

IC Failure Analysis & Defects Characterisation Forum

Wednesday, 23 May 2018 | 09:30 – 16:30hrs

My1-4 (North Wing), Level 1A, MITEC | Kuala Lumpur, Malaysia

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Theme: Transformation of Defect Root Causation in the age of IoT

Synopsis: There are four main driving forces for the semiconductor industry. 1) The race to produce faster and smaller front-end devices; 2) Challenges and innovations in new packaging technology in light of product and system miniaturization, 3) proliferation in the diverse applications relating to IoT devices and their rapid paced evolution 4) increasing complexity of our systems and technologies in a competitive environment. Last year's edition of the forum, we address extensively about failure diagnostic on advanced packaging device challenges; this year we intend to focus on IoT.

By nature of IoT, the value of the chips are not measured just by its performance. The chips are being put to a multitude of targeted industries which include mobile, displays, automobiles, manufacturing, utilities, and others. Therefore, the other requirements of an IoT chip such as power consumption, durability, cost-effectiveness and turnaround time-to-production are integral components of the entire value chain. Failure analysis and defect characterization can play an important role to ensure the quality of a chip. Flaws as a result of either process or design constraints, or both, are inevitable in the early stages of a tapeout. Particularly, on the point of effective and efficient defect root causation, this forum seeks to broaden defect diagnostics perspectives and shares insights into the symbiotic relation between inline defect characterization and failure analysis in faster and more effective fault isolation in the semiconductor devices



Session Chair:

Dr. GOH Szu Huat

Senior Manager, Product Diagnostics Engineering

GLOBALFOUNDRIES Singapore Pte Ltd, Singapore

Time	Presentation
09:30-09:35	Welcome Remarks by Session Chair
09:35-10:00	Opening Address: Relevance of Machine Learning to Failure Debug <i>Dr. GOH Szu Huat, Senior Manager, Product Diagnostics Engineering, GLOBALFOUNDRIES Singapore Pte Ltd, Singapore</i>
10:00-10:25	Studies and Application of New FA Technique for Gate Oxide Integrity (GOI) Failure in Semiconductor Manufacturing and Wafer Fabrication <i>Dr. HUA Younan, Vice President & Chief Operation Officer, WinTech Nano-Technology Services Pte Ltd, Singapore</i>
10:25-10:50	Electronic Fault Isolation on Cutting-Edge Technology Nodes - NanoProbing in Failure Analysis <i>Dr. Andrew Jonathan SMITH, Sales and Application Specialist, Kleindiek Nanotechnik, Germany</i>
10:50-11:15	Break & Networking
11:15-11:40	Improving Time to Data for TEM Sample Preparation and Analysis <i>Mr. Larry DWORKIN, Director, Business Development, Thermo Fisher Scientific, USA</i>
11:40-12:05	Physical Unclonable Function (PUF)-Security Enabled FPGA for Medical Solutions in IoT <i>Ir. Dr. Norhayati SOIN, Associate Professor, University of Malaya, Malaysia</i>
12:05-12:30	RMA Root Cause Investigation 20nm Technology <i>Mr. Mike von den HOFF, Senior Yield Consultant, KLA-Tencor Corporation, Europe</i>
12:30-13:30	Conference Lunch & Networking
13:30-13:55	Laser-Based Inspection Technique for Non-Visual Defects <i>Mr. Tim KRYMAN, Senior Director, Corporate Marketing, Rudolph Technologies Inc, USA</i>
13:55-14:20	How to Meet Extreme IoT Yield Demands on Mature Process Nodes with Volume Diagnosis and Statistical Yield Analysis <i>Dr. Martin KEIM, Engineering Director, Mentor, A Siemens Business, USA</i>
14:20-14:45	High-Resolution 3D X-Ray Metrology for Semiconductor Packaging Development and Assembly <i>Dr. Allen GU, Staff Development Engineer, ZEISS Semiconductor Manufacturing Technology, USA</i>
14:45-15:10	Break & Networking
15:10-15:35	3D Chip Defect Characterization by High Resolution Time-Domain Reflectometry <i>Dr. SHANG Yang, Senior Engineer, Advantest (Singapore) Pte Ltd, Singapore</i>
15:35-16:00	Fault Isolation of 2.5D and 3D Packages Through Analysis Across Entire System <i>Mr. Ankush OBERAI, Group Director, R&D, Synopsys Inc, USA & Ms. Rupa KAMOJI, Senior Manager, R&D, Synopsys India Pvt Ltd, India</i>
16:00-16:25	Probing and Measurement of Material Properties Using Advanced Surface Characterization Tools for Successful Failure Analysis Investigations <i>Dr. Suhairi SAHARUDIN, Senior Staff Researcher, MIMOS Semiconductor (M) Sdn Bhd, Malaysia</i>
16:25-16:30	Closing Remarks by Session Chair