

# IPFA 2022

## Virtual Conference Technical Program

(3 Aug - 2 Sep, 2022, Video-on-demand available on Whova)

Plenary Session	
KN1	<b>KEYNOTE 1 : Towards CMOS/2D Hybrid Microchips</b> <i>Prof. Mario Lanza</i> King Abdullah University of Science and Technology (KAUST), Saudi Arabia
KN2	<b>KEYNOTE 2: Reliable Electronics Skins?</b> <i>Prof. Benjamin C.K. Tee</i> National University of Singapore, Singapore
ISTFA 2021 Best Paper Exchange EXC1	<b>Demystifying Unexpected Silicon Responses through User-Defined Fault Models (UDFM) and Failure Analysis</b> <i>Ms. Lesly Endrinal</i> Qualcomm Technologies Inc, USA
ESREF 2021 Best Paper Exchange EXC2	<b>Design and realization of first fuse on silicon substrate for power converter monolithic integration</b> <i>Dr. Amirouche Oumaziz</i> National Polytechnique Institute, France
MEE AWARD SL 1	<b>Microelectronics Engineering Young Investigator Award Lectureship</b> <b>Reliable memristive switching in low-dimensional materials based nanomemristors</b> <i>Prof. Fei Hui</i> Zhengzhou University, China
MEE AWARD SL 2	<b>Microelectronics Engineering Young Investigator Award Lectureship</b> <b>In-Situ Characterization of Two-Dimensional Materials and Nanodevices Reliability</b> <i>Prof. Xing Wu</i> East China Normal University (ECNU), China

Tutorial	
TUT A1	<b>Nanoscale Fault Isolation on Ultrathin Silicon – Interactions of Particle Beams and AFM Based Probing with Active Devices</b> <i>Prof. Christian Boit</i> Technical University Berlin, Germany
TUT A2	<b>An Introduction to Scan Diagnosis and its Application in Failure Analysis, Defect Localization and Yield Analysis</b> <i>Jayant Dsouza</i> Siemens EDA, USA

TUT A3	<p><b>In-Situ SEM Electrical Failure Analysis: Challenges and Workflow Optimization strategies for data acquisition and processing</b>  <u>William Courbat</u>  Imina Technology, Switzerland  <u>Grigore Moldovan</u>  Point Electronics, Germany</p>
TUT A4	<p><b>Applications of AI in FA</b>  <u>Prof. Konstantin Schekotihin</u>  Alpen-Adria University Klagenfurt, Austria</p>
TUT B1	<p><b>Failure Mechanism and root cause analysis</b>  <u>Prof. Tan Cher Ming</u>  Chang Gung University, Taiwan</p>
TUT B2	<p><b>Ferroelectric Device Reliability</b>  <u>Prof. Tian Li Wu</u>  National Yang Ming Chiao Tung University (NYCU), Taiwan</p>
TUT B3	<p><b>Thermal Management Challenges in Semiconductor Technologies</b>  <u>Prof M. Kuball</u>  University of Bristol, United Kingdom</p>
TUT B4	<p><b>Defects in Electronics: From Reliability Physics to New Applications</b>  <u>Prof. Francesco Maria Puglisi</u>  University of Modena and Reggio Emilia, Italy</p>

	<p><b>Session 01: AI for Failure Analysis and Reliability</b></p>
5B.1 INVITED	<p><b>FA4.0 - Create Prerequisites and Applications for AI-Solutions in Innovative Tools of Failure Analysis</b>  <u>Dr. Christian Hollerith</u>  Infineon, Germany</p>
31	<p><b>Inspection methodologies and machine-learning approaches for defectivity data in semiconductor industry for automotive applications: case study for field-failure prevention</b>  <u>Corinne Bergès</u>, <u>Jim Bird</u>, <u>Mehul D. Shroff</u>, <u>Edwin Lumanauw</u>, <u>Sreerag Raghunathan</u>, <u>Chris Smith</u>  NXN, France</p>
57	<p><b>Detection of Failure Analysis Methods with Image Classification</b>  <u>Selene E. Lobnig</u>, <u>Christian Burmer</u> and <u>Konstantin Schekotihin</u>  Infineon, Germany</p>
83	<p><b>AI Detection of Body Defects and Corrosion on Leads in Electronic Components, and a study of their Occurrence</b>  <u>Eyal Weiss</u>  Cyborg, Israel</p>
86	<p><b>Supervised Image Retrieval and Ranking Technique for Lock-in Thermography Images</b>  <u>Rui Zhen Tan</u>, <u>Neelakantam Venkatarayalu</u>, <u>Indriyati Atmosukarto</u>, <u>A. B. Premkumar</u>, <u>Tict Eng Teh</u>, <u>Kyu Kyu Thinn</u> and <u>Ming Xue</u>  Singapore Institute of Technology, Singapore</p>
108	<p><b>Automated defect classification in Semiconductor devices using Deep Learning Networks</b>  <u>Arya Sukumaran Nair</u>, <u>Peter Hoffrogge</u>, <u>Dr. Peter Czurratis</u>, <u>Dr. Elfgard Kuehnicke</u> and <u>Mario Wolf</u>  PVA Tepla Analytical Systems GmbH, Germany</p>

113	<b>Semantic-Masked Intensity Augmentation for Deep Learning-based Analysis of FPGA Images</b> <i>Deruo Cheng, Yee-Yang Tee, Jingsi Song, Yiqiong Shi, Tong Lin and Bah-Hwee Gwee</i> Nanyang Technological University, Singapore
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<h2>Session 02: Sample preparation, Metrology and Defect Characterization</h2>
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<b>INVITED ID - 121</b>	<b>The IC Ultra Thin Back Surface: Real Nanoscale Fault Isolation and a Completely Different Approach of Sample Preparation</b> <i>Prof C. Boit</i> Technical University Berlin, Germany
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<b>INVITED</b>	<b>Plasma Focused Ion Beam for Hardware Analysis: Sample Preparation</b> <i>Dr. Liu Qing</i> Nanyang Technological University, Singapore
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30	<b>Cs+ Reactive Sputter Depth Profile for Ultrathin Metal/Metal-Oxide Composite Film Stack</b> <i>Han Wei Teo, Yun Wang, Kian Kok Ong, Ramesh Rao Nistala and Zhi Qiang Mo</i> Globalfoundries, Singapore
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34	<b>Characterization of Oxide Layers on AlGaIn Based DUV LEDs by TEM/STEM Analysis</b> <i>Jong-shing Bow, Jay Wang, Wei-Chih Lai, Tien yu Wang, Syuan-Yu Sie, Sheng-Po Chang, Jinn-Kong Sheu and Cheng Huang Kuo</i> Integrated Service Technology, Taiwan
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47	<b>Studies of Passivation (Si3N4SiO2) Qualification Method in Wafer Fabrication</b> <i>Younan Hua, Jinzhi Lois Liao, Binhai Liu, Lei Zhu, Xiaomin Li</i> Wintech-Nanotechnology, Singapore
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53	<b>Reduction of FIB induced damage in silicon with Argon sputter clean</b> <i>Kim Hong Yip, Poh Chuan Ang, Kwai Fun Lee, Yong Kiow Yeo and Zhi Qiang Mo</i> Globalfoundries, Singapore
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63	<b>A novel method combining laser ablation and chemical etch to expose packaged silicon backside for electrical fault isolation</b> <i>Siong Luong Ting, Pik Kee Tan, Seungje Moon, Jerome Cuevas Alag, Yanlin Pan, Hnin Hnin Win Thoungh, Tin Tin Yu, Kevin Kang, A.C.T. Quah and Changqing Chen</i> Globalfoundries, Singapore
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94	<b>A Correlative Analysis Flow for Electrical and Structural Characterization of IGZO Transistors</b> <i>Lorenzo Magnarin, Marta Agati, Attilio Belmonte, Subhali Subhechha, Nouredine Rassoul, Chris Drijbooms, Harold Dekkers and Umberto Celano</i> IMEC, Belgium
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<h2>Session 03: Die Level Diagnostic, Electrical Fault Isolation and Defect Localization</h2>
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<b>INVITED ID - 123</b>	<b>Chain Diagnosis as a Tool for Yield Ramp in Advanced Process Nodes</b> <i>Jayant Dsouza</i> Siemens EDA, USA
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45	<b>EBIC Application in Finding Particle Defects</b> <i>Lai-Seng Yeoh, Kok-Cheng Chong, Susan Li</i> Infineon, Malaysia
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54	<p align="center"><b>LADA methodologies to localize embedded memory failure</b>  <i>Boonlian Yeoh, Man Hon Thor, Lee Xiang Gan, Yin Hong Chan and Szu Huat Goh</i>  Globalfoundries, Singapore</p>
61	<p align="center"><b>Combining Enhanced Diagnostic-Driven Analysis Scheme and Static Near Infrared Photon Emission Microscopy for Effective Scan Failure Debug</b>  <i>Seungje Moon, Dayanand Nagalingam, Ngow Yee Ta and A.C.T. Quah</i>  Globalfoundries, Singapore</p>
64	<p align="center"><b>Application of Cross-Section EBIC to Localize Junction Anomaly</b>  <i>Fransiscus Rivai, Siong Luong Ting, Peng Tiong NG, Angela Teo, A.C.T. Quah, Pik Kee Tan and Changqing Chen</i>  Globalfoundries, Singapore</p>
62	<p align="center"><b>Design and Manufacturing of GaAs Aspherical SILs</b>  <i>Ikuo Arata, Hirotooshi Terada, Dries Rosseel, Michael Vervaeke and Hugo Thienpont</i>  Hamamatsu Hpks, Japan</p>
65	<p align="center"><b>Enhanced EBAC Detection on Gate Oxide Breakdown Isolation after High Voltage Electron Beam Irradiation</b>  <i>Peng Tiong Ng, Fransiscus Rivai, A.C.T. Quah, Pik Kee Tan, Changqing Chen and Jerome Cuevas Alag</i>  Globalfoundries, Singapore</p>
77	<p align="center"><b>Fault Localization of Temperature-Dependent Digital Circuit Functional Failures utilizing the Scan-based Bench Testing and the Dynamic Analysis by Laser Simulation (DALS)</b>  <i>Edward Bryan Tan Pineda</i>  onsemi, Philippines</p>
81	<p align="center"><b>Uncovering the True Defect Behind an Ambiguous Distinct PEM Hotspot Through Micro-Probing and FIB Circuit Edit-PVC Analysis</b>  <i>Nino Jerome Lagatic, Jerald Sacdalan Santos and Jonelle Caralde Mananguit</i>  Analog Devices, Philippines</p>
82	<p align="center"><b>Atomic Force Probing and Focus Exposure Matrix Analysis to Resolve High Leakage Current Failure on SRAM</b>  <i>Teck Leong Wee, Sally Chwa, Fransiscus Rivai, Pik Kee Tan, Alfred C.T. Quah, Handoko Lindwih, Peng Tiong NG and Hnin Hnin Win Thoungh Ma</i>  Globalfoundries, Singapore</p>
84	<p align="center"><b>Internal Power Net Defect Localization Via Holistic Fault Isolation With FIB Edit Pico Probe</b>  <i>Kok Heng Lau, Chiun Ning Liew, Lay Lay Goh, Siew Ming Lim and Jack Yi Jie Ng</i>  Intel Microelectronics, Malaysia</p>
91	<p align="center"><b>Failure analysis on MIMCAP failures of 10nm devices using phase angle measurement method</b>  <i>Hsu Li Khoo, Lay Lay Goh, Yi Jie Ng, Kok Heng Lau, Chiun Ning Liew and Siew Ming Lim</i>  Intel Microelectronics, Malaysia</p>
95	<p align="center"><b>Effective Defect Localization for Scan ATPG Failure through Layout Aware Analysis</b>  <i>Jack Yi Jie Ng, Kok Heng Lau, Chiun Ning Liew, Lay Lay Goh, Chia Li Song and Lee Kean Yong</i>  Intel Microelectronics, Malaysia</p>
102	<p align="center"><b>Optimizing EBAC / EBIRCH analysis in 5 nm technology</b>  <i>Andreas Rummel and Greg M. Johnson</i>  Zeiss Microscopy, USA</p>

	<h2>Session 04: Transistors and NVM Reliability</h2>
INVITED	<p><b>Lifetime Extrapolation from Accelerated Life Test Data and its Challenges</b>  <i>Prof. Tan Cher Ming</i>  Chang Gung University, Taiwan</p>

19	<p><b>Case Study For STI-LDNMOS Burned During HCI Stress to Passing Reliability Specifications</b>  <i>WeiCheng Chu , Bo-An Tsai, Hiroshi Yoshida, Yi-Heng Chen and Yung-Lung Hsu</i>  Powerchips, China</p>
33	<p><b>Analysis and Modeling for Reverse Body Bias Stress Impact on HCI Induced Degradation in n-Type EDMOS</b>  <i>Miao Cai , Sern Ee Leang, Kok Wai Chew, Pee Ya Tan, Aloysius P. Herlambang, Chunxiang Zhu and Yongxin Guo</i>  Globalfoundries, Singapore</p>
42	<p><b>Chemical vapour deposited h-BN: how far are we from exfoliated quality?</b>  <i>Yue Yuan , Chao Wen, Fei Hui, Wenwen Zheng, Xu Jing and Mario Lanza</i>  King Abdullah University of Science and Technology (KAUST), Saudi Arabia</p>
44	<p><b>In situ transmission electron microscope study of reliability in molybdenum disulfide based strain sensors</b>  <i>Chen Luo , Chaolun Wang, Shuo Ma, Fang Liang, Zewei Luo, Xing Wu and Junhao Chu</i>  Eastern China Normal University, China</p>
58	<p><b>Gate oxide TDDB reliability under various stress in sub-16nm FinFET technology</b>  <i>Xiangyu Liu , Yongsheng Sun, Junlin Huang, Xiaolu Shang, Changze Liu</i>  HiSilicon, China</p>
72	<p><b>Nanoscale Conductivity Mapping: Live Imaging of Dielectric Breakdown with STEM EBIC</b>  <i>William A. Hubbard , Jared J. Lodico, Ho Leung Chan, Matthew Mecklenburg and B. C. Regan</i>  Nanoelectronics Imaging, USA</p>
74	<p><b>Photon Emission Microscopy of Amorphous HfO2 ReRAM Cells</b>  <i>Franco Stellari , Leonidas E. Ocola, Ernest Y. Wu, Takashi Ando and Peilin Song</i>  IBM, USA</p>
76	<p><b>Reliability study of hydrogel-based flexible supercapacitor</b>  <i>Yuchong Qiao , Xinyue Wu, Chaolun Wang and Xing Wu</i>  Eastern China Normal University, China</p>
118	<p><b>The effects of solid-state and hydrothermal synthesis methods of BaTiO3 on the reliability of multilayer ceramic capacitors</b>  <i>Penafei Pan , and Weiguang Zhou</i>  ZTE, China</p>
119	<p><b>Physical origin of the permanent components of the positive charge buildup resulting from NBTI/PBTI stress in nMOS/pMOS transistors</b>  <i>Felix Palumbo , Maxim Klebanov, Gerardo Monreal and Sundar Chetlur</i>  Allegromicro, Argentina</p>

	<p align="center"><b>Session 05: Physical Failure Analysis</b></p>
<p align="center">INVITED</p>	<p align="center"><b>Advanced Electron Microscopy for IC characterization</b>  <i>Prof. Michel Bosman</i>  National University of Singapore, Singapore</p>
<p align="center">INVITED</p>	<p align="center"><b>Strategies for Electrical Failure Analysis and Nanoprobing on Advanced Semiconductor Technologies</b>  <i>William Courbat</i>  Imina Technologies, Switzerland</p>
14	<p align="center"><b>TEM sample preparation for a suspended structure with deep cavity</b>  <i>Irene Tee and Jie Zhu</i>  Globalfoundries, Singapore</p>

15	<p align="center"><b>Use of energy filtered TEM to observe gate oxide breakdown defects</b>  <u>Ye Chen</u> and Jie Zhu  Globalfoundries, Singapore</p>
18	<p align="center"><b>Failure Analysis for SIP IC EOS fail</b>  <u>Bardon Cui</u> and Qiquan You  Meixin Testing Technology , China</p>
22	<p align="center"><b>Interfacial Adhesion Strength of Group IV-VI Thin Film Deposited on Silicon Nitride</b>  <u>Xintong Zhu</u> , Ramesh Rao Nistala and Zhi Qiang Mo  Globalfoundries, Singapore</p>
27	<p align="center"><b>The Application of 2nd Harmonic Laser Voltage Imaging for Timing Failure, Re-Thinning Techniques for Effective Dislocation Identification</b>  Shih Yuan Liu, Kuang Yuan Chao, Hsin Hung Chou and Wen Sheng Wu  United Microelectronics Corporation, Taiwan</p>
28	<p align="center"><b>Site-Specific 2D carrier profiling in Si devices by Scanning Spreading Resistance Microscopy (SSRM)</b>  Wei Ting Kuo, Yuan Wei Li, Chun Ming Tsai, and Dong Hong Chen  United Microelectronics Corporation, Taiwan</p>
29	<p align="center"><b>GaAs RF Amplifier Field Failure Analysis and Reliability Prediction in 5G AAU System</b>  <u>Lin Shi</u> , Chong Wang, Xiaolong Cai, Zhengya Cao, Xiaohua Ma, Xiangyang Duan  Xidian University, China</p>
48	<p align="center"><b>Characterization analysis of aluminum pad discoloration and ions contamination monitor of wafer storage environment</b>  <u>Ching-Wen Su</u> , Ray Tu, Wen-Fei Hsieh, Henry Lin, Vincent Chen, Irene Ou and YS Lou  Ardentec, Taiwan</p>
60	<p align="center"><b>Deep Dive into Systemic Secondary EOS Damage caused by a Process-Related Issue</b>  <u>Saidaliah L. Sarip</u> , John Carlo Francisco, Tejinder Gandhi, Che-Ping Chen, Jed Paolo Deligente and Jonathan Azares  Analog Devices, Philippines</p>
96	<p align="center"><b>Abbreviated tomography techniques for quick correction of slides in 3-Dimensional NAND flash architectures</b>  <u>Heebeom Lee</u> , Masahiro Ishimaru, John McPhillips, Roger L'Alvis, Timothy A Johnson, Christopher H Kang, Inchang Choi, Youngjin Cho and Kiju Choi  Thermofischer Scientific, Korean</p>
98	<p align="center"><b>Effective Backend Defect Localization by Destructive Fault Isolation</b>  <u>Siew Ming Lim</u> and Jack Yi Jie Ng  Intel, Malaysia</p>
107	<p align="center"><b>Nanoprobeing Technique using Additional Gate Biasing for Inaccessible Contact Structures</b>  <u>Wai Ming Goh</u> , Linh Viet Vu, David Zhu, Tze Ping Chua, Moi Kian Yau, Chi Eng Chow and Grace Tan  Qualcomm, Singapore</p>
115	<p align="center"><b>Novel and Simple Cross-sectional FIB Circuit Edit Techniques for Circuit Isolation</b>  <u>Pik Kee Tan</u> , Yanlin Pan, Siong Luong Ting, A.C.T. Quah, Yong Seng Tam, Angela Teo, Naiyun Xu, Hnin Hnin Win Thoungh, Kee Kuan Kang, Tin Tin Yu and Changqing Chen  Globalfoundries, Singapore</p>

**Session 06: ESD, Latchup and Space Reliability**

INVITED 124	<b>Radiation-Induced Failures for Integrated Circuits in Space and Design Philosophy</b> <u>Dr. Shu Wei</u> Zero Error Systems, Singapore
39	<b>The Failure Mechanism of the Guard-Rings in Two Different Power Domains during the Latch-Up Test</b> <u>Jian-Hsing Lee</u> , Chih-Hsuan Lin, Karuna Nidhi, Chao-Yang Chen, Yeh-Ning Jou and Ming-Dou Ker Vanguard International Semiconductor Corporation, Taiwan
89	<b>High-Voltage Electrostatic Discharge Protection Device development in 28nm BCDLite Technology</b> <u>Prantik Mahajan</u> , Vishal Ganesan, Nandha Kumar Subramani, Ruchil Jain, Souvick Mitra and Robert Gauthier Globalfoundries, Germany
92	<b>Investigation on Board-level CDM in SSD Products and Replication of Line ESD Phenomena</b> <u>Jungho Jin</u> , Youngbong Han, Byungjin Kwon, Iloh Jang, Namhyun Lee, Seungbae Lee, Yuchul Hwang, Hoosung Kim, Sangwoo Pae Samsung, Korea
117	<b>Analyze the ESD Discrepancy between Grounded-Gate and Floating-Gate Power Transistors with Gate Electric Field and Magnetic Field Induced by ESD</b> <u>Jian-Hsing Lee</u> , Karuna Nidhi, Ting-You Lin, Hsueh-Chun Liao, Scott Lee and Ming-Dou Ker Vanguard International Semiconductor Corporation, Taiwan

<h2 style="text-align: center;">Session 07: Reliability of Interconnect and BEOL</h2>	
INVITED	<b>Flexible Stretchable Conductors for Soft or Hybrid Electronics</b> <u>Prof. Lee Pooi See</u> Nanyang Technological University, Singapore
32	<b>Reliability of Power Devices with Copper Wire Bond</b> <u>Ton Pinili</u> , Manny Ramos, Ginbert Manalo, Guy Brizar, Koen Matthijs, Frederik Colle, Johan DeGreve, Petr Kocourek, Bill Cowell, John Jensen, John McGlone, Sallie Hose, Jeff Gambino onsemi, Philippines
36	<b>A Study on AlCu with ALPS Al and Glue layer on Electromigration</b> <u>Shih Hui Lin</u> Powerchips Semiconductor Manufacturing, Taiwan
38	<b>Statistical Study of Electromigration in Gold Interconnects</b> <u>Hajdin Ceric</u> , Roberto Lacerda de Orio and Siegfried Selberherr Technical University Wien, Austria
49	<b>Interconnection Reliability on FinFET Devices</b> <u>Xin Yang</u> , Yongkang Xue, Zuoyuan Dong, Chaoluo Wang, Zhigang Ji, Chihang Tsai, Yongren Wu, Weisong Yu, Runsheng Wang and Xing Wu East China Normal University, China
56	<b>Chlorine effect on copper bonding wire reliability</b> <u>Jinzhiluo Liao</u> , Bisheng Wang, Xi Zhang, Younan Hua, Xiaomin Li Wintech-Nano, Singapore
103	<b>BEOL Stack Robustness Evaluation Utilizing Cu pillar Loading and FEM Modelling</b> <u>Jendrik Silomon</u> , André Clausner and Ehrenfried Zschech Technical University Dresden, Germany

<b>Session 08: Reliability and Failure Analysis of Photonics devices</b>	
52	<p><b>Research on the factors affecting warpage of the light guide plate in the process of reliability</b>  <u>Shang Jiantong</u>, Yang Gang, Song Yong, Yu Hongjun, Che Chuncheng            Beijing BOE Optoelectronics Technology, China</p>
66	<p><b>Multi-Physics Simulation-Based Prognosis of Titanium Dioxide Nanoparticles-Embedded Solar Cell</b>  <u>Allah Rakhio Junejo</u>, Hyunseung Ryu, Wooseung Noh, Nagarajan Raghavan, Sanghoon Kim and Jaehyeok Doh            Gyeongsang National University, Korea</p>

<b>Session 09: High Power and Wide Bandgap Devices Reliability and FA</b>	
<b>INVITED</b>	<p style="text-align: center;"><b>Ga203 and Ga203 - Diamond for Next Generation Power Electronics</b>  <u>Prof. M. Kuball</u>            University of Bristol, United Kingdom</p>
41	<p><b>Comprehensive Investigation of the Switching Stability in SiC and GaN Power Devices</b>  <u>Shun-Wei Tang</u>, Chao-Ta Fan, Ming-Cheng Lin and Tian-Li Wu            National Yang Ming Chiao Tung University, Taiwan</p>
51	<p><b>High-Voltage a-IGZO Thin Film Transistor with the Symmetrical Stair Gate-Dielectric Structure</b>  <u>Guangan Yang</u>, Wangran Wu, Hao Tian, Zuoxu Yu and Weifeng Sun            Southeast University, China</p>
78	<p><b>SiC/SiO<sub>2</sub> interface traps effect on SiC MOSFETs Gate capacitance with biased Drain</b>  <u>Ilaria Maticena</u>, Luca Maresca, Michele Riccio, Andrea Irace, Giovanni Breglio, Alberto Castellazzi and Santolo Daliento            University Federico II, Italy</p>
85	<p><b>VTH &amp; Gm, max Instability Analysis of the Multiple GaN Chips based Cascode Power Module</b>  <u>Surya Elangovan</u>, Stone Cheng, Jia-Hao Yao and Edward Yi Chang            National Yang-Ming Chiao Tung University, Taiwan</p>
88	<p><b>Degradation Behavior and Analysis of GaN HEMTs Under High Power Microwave Pulse</b>  <u>Zhang Shuo</u>, Liu Lei, Chen Yiqiang, Li Zhijian, Wu Zhaohui and Li Bin            South China University of Technology, China</p>
116	<p><b>Thermal instability failure analysis of Shielded-gate Trench MOSFET in linear mode</b>  <u>Xinyu Ren</u>, Min Ren, Yining Wu, Chao Xu, Hongwei Zhou, Zehong Li and Bo Zhang            University of Electronic Science and Technology of China, China</p>

<b>Session 10: Hardware Assurance</b>	
<b>INVITED ID - 122</b>	<p style="text-align: center;"><b>Electronics Physical Assurance: Challenges and Opportunities</b>  <u>Prof. Navid Asadi</u>            University of Florida, USA</p>

11	<p><b>Logo Detection and Localization for IC Authentication, Marking Recognition, and Counterfeit Detection</b>  <u>Mukhil Azhaqan Mallaiyan Sathiaseelan</u>, Manoj Yasaswi Vutukuru, Shajib Ghosh, Olivia P. Paradis, Mark Tehranipoor, Navid Asadi and David Crandall  University of Florida, USA</p>
59	<p><b>PinPoint: An SMD Pin Localization Method</b>  <u>Nathan Jessurun</u>, Jacob Harrison, Mark M. Tehranipoor and Navid Asadi  University of Florida, USA</p>
101	<p><b>A scalable &amp; comprehensive resilience concept against optical &amp; physical IC back side attacks</b>  <u>Norbert Herfurth</u>, Elham Amini, Christian Boit, Jean-Pierre Seifert and Marco Lisker  Technical University Berlin, Germany</p>
114	<p><b>Hybrid Unsupervised Clustering for Pretext Distribution Learning in IC Image Analysis</b>  <u>Yee Yang Tee</u>, Xuenong Hong, Deruo Cheng, Tong Lin, Yiqiong Shi and Bah-Hwee Gwee  Nanyang Technological University, Singapore</p>

<b>Session 11: Package Level Failure Analysis</b>	
INVITED	<p><b>Workflows and Challenges in 3D Package Failure Analysis</b>  <u>Yan Li</u>  Intel Corporation, USA</p>
INVITED	<p><b>Submicron Nanosecond Thermal Imaging using Thermoreflectance for Failure Analysis</b>  <u>Dustin Kendig</u>  Microsanj, USA</p>
16	<p><b>Failure Analysis for SIP IC after TC reliability test</b>  <u>Bardon Cui</u>  Meixin Testing Technology, China</p>
20	<p><b>Novel Submicron Spatial Resolution Infrared Microspectroscopy for Failure Analysis of Semiconductor Components</b>  <u>Syahirah Mohammad-Zulkifli</u>, Bernice Mei Lin Zee and Michael K. F. Lo  AMD, Singapore</p>
21	<p><b>Novel Approach to Display Failure on OLED Display Device</b>  <u>Hoseok Song</u>, Kiwon Lee and Yongjae Lee  Samsung Display, Korea</p>
67	<p><b>Flip Chip Typical Failure Case Analysis Research</b>  <u>Jun Han</u> and Zhidan He  Suzhou TF-AMD Semiconductors, China</p>
75	<p><b>Failures of Ag Wire Bonding ICs in Real-world Applications</b>  <u>Xuanlong Chen</u>, Xiaping Xie, Min Wang, Yongjia Ruan, Tianhan Liu and Lin Shi  China Electronic Product Reliability and Environmental Testing Research Institute, China</p>
90	<p><b>From System to Package to Interconnect: An Artificial Intelligence Powered 3D X-ray Imaging Solution for Semiconductor Package Structural Analysis and Correlative Microscopic Failure Analysis</b>  Allen Gu, Masako Terada, Heiko Stegmann, Thomas Rodgers, Chao Fu and <u>Yanjing Yang</u>  Zeiss Microscopy, Singapore</p>

106	<p style="text-align: center;"><b>Defect Identification in Branched Traces by High-resolution Time-domain Reflectometry</b> <i><u>Yang Shang</u>, Makoto Shinohara, Eiji Kato, Masaichi Hashimoto</i> Advantest, Singapore</p>
120	<p style="text-align: center;"><b>Decoupling Sub-micron Resolution and Speed from Sample Size in 3D X-ray Imaging</b> <i>S.H. Lau, Sheraz Gul, Jeff Gelb, Tianzhu Qin, Guibin Zan, Katie Matusik, David Vine, Sylvia Lewis and <u>Wenbing Yun</u></i> Sigray, USA</p>