# Poster Presentations

**001, Metrology and Inspection for Advanced DRAM Production Using Second-Harmonic Generation**

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**002, Exploring Integrated Differential Phase Contrast for Enhanced 3D Imaging of Semiconductor Devices**

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**003, StrataPHI for Thin Film Surface & Interface Engineering: Depth-Resolved, Non-Destructive Analysis of Layered Materials**

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**004, Enhancement of Passive Voltage Contrast Using a Newly Designed Electron Energy Filter in a Scanning Electron Microscope**

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**005, Denoising of multispectral images by PCA-assisted self-supervised deep learning**

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~~**006, Workflow Automation For High Volume TEM Data Production**~~

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**006 Orbitrap™-SIMS for Accurate Quantification of Arsenic in SiGe Across Blanket and Fin-Type Geometries**

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**007, Balancing Speed, Damage, and Fidelity: A Four-Method TEM Prep Study on GaN Devices**

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**008, Interlaboratory Evaluation of Optical Homogeneity in Two-Dimensional Semiconductors**

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**009, Scanning X-ray Diffraction Microscopy for Strain Mappingand Defect Characterization in Semiconductor Microdevices**

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**010, Moiré Atomic Force Sensors for Robust Nanoscale Sensing**

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**011, Non-Destructive Depth Profiling By Variable Energy Parallel Angle Resolved XPS (VE-PARXPS)**

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**012, Quantification of Carbon Concentration in GAA Inner Spacer Gapfill by TEM/EELS**

Qinyi Fu, Siyao Wang, Xinwu Liu, Keith T Wong, David Miller, Danny Nguyen, Hongwen Zhou, Man-Ping Cai

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**013, Advanced X-ray Techniques for Multi-Scale Semiconductor Characterization and Device alternation**

Jeff Gelb, Sheraz Gul, Chuyuan Zheng, Vikaram Singh, Anasuya Adibhatla, SH Lau, Sylvia Lewis, and Wenbing Yun

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**014, High resolution SIMS Nanoanalytics for Semiconductor Process Control**

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**015, Advances in Nanoscale Dopant Metrology of Silicon-Based Materials using Atom Probe Tomography**

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**016, Widefield quantum diamond magnetic microscope for semiconductor failure analysis**

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**017, Critical Review of Electron-beam-based Junction ExaminationTechniques in Power Semiconductors**

Greg Johnson[1], Andreas Rummel[2], Pietro Paolo Barbarino[3], Heiko Stegmann[1], Hyunhwa Kim[1], Thomas Rodgers[1], Roberta Ricciari[3], Massimiliano Astuto[3], Cristiano Poltronieri[1]
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**018, Comprehensive Failure Analysis Workflow for Wafer to Wafer Bonding Vias**

Greg Johnson[1], Heiko Stegmann[1], Hyunhwa Kim[1], Allen Gu[1], Masako Terada[1], Thomas Rodgers[1], Soon Aik Chew[2], Kristof J. P. Jacobs[2], Boyao Zhang[2], Eric Beyne[2], Zsolt Tokei[2], Andreas Rummel[3]
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**019, TEM/STEM observation and Analysis for Advanced Characterization of 2 nm process and below**

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**020, Probing Defects in Commercial Power Devices Using Laser-Based Photoemission Electron Microscopy**

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**021, Scale calibration of AFM and characterization of AFM tip properties using a nano-structured certified reference material**

Kyung Joong Kim, Young Su Park, Sang-Hyun Hong, and Dae Kon Oh
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**022, Dispersion compensation in Multiwavelength dark-field Digital Holographic Microscopy for Overlay Metrology**

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**023, New perspectives to Thin Film Metrology using Ultra-High Aspect Ratio test structures**

Jenni Backholm, Mikko Utriainen, Feng Gao and Jussi Kinnunen
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**024, Failure Analysis and Fault Isolation Sample Preparation Technology for Integrated Circuits on Advanced Technology Nodes**

Megan Knapp, Srinivas Subramaniam, Mitchell J. Senger, Mary Edmonds, Christopher Morgan, Baohua Niu
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**025, Mineral Interface Doping: a safer alternative to doping silicon substrates with phosphorus/arsenic without hazardous chemicals**

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**026, Effect of Strain on Morphology in CVD-grown Janus MoSeS Monolayers**

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**027, Inline XPS and Raman Metrology for Evaluating Graphene Integrity During Thin Film Deposition**

Dominic Esan[1*], Kitty Kumar[1], Ahmad Al-Kukhun[1], Wing-Shun Lam[1], Sisi Cao[1], Ganesh Vanamu[2], Yinon Katz[3], Haim Prigozin[3], Lior Neeman[3],
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**028, Advancements In XPS Depth Profiling Using Femtosecond Laser Ablation (fs-LA) For Thin Film And Oxide Surfaces**

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**029, Advances in Atom Probe Tomography Analysis**

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**030, Advanced Packaging Process Control With Micro X-ray Fluorescence**

Basel Shamieh, Tslil Bialystocki, Alexander Tokar and Lior Levin
*Bruker Technologies Ltd, Migdal Ha'Emek, Israel*

**031, Analytical X-Ray Solutions For Thin Film And Wafer Analysis**

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**032, A Modular, Open-Source In Situ Ellipsometer for ALD: Low-Cost Instrumentation and a Complete Educational Build Guide**

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**033, DeepCore-X: Enabling Non-Destructive, High-Throughput Characterization of Buried Interfaces in Semiconductor Devices**

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**034, Improving Efficiency of Predictive Models Using Mixed Machine Learning Techniques on OCD Spectra**

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**035, Multi-wavelength atom probe tomography**

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**036, The Role of Ion Species in FIB-Induced Curtaining Artifacts**

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**037, Advanced automation of both acquisition and analytical processing in routine surface chemical analysis measurements with XPS.**

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**038, Quantum Enhanced Josephson Junction Field-Effect Transistors for Low-Energy Power-Efficient Microelectronics Applications**

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**039, Using Computational Suppression of Diffraction Artifacts to Enhance OV Metrology Precision**

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**040, Multiscale Strain Characterization using Moiré Sampling in Aberrations Corrected Scanning Transmission Electron Microscopy**

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**041, X-ray Scattering Metrology Solutions for Semiconductor Materials: A Comprehensive Overview**

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**042, Nanoscale Measurement of Semiconductor Interface Electric-Fields**

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**043, OBF-STEM: Enhancing Critical Dimension Measurements of Low-Contrast Beam Sensitive Semiconductor Structures**

Masahide Shima[1], Masayasu Yoneda[1], Yuhiro Segawa[1], Kyoichiro Asayama[1], Takeshi Kaneko[2], Kevin McIlwrath[2], Shuji Kawai[1], Kazuya Yamazaki[1]
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**044, Advanced Synchrotron X-ray Characterization for Overcoming Manufacturing and Performance Challenges in the Semiconductor Industry**

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**045, Quantification of P-doped Si in Advanced and confined Semiconductor Structures Using TOF-SIMS, Orbitrap™-SIMS, and Self-Focusing SIMS**

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**046, Surface Enhanced Particle Sizing (SEPS) and Surface Enhanced Raman Speciation (SERS) for on-wafer contamination identification and characterization**

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**047, Towards Direct Measurement Of Chemical Noise In EUV Resists: Dose Dependent IR-AFM Measurements**

Benjamin Verlhac[1], Komal Pandey[1], Kota Furuichi[2], Ken Maruyama[3], Joost van Bree[4], Gijsbert Rispens[4], Maarten van Es[1], Jo Finders[4], Diederik Maas[1]
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**048, High-resolution Scanning Thermal Microscopy for Nanoscale Temperature Mapping of Operating Microelectronic Devices**

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**049, A Conformal PEALD-$SiN_x$ Coating for Suppressing Mesa-Induced Leakage in GaN Vertical SBDs**

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**050, Laser scanning optical photothermal infrared (O-PTIR) microscopy for localization and identification of contaminants with sub-micron spatial resolution and breakthrough chemical imaging speed**

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**051, Multi-technique Analysis of Semiconductor Materials**

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**052, X-ray Metrology and Inspection for Advanced CFET Logic and 3D-DRAM**

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**053, Advanced Packaging Process Control With Micro X-ray Fluorescence**

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**054, Infrared Photo-induced Force Microscopy (PiFM-IR) As A Substitute For EDS In Defect Review**

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