pauses problems. Further the limits of physical and chemical analysis. This talk reviews the latest trends in the fail site identification and certain challenges observed in physical analysis.

特邀论文 7: 扫描光学显微镜分辨率和灵敏度的提高在集成电路失效分析中的应用

Jacob C.H.Phang 教授，新加坡国立大学

特邀论文 8: 动态激光扩展测试

Phillippe Perdu 博士, CNES，法国

演讲人介绍:

Philippe Perdu is Senior Expert in microelectronics at CNES. He has led the VLSI Failure Analysis CNES laboratory since 1988. Prior to this, he developed electronic systems for telephone, automotive part, and military system manufacturers. He holds an Electronic Specialty MS and Ph.D. from the National Academy of Arts and Trades (1988) and the Paul Sabatier University (1994) respectively and HDR (academic research supervisor) at Bordeaux University in 2001.

In addition to his operational tasks, he has been active in the research and development of tools and methods for VLSI failure analysis. He has authored or co-authored more than 130 papers and 13 patents. He is chairman of CCT MCE, a corporate network on electronic components and MEMS, president (2005 to 2009) of ANADEF, the French FA society and board member of EDFAS (Electron Device Failure Analysis Society) and EUFANET (European Failure Analysis NETwork). He has participated in ESREF, ISTFA, IRPS, IPFA conferences as an author, committee member, session chair (ESREF, ISTFA) or steering committee member (ESREF)."

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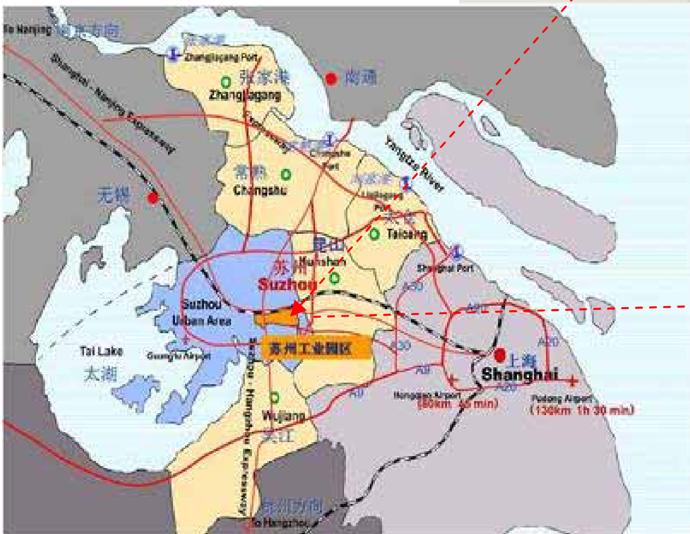

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