[TuA1] Nanoscale Thin Film Deposition I	
Session Date	November 11 (Tue.), 2025
Session Time	13:00-14:40
Session Room	Room A (Capri Room, 2F)

[TuA1-1] [Invited] **13:00-13:30**

Selective Atomic Layer Deposition in Advancing Semiconductor Manufacturing

Rong Chen (Huazhong Univ. of Science and Tech., China)

[TuA1-2] [Invited] **13:30-14:00**

Development of a Selective-Area ALD Process for Buried Word Line in DRAM

Jongho Lee (SK hynix Inc., Korea)

[TuA1-3] [Invited] **14:00-14:20**

Novel Organic Molecular Inhibitors for Improved Step Coverage in High-Temperature ALD Dielectrics

Seung Hyun Lee, Deok Hyun Kim, Kok Chew Tan, Sung Gi Kim, Jung Hun Lim, Young-Soo Park, and Jaesun Jung (Soulbrain Co., Ltd., Korea)

[TuA1-4] **14:20-14:40**

Enhancing Oxide/Nitride Selectivity in Area-Selective ALD via Pyridine-Catalyzed Inhibition

Jieun Oh, Woohyuk Kim, and Woo-Hee Kim (Hanyang Univ., Korea)

[TuB1] Advanced Etchg I	
Session Date	November 11 (Tue.), 2025
Session Time	13:00-14:40
Session Room	Room B (Grand Ballroom 1, 2F)

[TuB1-1] [Plenary] **13:00-13:45**

Etch Innovation for 3D Electronic Devices

Thorsten Lill and Harmeet Singh (Lam Research, USA)

[TuB1-2] [Invited] **13:45-14:15**

Nonhalogen Etching for Hard-to-Etch Materials: A Concept Developed from Wet-Like Plasma Technology for Semiconductor Device Fabrication

Thi-Thuy-Nga Nguyen (Nagoya Univ., Japan)

[TuB1-3] [Invited] **14:15-14:40**

K-PIC: A Particle-in-Cell Plasma Simulation for RF Capacitively Coupled Plasmas

Hae June Lee (Pusan Nat'l Univ., Korea)

[TuC1] Advanced Metrology & Inspection, Process Diagnostics & Control, and Yield Management I	
Session Date	November 11 (Tue.), 2025
Session Time	13:00-14:45
Session Room	Room C (Grand Ballroom 3, 2F)

[TuC1-1] [Plenary] **13:00-13:45**

Characterizing Complexity: Metrology Innovations for Next-Gen Logic Nodes

Daniel Schmidt (IBM Research, USA)

[TuC1-2] [Invited] **13:45-14:15**

Progress of X-Ray Metrology for Analyzing Device Nanostructures in Advanced Semiconductors

Kazuhiko Omote (Rigaku Corporation, Japan)

[TuC1-3] [Invited] **14:15-14:45**

Spatially Coherent Xray Imaging over a Large FOV, High-Resolution, within Seconds

Trevor A. Norman (NeXray Inc., Korea)

[TuD1] Power Devices I	
Session Date	November 11 (Tue.), 2025
Session Time	13:00-14:40
Session Room	Room D (Sidney Room, 2F)

[TuD1-1] [Invited] **13:00-13:25**

Cosmic-Ray Radiation Effects on Power Devices

Dong-Seok Kim (KAERI, Korea)

[TuD1-2] [Invited] **13:25-13:50**

III-N Heterojunction Devices for Power Electronics and Extreme Environment Applications

Ho-Young Cha (Hongik Univ. and ChipsK Corp., Korea), Jun-Hyeok Yim, Do-Hyeong Yeo (Hongik Univ., Korea), and Jin-Hong Lim (Hongik Univ. and ChipsK Corp., Korea)

[TuD1-3] [Invited] **13:50-14:15**

Possibility of AlN/GaN/AlN Heterostructure for Power Device Applications

Jeong-Gil Kim (Dong-A Univ., Korea)

[TuD1-4] [Invited] **14:15-14:40**

Power Semiconductor Packaging Using Ceramic Clip

Youngdo Kang and Dongkwang Lee (Semipower Inc., Korea)

[TuE1] Innovative Abrasives and Carbon Layer CMP	
Session Date	November 11 (Tue.), 2025
Session Time	13:00-14:30
Session Room	Room E (Sicily Room, 1F)

[TuE1-1] **13:00-13:20**

Zirconia as a Novel Abrasive for CMP of Amorphous Carbon Layer (ACL)

Ikjoon Kim, Heesuk Kim, and Jin-Hyung Park (ENF Technology Co., Ltd., Korea)

[TuE1-2] **13:20-13:40**

Development of ITO Stop Ag Slurry Based on Structural Differences in Carboxylic Acids

Junhyuk Kim and Jeongho Lee (Soulbrain Co., Ltd., Korea)

[TuE1-3] [Invited] **13:40-14:10**

Surface Modification Mechanism of Carbon–Metal–Carbon Structures for Enhanced Mechanical Polishing Performance in Hard Amorphous Carbon Layer Chemical-Mechanical-Planarization

Jea-Gun Park, Pil-Su Kim, Min-Uk Jeon, Man-Hyup Han, Hyun-Sung Koh, and Kyoo-Chul Cho (Hanyang Univ., Korea)

[TuE1-4] **14:10-14:30**

Si-Wafer Polishing Rate Enhancing Mechanism Through Accelerating Hydrolysis Reaction at Si-Wafer Surface

Pil-Su Kim, Hye-Min Lee, Min-Uk Jeon, Se-Hui Lee, Su-Bin Kim, Ji-Hye Shin (Hanyang Univ., Korea), Jin-Hyung Park (ENF Technology Co., Ltd., Korea), Kyoo-Chul Cho (Hanyang Univ., Korea), Tae-Dong Kim (Hannam Univ., Korea), Jin-Sub Park, and Jea-Gun Park (Hanyang Univ., Korea)

[TuA2] Nanoscale Thin Film Deposition II	
Session Date	November 11 (Tue.), 2025
Session Time	14:50-16:20
Session Room	Room A (Capri Room, 2F)

[TuA2-1] [Invited] **14:50-15:20**

Ferroelectric Materials for Low Power Electronic Devices and Computing

Min Hyuk Park (Seoul Nat'l Univ., Korea)

[TuA2-2] [Invited] **15:20-15:40**

Parametric Dependence of $O(^1D)$ Flux and Density in O_2/Ar Inductively Coupled Plasmas: Effect of Gas Ratio and Pressure

Sanghyun Jo (Hanyang Univ., Korea), Kyoung-Ho Kim (Korea Polytechnics, Korea), and Ho Jun Kim (Hanyang Univ., Korea)

[TuA2-3] **15:40-16:00**

Gate Metal Engineering for Tailoring Ferroelectric Properties of $Hf_xZr_{1-x}O_2$ Thin Films

Yoonseok Lee, Kyung-Soo Park, Sang-Myun Lim, Ji-Hoon Choi, Yeon-Woo Choi, Jin-Yeong Lee, Hyeon-Cheol Jeong, Tae-Suk Kim, and Changhwan Choi (Hanyang Univ., Korea)

[TuA2-4] **16:00-16:20**

Role of Oxygen Incorporation in Ru Electrodes on Phase Stability and Reliability of $Hf_{0.5}Zr_{0.5}O_2$ Ferroelectrics

Hyojun Choi, Kun Yang (Seoul Nat'l Univ., Korea), Ji Sang Ahn, Eun Ji Ju (Seoul Nat'l Univ. of Science and Tech., Korea), Don In Han, Se Hyun Kim, Ju Yong Park, Heejin Hong, Kwan Hyun Park (Seoul Nat'l Univ., Korea), Jeong Hwan Han (Seoul Nat'l Univ. of Science and Tech., Korea), and Min Hyuk Park (Seoul Nat'l Univ., Korea)

[TuB2] Sustainable Etch	
Session Date	November 11 (Tue.), 2025
Session Time	14:50-16:20
Session Room	Room B (Grand Ballroom 1, 2F)

[TuB2-1] [Invited] **14:50-15:20**

Low-GWP Cyclic Etching of SiO_2 Contact Holes Using Heptafluoropropyl Methyl Ether

Sanghyun You and Chang-Koo Kim (Ajou Univ., Korea)

[TuB2-2] **15:20-15:35**

Low Global Warming $C_5F_{10}O/H_2O$ Plasma for Low Temperature Etching of SiO_2 and Si_3N_4

Daeun Hong, Sumin Park, Eunsu Lee, and Heeyeop Chae (Sungkyunkwan Univ., Korea)

[TuB2-3] **15:35-15:50**

Etching Characteristics of SiO_2 Using PF_5 + X(C_4F_6 & C_4F_8) Plasma Chemistries with ACL Mask

Ho June Chang, Byeongho Song, HyunJun Kim, Jeongwoon Bae, and Kyongnam Kim (Deajeon Univ., Korea)

[TuB2-4] **15:50-16:05**

Comparative Study of C_3F_6 and CF_4 for Sustainable Plasma Etching of SiO_2

Inkyoung Cho and Chang-Koo Kim (Ajou Univ., Korea)

[TuB2-5] **16:05-16:20**

Comparison of Etching Characteristics and Environmental Impact of Fluorocarbon Isomers in High Aspect Ratio (HAR) Etching Processes

Seyoung Choi, Chanhyuk Choi, Myeongho Park, Junsoo Lee, Akihide Sato, Sungtaek Kim, Dongwoo Kim, and Geunyoung Yeom (Sungkyunkwan Univ., Korea)

[TuC2] Advanced Metrology & Inspection, Process Diagnostics & Control, and Yield Management II	
Session Date	November 11 (Tue.), 2025
Session Time	14:50-16:20
Session Room	Room C (Grand Ballroom 3, 2F)

[TuC2-1] [Invited] **14:50-15:20**

The Future Is Here: Next-Gen Semiconductor Metrology & Inspection

Taeyong Jo, Jinwoo Ahn, Jaewon Lee, Jeonghoi Kim, Hansaem Park, Myungjun Lee, and Sangjin Hyun (Samsung Electronics Co., Ltd., Korea)

[TuC2-2] [Invited] **15:20-15:50**

The Importance and Role of MI in Semiconductor Devices' 3D Era

Byoung-Ho Lee (Hitachi Hightech Corp., Japan)

[TuC2-3] [Invited] **15:50-16:20**

Overlay Metrology for Layer Alignment Accuracy in Device Processing

Nahee Park (KLA Corp., USA)

[TuD2] Power Devices II	
Session Date	November 11 (Tue.), 2025
Session Time	14:50-16:30
Session Room	Room D (Sidney Room, 2F)

[TuD2-1] [Invited] **14:50-15:15**

Radiation-Hardened Edge Termination Design for SiC Power Devices under Proton

Ogyun Seok (Pusan Nat'l Univ., Korea)

[TuD2-2] [Invited] **15:15-15:40**

Development Status of SiC MOSFET in Powermaster Semiconductor

Hongki Kim and Jaegil Lee (Powermaster Semiconductor, Korea)

[TuD2-3] [Invited] **15:40-16:05**

Fabrication of SiC SBD for 6.5 kV Edge-Termination Designs

Sung Mo Koo, Weon Chan Kim, Dong Ju Kang (EYEQ Lab Inc., Korea), Jun Seong Kim, Hyemin Kang (KENTECH, Korea), Sang Gi Kim, and Gwon Je Kim (EYEQ Lab Inc., Korea)

[TuD2-4] [Invited] **16:05-16:30**

Performance of TES Tunable SiC Epitaxial System "TRION"

Geumchan Hwang and Ray Suh (TES, Korea)

[TuE2] CMP Consumables: Conditioning, Monitoring, and Abrasives	
Session Date	November 11 (Tue.), 2025
Session Time	14:50-16:30
Session Room	Room E (Sicily Room, 1F)

[TuE2-1] [Invited] **14:50-15:20**

CMP Pad Conditioning of the Future: Fundamentals, Emerging Technologies, and Development Pathways

Yongsik Moon, Kyoung-Kuk Kwack, Joohan Lee, Jongkuk Park, Eunhwa Song, Youngtae Jeon, Juhee Lee, Sungyu Park, Yujeong Jin, and Jongjae Lee (EHWA Diamond, Korea)

[TuE2-2] [Invited] **15:20-15:50**

Slurry Sensing for CMP Processes

Jin Su Hong, Min Cheol Kim, and Min Ku Kim (Hanyang Univ., Korea)

[TuE2-3] **15:50-16:10**

Synthesis Strategies of Ceria Abrasives for Optimizing Dielectric Chemical Mechanical Planarization Performance

Jae Uk Hur and Jeong Ho Lee (Soulbrain Co., Ltd., Korea)

[TuE2-4] **16:10-16:30**

Fenton Reaction Enhancing Significant Chemical Oxidation for Ag Chemical Mechanical Planarization

Man-Hyup Han, Hyun-Sung Koh, Il-Haeng Heo, Min-Ji Kim, Woo-Hyun Jin, Jin-Woo Kim, Seung-Hwan Kim, Jin-Sub Park, and Jea-Gun Park (Hanyang Univ., Korea)

[TuF2] Processing for 3D Integration	
Session Date	November 11 (Tue.), 2025
Session Time	14:50-16:25
Session Room	Room F (Panorama Room, 16F)

[TuF2-1] [Plenary] **14:50-15:35**

Advanced Packaging Technology with Cu-Cu Hybrid Bonding

Takafumi (Tak) Fukushima (Tohoku Univ., Japan)

[TuF2-2] [Invited] **15:35-16:05**

Vertical Fan-Out (VFO) Technology for Memory and Storage Applications

Ji Yong Park (SK hynix Inc., Korea)

[TuF2-3] [Invited] **16:05-16:25**

Enabling 3D Integration: Advances in Hybrid Wafer Bonding Technology

Thomas Kasbauer (EV Group, Austria)

[WeA1] Nanoscale Thin Film Deposition III	
Session Date	November 12 (Wed.), 2025
Session Time	09:00-10:40
Session Room	Room A (Capri Room, 2F)

[WeA1-1] [Invited] 09:00-09:30

Non-Fluorinated Molybdenum Metallization in 3D NAND

Jungho Lee (Lam Research Korea, Korea)

[WeA1-2] [Invited] 09:30-10:00

Atomic Layer Deposition of Molybdenum Thin Films: Enhancing Deposition Characteristics and Film Quality with Advanced Deposition Materials

Changbong Yeon and Jaesun Jung (Soulbrain Co., Ltd., Korea)

[WeA1-3] 10:00-10:20

Interlayer Engineering for Reliable Hybrid Channel NAND Flash

Taewon Hwang, So Young Lim, and Jin-Seong Park (Hanyang Univ., Korea)

[WeA1-4] 10:20-10:40

Atomic Layer Deposition of Binary Alloy Thin Films for Advanced Interconnects

Yeong-Seo Cho, Myung-Jin Jung, and Se-Hun Kwon (Pusan Nat'l Univ., Korea)

[WeB1] HARC Etch and Plasma Source	
Session Date	November 12 (Wed.), 2025
Session Time	09:00-10:40
Session Room	Room B (Grand Ballroom 1, 2F)

[WeB1-1] [Invited] **09:00-09:30**

Next Generation HARC Etch Technologies Requiring Ultra-High Aspect Ratio, High Selectivity, and Very High Etch Rate for VNAND Device

Kyujin Jang, Hoki Lee, and Jaeho Min (Samsung Electronics Co., Ltd., Korea)

[WeB1-2] [Invited] **09:30-09:55**

3D NAND Dielectric Etch Technology Challenges and Breakthroughs

Dongsoo Lee (Lam Research Korea, Korea)

[WeB1-3] **09:55-10:10**

Advanced Etch Technology Using Ultra-Low Electron Temperature Plasma

Junyoung Park, Nayeon Kim, Min-Seok Kim, and Chin-Wook Chung (Hanyang Univ., Korea)

[WeB1-4] **10:10-10:25**

Investigation of Toroidal Slot Antennas for Microwave Heating and Plasma Generation

Sung-Hyeon Jung and Ho-Jun Lee (Pusan Nat'l Univ., Korea)

[WeB1-5] **10:25-10:40**

Investigation of Plasma Density Distribution and Electron Heating Mechanisms in Capacitively Coupled Plasma

Seong Eun Oh and Ho-Jun Lee (Pusan Nat'l Univ., Korea)

[WeC1] Advanced Metrology & Inspection, Process Diagnostics & Control, and Yield Management III	
Session Date	November 12 (Wed.), 2025
Session Time	09:00-10:30
Session Room	Room C (Grand Ballroom 3, 2F)

[WeC1-1] [Invited] **09:00-09:30**

Next-Generation Optical Metrology for Advanced Semiconductor Packaging

Joonho You and Jaeyoung Jang (Nexensor Inc., Korea)

[WeC1-2] [Invited] **09:30-09:50**

Wafer Fracture Stress Due to Edge Cracks and Crack Inspection Method

Hyun-Jung Kim and Ju-Won Lee (Nexus1 Co., Ltd., Korea)

[WeC1-3] [Invited] **09:50-10:10**

Development of Designing Motion Profile with Advanced Jerk for Vibration Suppression and High Wafer Throughput

Heejae Byun, Kyobong Kim, Jaewon Choi, Sangoh Kim, and Janghwan Kim (SEMES, Korea)

[WeC1-4] [Invited] **10:10-10:30**

AI-Enhanced Metrology Integration Framework for Atomic Layer Deposition Systems

Jihye Seo (KETI, Korea)

[WeD1] Lithography Process	
Session Date	November 12 (Wed.), 2025
Session Time	09:00-10:40
Session Room	Room D (Sidney Room, 2F)

[WeD1-1] [Invited] **09:00-09:30**

Journey to the Future: Low & High NA EUV Lithography for Next Generation Logic Devices

Jong-Hwa Baek (Samsung Electronics Co., Ltd., Korea)

[WeD1-2] [Invited] **09:30-10:00**

EUV Mask Technology: Evolution and Future Outlook

Chan-Uk Jeon (Tekscend Photomask Corp., Japan)

[WeD1-3] [Invited] **10:00-10:20**

SEM Overlay Target Optimization for NZO Improvement by Measuring Device Like Target Using E-Beam Simulation

You Jin Kim, Jeong Ho Yeo (Applied Materials Korea, Korea), Jenny Perry, Noam Oved, Uri Smolyan, Tal Itzkovich, Michael Shifrin (Applied Materials Israel, Israel), Young Jin Cha, Baek Jun Kim (Applied Materials Korea, Korea), Ikjun Jang, Il Hwan Kim, Byounghoon Kim, Sungbin Jeon, Muyoung Lee, Hyunju Song, Myeongcheol Go, Narim Noh, Hachul Shin, Sangsu Jeong, Eunho Choi, Jinhong Park, and Changmin Park (Samsung Electronics Co., Ltd., Korea)

[WeD1-4] [Invited] **10:20-10:40**

Development of EUV Pellicles Supporting High EUV Power

Prashant Purwar, Dongyeong Yoo, Munsu Choi, Arim Kim, Chullkyun Park, Sangmin Jeong, Yonghyeon Kim, and Juhee Hong (S&S TECH., Korea)

[WeE1] Nanostructured Materials and Surface Chemistry	
Session Date	November 12 (Wed.), 2025
Session Time	09:00-10:30
Session Room	Room E (Sicily Room, 1F)

[WeE1-1] [Invited] 09:00-09:30

3D Observation Method of Transporting Nano-Particle near a Surface

Panart Khajornrungruang (Kyushu Inst. of Tech., Japan)

[WeE1-2] [Invited] 09:30-10:00

Oxidation Behavior of Co Metal for CMP Slurry Design

Seho Sun (Yeungnam Univ., Korea)

[WeE1-3] [Invited] 10:00-10:30

Surface Modified Nanoparticle Abrasives for Efficient CMP Process

Tae-Dong Kim (Hannam Univ., Korea)

[WeF1] Processing for AI Semiconductor Modules	
Session Date	November 12 (Wed.), 2025
Session Time	09:00-10:35
Session Room	Room F (Panorama Room, 16F)

[WeF1-1] [Plenary] **09:00-09:45**

Status of AI Packages and Its Manufacturing Issues

Seungbae Park (State Univ. of New York at Binghamton, USA)

[WeF1-2] [Invited] **09:45-10:15**

Challenges of Hybrid Cu Bonding for High Bandwidth Memory

Jaewha Park, Byengjun Lee, Ilyoung Yoon, Cheolhyun Lim, and Kwangjin Moon (Samsung Electronics Co., Ltd., Korea)

[WeF1-3] [Invited] **10:15-10:35**

Cu Post Bonding Technology, based on Laser-Assisted Bonding with Compression (LABC) and Fume-Free Laser Solder Paste for Advanced 3D Interconnections

Kwang-Seong Choi, Jiho Joo, Gwang-Mun Choi, Jungho Shin, Chanmi Lee, Ki-Seok Jang, Jin-Hyuk Oh, Ho-Gyeong Yun, Seok Hwan Moon, Gaeun Lee, Seong Cheol Kim, Yong-Sung Eom (ETRI, Korea), Geunsik Ahn, and Youn Sung Ko (PROTEC Co., Ltd., Korea)

[WeA2] Nanoscale Thin Film Deposition IV	
Session Date	November 12 (Wed.), 2025
Session Time	14:10-15:50
Session Room	Room A (Capri Room, 2F)

[WeA2-1] [Invited] **14:10-14:40**

2D Semiconductor Crystal Layer Deposition Toward Fab-Line Compatibility

Kibum Kang (KAIST and TDS Innovation Co., Ltd., Korea)

[WeA2-2] [Invited] **14:40-15:10**

Innovations in Deposition Technologies at the Onset of 3D Devices

Kwangmin Park, J.U. Kim, I. Zoh, S.H. Jang, T. Lee, S. Jeong, I. Jeon, Y.S. Tak, S.W. Jung, S.Y. Yang, H.J. Kim, Z. Wu, S.C. Oh, J.H. Park, S.U. Han, M.H. Cho, Y. Kim, P. Yun, J.W. Han, S.W. Park, Daewon Ha, S.H. Lee, S.J. Ahn, S.J. Hyun, and Jaihyuk Song (Samsung Electronics Co., Ltd., Korea)

[WeA2-3] [Invited] **15:10-15:30**

ALD/ALE for the Advanced Technology

Van Quang Nguyen, Minji Jeong, Dohoe Kim, and Jihye Kim (ISAC Research Inc., Korea)

[WeA2-4] **15:30-15:50**

Development of ALD-Based Initial Surface Control Technology for Sub-10 nm Continuous Ir Films in Advanced Interconnect Metallization

Myung-Jin Jung and Se-Hun Kwon (Pusan Nat'l Univ., Korea)

[WeB2] Advanced Etch II	
Session Date	November 12 (Wed.), 2025
Session Time	14:10-15:50
Session Room	Room B (Grand Ballroom 1, 2F)

[WeB2-1] [Invited] **14:10-14:40**

Advanced Patterning of Metal Oxide Semiconductors for Memory Applications: IBE, RIE, and ALE Approaches

Jie Li, Shreya Kundu, Laurent Souriau, Yiqun Wan, Attilio Belmonte, and Katia Devriendt (imec, Belgium)

[WeB2-2] [Invited] **14:40-15:05**

r-Wave Resonance-Enhanced ICP Etcher for High-Precision Dry Etching

Taeho Shin (ICD Ltd., Korea)

[WeB2-3] **15:05-15:20**

Crystalline Ultra-Thin High-K Films Enabled by Fluorine-Radical-Based Atomic Layer Etching

Somyeong Shin, Chang Kyu Lee, Chan Lee, Hyeonjin Cha, Byung Chul Cho, Ju Hwan Park (WONIK IPS, Korea), Misoo Kim, Khabib Khumaini, Hye-Lee Kim, Gyejun Cho, Yewon Kim, Won-Jun Lee (Sejong Univ., Korea), and Min Kim (WONIK IPS, Korea)

[WeB2-4] **15:20-15:35**

Study on SiO_2 Atomic Scale Etching Using Selective Control of Ar Metastable Atom Generation

Chang-Min Lim, Jae-Hwi Kim, Hyeon-Jun Cho, Young Don Kim, and Chin-Wook Chung (Hanyang Univ., Korea)

[WeB2-5] **15:35-15:50**

Ultra-Low Electron Temperature Plasma for Atomic-Scale Semiconductor Processing

Min-seok Kim, Junyoung Park, and Chin wook Chung (Hanyang Univ., Korea)

[WeC2] Advanced Metrology & Inspection, Process Diagnostics & Control, and Yield Management IV	
Session Date	November 12 (Wed.), 2025
Session Time	14:10-15:40
Session Room	Room C (Grand Ballroom 3, 2F)

[WeC2-1] [Invited] **14:10-14:40**

Development of DUV & EUV Optics for Semiconductor Inspection

Hagyong Kihm (KRISS and Univ. of Science and Tech., Korea) and Jae-Hyuck Choi (KRISS, Korea)

[WeC2-2] [Invited] **14:40-15:10**

Development of a High-Brightness LaB_6 Electron Source and REELS(Reflection Electron Energy Loss Spectroscopy)

Takashi Ogawa, Ha Rim Lee (KRISS, Korea), Youngkwon Haam (KRISS and Chungnam Nat'l Univ., Korea), Junhyeok Hwang, Jeong Woong Lee (KRISS, Korea), and In-Yong Park (KRISS, Univ. of Science and Tech., and Chungnam Nat'l Univ., Korea)

[WeC2-3] [Invited] **15:10-15:40**

Applications of High-Speed AFM for Advanced Packaging, EUV Lithography and CMP

A.D. Giddings (Infinitesima Ltd., UK)

[WeD2] Material & Process	
Session Date	November 12 (Wed.), 2025
Session Time	14:10-15:50
Session Room	Room D (Sidney Room, 2F)

[WeD2-1] [Invited] **14:10-14:40**

Advanced Patterning: Tackling the Big Problems in Printing Small Features

Ben Eynon (Lam Research, USA)

[WeD2-2] [Invited] **14:40-15:10**

Understanding of Novel Patterning Materials Approacing to Next Gen Lithography

Ethan C B Lee (SDI, Korea)

[WeD2-3] [Invited] **15:10-15:30**

EUV vs. E-Beam Photoresists: Cross-Platform Analysis and Optimization Strategies

Hyungkun Lee, Jaehyun Kim, Myounghyun Hur, Jeongwoo Kim, and Jeongsik Kim (Dongjin Semichem Co., Ltd., Korea)

[WeD2-4] [Invited] **15:30-15:50**

EUV Mask Local CD Correction System Development via Laser Irradiation

Hyun Yoon, Yujin Cho, Ki Hoon Choi, Hojong Hwang, Seung Eon Oh, Seryeyohan Cho, Jin Yeong Sung, Jangjin Lee, Taeshin Kim, Sang Hyeon Ryu, Youngho Park, Donggeun Lee, Joon Ho Won (SEMES, Korea), Yong Woo Kim, Jong Keun Oh, Jong Ju Park (Samsung Electronics Co., Ltd., Korea), and Byeonggeun Kim (SEMES, Korea)

[WeE2] AI-Driven CMP and Emerging Process Strategies	
Session Date	November 12 (Wed.), 2025
Session Time	14:10-15:40
Session Room	Room E (Sicily Room, 1F)

[WeE2-1] [Invited] **14:10-14:40**

Machine Learning-Based Strategic Corrosion Management for Targeted Inhibitor Implementation in CMP Applications

Jihoon Seo (Clarkson Univ., USA)

[WeE2-2] **14:40-15:00**

Mechanism on Formation of Selective Hindrance Layer on Si-Film Enhancing Etch-Rate Selectivity of $Si_{1-x}Ge_x$ to Si-Film

Chang-Jin Lee and Jea-Gun Park (Hanyang Univ., Korea)

[WeE2-3] **15:00-15:20**

Design Rules for Micro-Structured Chemical Mechanical Polishing Pads to Enhance MRR

Hyun Jun Ryu, Seounghee Yun, and Sanha Kim (KAIST, Korea)

[WeE2-4] [Invited] **15:20-15:40**

Post CMP Cleaning Strategies for Amorphous Silicon in Wafer Bonding Processes

Arunkumar G V, Wei-Tsu Tseng, Nancy Wang, and Donald Canaperi (IBM Research, USA)

[WeF2] Materials and Processing for Advanced Packaging	
Session Date	November 12 (Wed.), 2025
Session Time	14:10-15:50
Session Room	Room F (Panorama Room, 16F)

[WeF2-1] [Invited] **14:10-14:30**

Development of an Eco-Friendly Photoresist Stripper for Advanced Semiconductor Packaging Processes

Bo Yeon Lee, Sangseung Park, Seungeun Lee, Ga Young Kim, Seok Jin Hong, and Jung Shik Heo (ENF Technology Co., Ltd., Korea)

[WeF2-2] [Invited] **14:30-14:50**

FINE Cut and FINE Forming (TGV) of HBM4, Glass Core and Interposer

Seak-Joon Lee (ITI, Korea)

[WeF2-3] [Invited] **14:50-15:10**

Glass Package Substrates for High-Performance Chiplet Systems

Jimin Kwon (UNIST, Korea)

[WeF2-4] [Invited] **15:10-15:30**

Bonding Strength and Fracture Behavior in Patterned Cu–SiO_2 Hybrid Interfaces

Ah-Young Park (Univ. of Seoul, Korea), Hakyung Jeong (KIMM, Korea), and Kyung-Ho Park (KANC, Korea)

[WeF2-5] [Invited] **15:30-15:50**

Development of Optical Interconnection Core Technologies for Implementation and Reliability Enhancement of Co-Packaged Optics

Hongyun So, Keuntae Baek, and Animesh Sinha (Hanyang Univ., Korea)

[WeA3] Nanoscale Thin Film Deposition V	
Session Date	November 12 (Wed.), 2025
Session Time	16:05-17:45
Session Room	Room A (Capri Room, 2F)

[WeA3-1] [Invited] 16:05-16:35

Atomically Ordered ALD Oxide Semiconductors for High-Mobility, Low-Temperature Logic and BEOL Integration

Jin-Seong Park (Hanyang Univ., Korea)

[WeA3-2] [Invited] 16:35-17:05

High-Performance Transparent Conducting Oxides via Nano-Textured Substrates and Ag Interlayer

Sung-Yong Mun, Dong-Hwi Lee, and Young-Rae Cho (Pusan Nat'l Univ., Korea)

[WeA3-3] 17:05-17:25

Theoretical Study of Radical Decomposition of Low GWP Alternative Gases and Fluorocarbon Film Formation on SiO_2

Minji Kim and Sangheon Lee (Ewha Womans Univ., Korea)

[WeA3-4] 17:25-17:45

Work Function Modulation of Chlorine-Free TiAlN Films through Controlled Al Incorporation by Thermal ALD

Gyeong Min Jeong, Hae-dam Kim, and Jin-Seong Park (Hanyang Univ., Korea)

[WeD3] Computational Lithography & Mask	
Session Date	November 12 (Wed.), 2025
Session Time	16:05-17:45
Session Room	Room D (Sidney Room, 2F)

[WeD3-1] [Invited] **16:05-16:35**

EUV and High-NA EUV Patterning for DRAM Scaling: Challenges and Opportunities

Jeonghoon Lee (imec, Belgium)

[WeD3-2] [Invited] **16:35-16:55**

From Molecular Simulations to Artificial Intelligence for Advanced Patterning Materials Designs

Su-Mi Hur (Chonnam Nat'l Univ., Korea)

[WeD3-3] **16:55-17:10**

Pioneering Carboxylated Zirconium Oxo Cluster Resist for Precision Nanoscale Patterning

Seong-Ji Ha, Bo Kyu Kwon, Jinyoung Lee, and Ji-Hyun Jang (UNIST, Korea)

[WeD3-4] [Invited] **17:10-17:30**

MBM-4000: Electron Multi-Beam Mask Writer for Advanced Mask Making

Rieko Nishimura, Hiroshi Matsumoto, Kenichi Yasui, Tomoo Motosugi, Hayato Kimura, and Yoshinori Kojima (NuFlare Technology, Inc., Japan)

[WeD3-5] **17:30-17:45**

Contamination Control Strategies in Next-Generation EUV Pods

Elson Tu, Asheesh Nautiyal, and Chiaho Chuang (Gudeng Precision Industry Co., Ltd., Taiwan)

[WeE3] Reliability and Integration Challenges in Advanced Packaging	
Session Date	November 12 (Wed.), 2025
Session Time	16:05-17:35
Session Room	Room E (Sicily Room, 1F)

[WeE3-1] [Invited] **16:05-16:25**

Emerging CMP Solutions for Next Generation Advanced Packaging Process

Jae-Dong Lee, Eunok Kim, Yeongjung Kim, Hyungoo Kong, Jae Hak Lee, and Seung Mahn Lee (KCTech, Korea)

[WeE3-2] [Invited] **16:25-16:55**

Wet Cleaning Process Issues with Memory Device Scaling

Young-Hoo Kim, Pyojin Jeon, Junho Yun, Junho Lee, Yongwook Lee, Gunshik Yun, Sunghyun Park, Jungwan Han, Ji-Hoon Jeong, Tae-Hong Kim, Woogwan Shim, Sungyong Park, and Hyosan Lee (Samsung Electronics Co., Ltd., Korea)

[WeE3-3] **16:55-17:15**

Mitigating Galvanic Corrosion in Cu/Ru Interfaces through Selective Surface Interactions for Ru Barrier Metal CMP

Ganggyu Lee, Sumin Hong, Giha Lee, Byungjoon Kim, Taeseup Song, and Ungyu Paik (Hanyang Univ., Korea)

[WeE3-4] **17:15-17:35**

Si-Wafer Polishing Rate Enhancement by Amine Functional Group as Hydrolysis Reaction Accelerator

Min-Uk Jeon, Pil-Su Kim, Se-Hui Lee, Hye-Min Lee, Su-Bin Kim, Ji-Hye Shin (Hanyang Univ., Korea), Jin-Hyung Park (ENF Technology. Co., Ltd., Korea), Kyoo-Chul Cho (Hanyang Univ., Korea), Tae-Dong Kim (Hannam Univ., Korea), Jin-Sub Park, and Jea-Gun Park (Hanyang Univ., Korea)

[WeF3] Advanced Designs, Processing, and Reliability	
Session Date	November 12 (Wed.), 2025
Session Time	16:05-17:45
Session Room	Room F (Panorama Room, 16F)

[WeF3-1] [Invited] 16:05-16:25

Advanced Flip-Chip Bonding Process via Intense Pulsed Light Irradiation: From Single-Chip to Multi-Chip Stacking Applications

Young-Min Ju, Jong-Whi Park, Hyeong-bin Park, Yun-Joong Kim, and Hak-Sung Kim (Hanyang Univ., Korea)

[WeF3-2] [Invited] 16:25-16:45

Statistical Signal Integrity Analysis with Nonideal Buffer of DFE for Chiplet

Junyong Park (Kyung Hee Univ., Korea)

[WeF3-3] [Invited] 16:45-17:05

Visualized Thermo-Mechanical Failure Mechanisms in Advanced Semiconductor Package Interconnects via Microscale Deformation Analysis

Tae-Ik Lee (KITECH, Korea)

[WeF3-4] 17:05-17:25

3D-Printed Organic Interposer with Embedded Fan-Out Interconnects Enabled by Additive Manufacturing

Haksoon Jung and Jimin Kwon (UNIST, Korea)

[WeF3-5] 17:25-17:45

Predictive Analysis of Signal Transmission in Pogo Pin–Load Board

Jonghee Park and Youbean Kim (Myongji Univ., Korea)

[ThA1] Nanoscale Thin Film Deposition VI	
Session Date	November 13 (Thu.), 2025
Session Time	09:00-10:30
Session Room	Room A (Capri Room, 2F)

[ThA1-1] [Invited] **09:00-09:30**

Multi-Threshold Voltage (V_{ht}) Engineering Using ALD TaN-Based HKMG Gate Stack for Advanced Logic and DRAM Devices

Changhwan Choi (Hanyang Univ., Korea)

[ThA1-2] [Invited] **09:30-09:50**

Ultrathin Freestanding Ceramic Membranes for Yield Enhancement in Extreme Ultraviolet Lithography

Seul-Gi Kim, Hyun-Mi Kim (KETI, Korea), Yongkyung Kim (KETI and Hanyang Univ., Korea), Hye-Young Kim, Kihun Seong (KETI and Sungkyunkwan Univ., Korea), Su Min Lee (KETI, Korea), Jonghyuk Yoon (KETI and Sungkyunkwan Univ., Korea), and Hyeongkeun Kim (KETI, Korea)

[ThA1-3] [Invited] **09:50-10:10**

Transforming Semiconductor Manufacturing with AI: Changing the Paradigm of Next-Generation Semiconductor Processes

Jinwoo Kim, Changheon Han, Kwan Lee, Nuri Oh, Changmin Jung, Taehang Ahn, Minje Kim, and Beomju Yu (HEX A.I. Labs Inc., Korea)

[ThA1-4] **10:10-10:30**

NiO/Ag/NiO Transparent Conducting Electrode for NiO Based Photodetectors

Jun-Dar Hwang and Yi-Rong Liou (Nat'l Chiayi Univ., Taiwan)

[ThB1] Atomic Scale Etching	
Session Date	November 13 (Thu.), 2025
Session Time	09:00-10:40
Session Room	Room B (Grand Ballroom 1, 2F)

[ThB1-1] [Invited] **09:00-09:30**

Challenges and Approaches of HARC Patterning for AI Memory Devices

Yeonghun Han (SK hynix Inc., Korea)

[ThB1-2] [Invited] **09:30-10:00**

Conversion-Free Atomic Layer Etching (ALE) of ZnO: Effect of Precursor on the ALE Process

Taewook Nam (Sejong Univ., Korea)

[ThB1-3] [Invited] **10:00-10:25**

Ab Initio Analysis of Atomistic Diffusion of Halogen Species at the Etching Front

Sangheon Lee (Ewha Womans Univ., Korea)

[ThB1-4] **10:25-10:40**

Investigation of Wafer Edge Tilting in Capacitively Coupled Plasmas via IEADF-Driven Monte Carlo Feature-Scale Simulation

Sanghyun Jo (Hanyang Univ., Korea), Kyoung-Ho Kim (Korea Polytechnics, Korea), and Ho Jun Kim (Hanyang Univ., Korea)

[ThC1] Advanced Metrology & inspection, Process diagnostics & control, and Yield management V	
Session Date	November 13 (Thu.), 2025
Session Time	09:00-10:20
Session Room	Room C (Grand Ballroom 3, 2F)

[ThC1-1] [Invited] **09:00-09:20**

High-/Low-Pressure Swing Annealing for Uniform Curing of High-Aspect-Ratio TiN Electrodes in DRAM Capacitors

Won Jun Jang (Sungkyunkwan Univ. and Wonik IPS, Korea), Won Sik Ahn (Wonik IPS, Korea), Woo Hui Lee, and Hyoungsub Kim (Sungkyunkwan Univ., Korea)

[ThC1-2] [Invited] **09:20-09:50**

A New Approach to High-Throughput Defect Review of Unpatterned Wafers for Leading Edge Nodes

Ali Ozhan Altun (UNISERS AG, Switzerland)

[ThC1-3] [Invited] **09:50-10:20**

Advanced Technique for Analysis of Defect States in Future 3D Semiconductor Devices

Hagyoul Bae (Jeonbuk Nat'l Univ., Korea)

[ThD1] Process & Mask	
Session Date	November 13 (Thu.), 2025
Session Time	09:00-10:50
Session Room	Room D (Sidney Room, 2F)

[ThD1-1] [Plenary] **09:00-09:45**

Advances in Lithography and Patterning for Logic and DRAM

Kurt Ronse (imec, Belgium)

[ThD1-2] [Invited] **09:45-10:15**

EUV ECO Equal Maximizing Productivity

Heeyoul Lim (SK hynix Inc., Korea)

[ThD1-3] [Invited] **10:15-10:35**

Recent Progress in Tin-Based Inorganic Molecular Resists for EUV Lithography and Proposal of Cyclic Siloxane Resist for Blue-X Lithography

Hyun-Dam Jeong (Chonnam Nat'l Univ., Korea)

[ThD1-4] [Invited] **10:35-10:50**

Cartridge-Based Van Der Waals Printing for Versatile Device Integration

Dong Hyup Kim (Chonnam Nat'l Univ., Korea)

[ThE1] CMP for Heterogeneous Integration and New Materials	
Session Date	November 13 (Thu.), 2025
Session Time	09:00-10:45
Session Room	Room E (Sicily Room, 1F)

[ThE1-1] [Plenary] **09:00-09:45**

Role of CMP in Enabling New Materials for Heterogeneous Integration

K. Mikhaylichenko, C. Lee, T. Osterheld, S. Barkam, S. Deshpande, B. Brown, R. Sreenivasan, S. Krishnan, M. Khoury, J. Lei, Z. Chen, K. Sharma, B. Chen, and V. Sukumaran (Applied Materials, USA)

[ThE1-2] [Invited] **09:45-10:15**

Oxide Layer Engineering for Cobalt CMP

Taeseup Song, Ungyu Paik, Ganggyu Lee, Sumin Hong, and Giha Lee (Hanyang Univ., Korea)

[ThE1-3] [Invited] **10:15-10:45**

Hybrid Bonding Challenges and Advanced CMP Strategies for Yield Enhancement

Haeri Kim, Hyeok Joo Lee, Sangchul Kim, and Jong Han Shin (SK hynix Inc., Korea)

[ThF1] Carbon Neutrality in Semiconductor Industry I	
Session Date	November 13 (Thu.), 2025
Session Time	09:00-10:35
Session Room	Room F (Panorama Room, 16F)

[ThF1-1] [Plenary] **09:00-09:45**

Advances in Etching Technologies for Next Generation Semiconductor Manufacturing towards Sustainable Development Goals

Shih-Nan Hsiao (Nagoya Univ., Japan)

[ThF1-2] [Invited] **09:45-10:10**

Estimating GWP based on a Comprehensive Analysis of R134a: A Method for Accurate Monitoring of Greenhouse Gas Emissions

Dongkyum Kim, Sang Woo Kim, Miyeon Park, and Jeongsoon Lee (KRISS, Korea)

[ThF1-3] [Invited] **10:10-10:35**

Toward Sustainability: Green CVD Approaches for Decarbonizing Semiconductor Fabs

Chulhwan Choi, Mingyo Byeon, Jingyu Park, Byeongsun Yoo, Dongjoon Myung, and Changsoo Lee (Samsung Electronics Co., Ltd., Korea)

[ThA2] Nanoscale Thin Film Deposition VII	
Session Date	November 13 (Thu.), 2025
Session Time	10:50-12:20
Session Room	Room A (Capri Room, 2F)

[ThA2-1] [Invited] **10:50-11:20**

Atomic Layer Deposition Process Development of Molybdenum Dioxide for the DRAM Capacitor Electrode Applications

Chaeyeong Hwang, Soo Min Yoo, and Woojin Jeon (Kyung Hee Univ., Korea)

[ThA2-2] [Invited] **11:20-11:40**

Optimization of Atomic Layer Deposition Chemistry Toward Advanced Semiconductor Applications

Woo-Jae Lee (Pukyong Nat'l Univ., Korea)

[ThA2-3] [Invited] **11:40-12:00**

Reactor-Scale Modeling and AI-Surrogate Approaches for Thin Film and Bulk Crystal Growth: Oxide ALD, Diamond MPCVD and SiC PVT

Seong-Min Jeong (KICET, Korea)

[ThA2-4] **12:00-12:20**

Improved Thermal Stability and Retention in Carbon-Doped $Ge_2Sb_2Te_5$-Based Phase-Change Random Access Memory

Jisu Park, Wooseong Son, Seung Min Kang, and Changhwan Choi (Hanyang Univ., Korea)

[ThB2] Etch Process Monitoring	
Session Date	November 13 (Thu.), 2025
Session Time	10:50-12:20
Session Room	Room B (Grand Ballroom 1, 2F)

[ThB2-1] [Invited] **10:50-11:20**

Development of an Endpoint Evaluation Sensor to Enhance Uniformity in Plasma Chamber Cleaning

Suyoung Jang, Dohyeon Kim, and Kyongnam Kim (Daejeon Univ., Korea)

[ThB2-2] **11:20-11:35**

Endpoint Detection of Plasma Etching in Small Open Area based on Feature Extraction and Trend Identification

Zimeng Wang (Eindhoven Univ. of Tech., The Netherlands), Jaehyun Kim, Sanghee Han (Sungkyunkwan Univ., Korea), Alp Akçay (Northeastern Univ., USA), Heeyeop Chae (Sungkyunkwan Univ., Korea), and Juseong Lee (Eindhoven Univ. of Tech., The Netherlands)

[ThB2-3] **11:35-11:50**

Quantitative Analysis of Radical Species in a Plasma Chamber Using RGA-Based Global Modeling

Seonghyeon Seo, Wonnyoung Jeong (Chungnam Nat'l Univ., Korea), Sijun Kim (LPP-CNRS, France), Youngseok Lee (Tokyo Electron Korea Ltd., Korea), Chulhee Cho, Inho Seong, Minsu Choi, Byeongyeop Choi, Woobeen Lee, Isak Lee, Dongki Lee, Wonkyun Park, Jinhyuk Jang, and Shinjae You (Chungnam Nat'l Univ., Korea)

[ThB2-4] **11:50-12:05**

On-Wafer Type Wireless Temperature Sensor for Cryogenic Etch Temperature Monitoring

Kwan Jae Lee (Myongji Univ. and Fine Semitech Corp., Korea), Jae-Hwan Kim, Jaewon Oh (Fine Semitech Corp., Korea), and Sang Jeen Hong (Myongji Univ., Korea)

[ThB2-5] **12:05-12:20**

Fault Detection in Plasma Processes Using Optical Emission Spectroscopy with Recurrent Neural Networks-Based Autoencoder

Jaehyeon Kim, Eunchong Park, and Heeyeop Chae (Sungkyunkwan Univ., Korea)

[ThC2] Advanced Metrology & inspection, Process diagnostics & control, and Yield management VI	
Session Date	November 13 (Thu.), 2025
Session Time	10:50-12:30
Session Room	Room C (Grand Ballroom 3, 2F)

[ThC2-1] [Invited] **10:50-11:20**

Data-Driven Plasma Science-based Plasma Etching Process Design in OLED and Semiconductor Mass Productions Referring to PI-VM

Seolhye Park, Jaegu Seong, Yoona Park (Samsung Display Co., Ltd., Korea), Haneul Lee, Namjae Bae, Ji-Won Kwon, and Gon-Ho Kim (Seoul Nat'l Univ., Korea)

[ThC2-2] [Invited] **11:20-11:50**

Advances in Plasma Diagnostics for Process Chamber Monitoring and Characterization: Microwave Diagnostics

Dae-Woong Kim (KIMM, Korea), SangHo Lee, InYong Park, GeonWoong Eom (KIMM and Chungnam Nat'l Univ., Korea), ShinJae You (Chungnam Nat'l Univ., Korea), Min Hur, and WooSeock Kang (KIMM, Korea)

[ThC2-3] **11:50-12:10**

Photon Momentum Induced Particle Extraction in the Low-Pressure Plasma

Jun-Hyung Park and Hyo-Chang Lee (Korea Aerospace Univ., Korea)

[ThC2-4] **12:10-12:30**

Development of Microwave Patch Antenna Sensor for Plasma Process Monitoring

Gwang-Seok Chae (Korea Aerospace Univ. and KRISS, Korea), Hee-Jung Yeom (KRISS, Korea), Min-Young Yoon (KFE, Korea), Eun-Seok Choe (KRISS and Chungnam Nat'l Univ., Korea), Jung-Hyung Kim (KRISS, Korea), and Hyo-Chang Lee (Korea Aerospace Univ., Korea)

[ThD2] Alternative Lithography	
Session Date	November 13 (Thu.), 2025
Session Time	10:50-12:30
Session Room	Room D (Sidney Room, 2F)

[ThD2-1] [Invited] **10:50-11:10**

Large Scaled Metasurface Design and Fabrication for Terahertz Electromagnetic Wave Modulation and Their Applications

Minah Seo (Sogang Univ., Korea)

[ThD2-2] [Invited] **11:10-11:30**

Dynamic IR Beam Steering and Switching with Active Metasurfaces

Min Seok Jang (KAIST, Korea)

[ThD2-3] [Invited] **11:30-11:50**

Nanopatterned Surfaces for Advanced Manipulation of Light

Soo Jin Kim (Korea Univ., Korea)

[ThD2-4] [Invited] **11:50-12:10**

Scalable Nanomanufacturing for Optical Metasurfaces

Inki Kim (Sungkyunkwan Univ., Korea)

[ThD2-5] [Invited] **12:10-12:30**

Unlocking the Optical Potential of MXenes: Discoveries in Plasmonics and Nonlinear Absorption

Myung-Ki Kim (Korea Univ., Korea)

[ThE2] Next-Generation Slurries and Pad Technologies	
Session Date	November 13 (Thu.), 2025
Session Time	10:50-12:30
Session Room	Room E (Sicily Room, 1F)

[ThE2-1] [Invited] 10:50-11:20

Molybdenum CMP: Aspects of Thermodynamics and Kinetics

Ungyu Paik, Taeseup Song, Ganggyu Lee, Sumin Hong, and Giha Lee (Hanyang Univ., Korea)

[ThE2-2] [Invited] 11:20-11:50

New Pad for High Rate and Longer Life in W Bulk CMP

Ja-Eung Koo, Jung-Jik Cho, Chang-Il Kim, NanRong Chiou, and Dave Hui (DuPont, USA)

[ThE2-3] [Invited] 11:50-12:10

A Novel CMP Slurry Systems for Next-Generation Semiconductor Fabrication

Jongchul Shin and Sanghyun Ryu (Dongjin Semichem Co., Ltd., Korea)

[ThE2-4] [Invited] 12:10-12:30

CMP: Enabling Advanced Packaging for the AI Era

Nandan Baradanahalli Kenchappa, Taketo Sekine, Swetha Barkam, Christopher Lai, Jianshe Tang, and Asheesh Jain (Applied Materials, USA)

[ThF2] Carbon Neutrality in Semiconductor Industry II	
Session Date	November 13 (Thu.), 2025
Session Time	10:50-12:25
Session Room	Room F (Panorama Room, 16F)

[ThF2-1] [Invited] **10:50-11:15**

Development of NF_3 Alternative Gas for Global Warming Potential Reduction

Wontae Noh, Woongbin Yim, Soo Namgoong, Sukhyun Hong, Sung Ryong Moon, Sangmin Lee, and Young Chul Choi (Wonik IPS, Korea)

[ThF2-2] [Invited] **11:15-11:40**

Improvement of PFC Gas Treatment Technology for Etching Using Catalysts and Its Additional Effects

Yongjin Kim, Sangyoon Kim, and Jongpil Yoon (ECO ENERGEN Co., Ltd., Korea)

[ThF2-3] [Invited] **11:40-12:05**

Case Study on the Demonstration of a White Plume Reduction Device (K-Industry)

Sang Woo Lee, Hyeong Kee Lee, and Seung Han Kwon (NURI PLAN Co., Ltd., Korea)

[ThF2-4] **12:05-12:25**

Low Temperature Etching of SiO_2 and Si_3N_4 Using Low Global Warming C_3F_6, C_3HF_5, and $C_3H_2F_4$

Sumin Park, Daeun Hong, Eunsu Lee, Minsung Jeon, and Heeyeop Chae (Sungkyunkwan Univ., Korea)

[P1] Poster Session I	
Session Date	November 11 (Tue.), 2025
Session Time	17:25-18:15
Session Room	Grand Ballroom 4, 2F

[P1-01]

Temperature-Dependent Growth Characteristics and Dopant Activation in In Situ Boron-Doped SiGe Epitaxy Treated by Nanosecond Laser Annealing

Minho Jeong (Yonsei Univ. and Samsung Electronics Co., Ltd., Korea), Dongmin Yoon, Jungwoo Kim, Seokmin Oh, Seonwoong Jung, and Dae-Hong Ko (Yonsei Univ., Korea)

[P1-02]

Tailoring Dielectric Properties of Liquid Crystal Polymer Films via Non-Solvent Induced Phase Separation and Molecular Alignment

Baekman Kim, Geunjung Lee (KAIST, Korea), Jongseok Kim (Chungnam Nat'l Univ., Korea), Tae Gyun Hong (KAIST, Korea), Yeongsik Kim, Hyungju Ahn (POSTECH, Korea), Yun Ho Kim (KRICT, Korea), Hyun You Kim (Chungnam Nat'l Univ., Korea), and Dong Ki Yoon (KAIST, Korea)

[P1-03]

Development of Measurement Techniques for Cocktail Precursors in Atomic Layer Deposition Using Hafnium Zirconium Precursors

Jaeuk Lim (KRISS and Hanyang Univ., Korea), Inseok Jeong, Chanjung Kim (KRISS and Univ. of Science and Tech., Korea), Seonjeong Maeng (KRISS, Korea), Jong-Man Kim (Hanyang Univ., Korea), and Ju-Young Yun (KRISS, Korea)

[P1-04]

Effect of Ion Bombardment on Ti and TiW Thin Films Deposited by RF Magnetron Sputtering under Low-Temperature Conditions

Changyeong Ji, Chiyun Bang, and Ju-Hong Cha (Gyeongsang Nat'l Univ., Korea)

[P1-05]

Effects of Pulse-Widths on Weight-Update Characteristics in Synaptic Thin-Film Transistors

Younggeon Ko, Jaeyeong Ryu, Jeongseok Pi, Danyoung Cha, and Sungsik Lee (Pusan Nat'l Univ., Korea)

[P1-06]

Influence of Operating Regions on Weight Linearity Characteristics in Synaptic Thin-Film Transistors

Jeongseok Pi, Jimin Shin, Heonju Lim, Danyoung Cha, and Sungsik Lee (Pusan Nat'l Univ., Korea)

[P1-07]

Induction of Tetragonal Phase Transition of HfO_2 through Capping Layer and Utilization of Atomic Layer Etching

Juhwan Jeong, Hyunju Jung, Hanbin Lee, Myungil Kim, Jiyeon Han, Duckhyeon Seo, Yiun Park (EGTM Co., Ltd., Korea), Jeongsoo Kim, Jaehyeon Yun, Woojin Jeon (Kyung Hee Univ., Korea), and Kyuho Cho (EGTM Co., Ltd., Korea)

[P1-08]

Ultrathin Gate Dielectrics for Extremely Flexible MOSFETs via Atomic Layer Deposition (ALD) Process

Chang-Hyeon Park and Yei-Hwan Jung (Hanyang Univ., Korea)

[P1-09]

Novel Hybrid Ligand Stabilized Niobium Precursors with High Thermal Stability for Atomic Layer Deposition of Nb_2O_5

Sunyoung Baik, Shinbeom Kim, Taeyoung Lee, Woongjin Choi, Sungjun Ji, Kunhee Kim, Yiun Park, Jiyeon Han, Hyunju Jung, and Kyuho Cho (EGTM Co., Ltd., Korea)

[P1-10]

Enhancing Topographical Selectivity in Atomic Layer Deposition of HfO_2 Thin Films for High Aspect Ratio Structures Using Vapor-Dosed Surface Protector

Jiwoo Oh and Woo-Hee Kim (Hanyang Univ., Korea)

[P1-11]

Materials and Coating Technology Trends for Next-Generation Semiconductor Etch Processes

Kang-Bin Bae, Ji-Hwan Yun, Sang-Young Jo, Dong-Ho Shin, Jae-Wook Choi, Min-Seob Jung, Min-Ju Jun, Seung-Young Oh, and Eun-Young Choi (Wonik QnC Corp., Korea)

[P1-12]

Impact of HfO_2 Spacer Engineering for High-Performance Ultra-Short Channel InGaZnO Vertical Thin-Film Transistors

Nayoung Jang (Kyunghee Univ., Korea), Jae-Wook Lee, Young-Ha Kwon, Nak-Jin Seong, Kyu-Jeong Choi (NCD Co., Ltd., Korea), and Sung-Min Yoon (Kyunghee Univ., Korea)

[P1-13]

Unveiling Geometry Dependences for Vertical-Stack Configuration of Planar- and Vertical-Channel TFTs with Distinctive Single InGaZnO Active Layer

Ji-Won Kang (Kyung Hee Univ., Korea), Chi-Sun Hwang (ETRI, Korea), and Sung-Min Yoon (Kyung Hee Univ., Korea)

[P1-14]

A Novel Mesa-Type Vertical 2T0C DRAM Cell for High-Density Monolithic 3D Integration with Superior Write Speed and Reliable Data Retention

Kyung Min Kim, Ji Won Kang, and Sung Min Yoon (Kyung Hee Univ., Korea)

[P1-15]

Lateral Capacitive Coupling in an Atomic-Layer Deposited HfO_2-Gated InGaZnO Transistors Enabling Spatiotemporal Synaptic Function

Hyunsik Woo and Sung-Min Yoon (Kyung Hee Univ., Korea)

[P1-16]

The Study of Molybdenum Oxidation for Applications of DRAM Devices

Kyong Min Kim, Byeong Hyeon Kang, Seok Nam Ko, Seok Jun Han, Tae Wan Lee, and Jin Tae Noh (Wonik IPS, Korea)

[P1-17]

High-Performance In_2O_3 Thin-Film Transistors via Sputtering Power Modulation and Al_2O_3 Interface Control Layer Optimization

Se-Hyun Chun and Sung-Min Yoon (Kyung Hee Univ., Korea)

[P1-18]

Interfacial-Defect Analysis in Morphotropic Phase Boundary $Hf_{1-x}Z_xO_2$ for Enhanced DRAM Capacitor Performance

Donghyeon Bae, Taehyeon Yoon, Minje Lee, Guno Kim, and Hyungtak Seo (Ajou Univ., Korea)

[P1-19]

Gallium-Free IAZO Channels by PEALD: Rationale and Cation-Ratio Tuning for Stable TFTs

Taehyeon Yoon, Hyunmin Dang, Ayoung Kim, Jiyea Nam, and Hyungtak Seo (Ajou Univ., Korea)

[P1-20]

Phase-Transition-Enabled Resistance-Switching in Lead-Free $Cs_{3-x}MA_xSb_2I_9$ Perovskite for Emerging Storage Class Memory Devices

Taehyeong Kim, Seongho Jo, Myung Hoe Kim, Yeonah Kim, Sangmin Lee, Youngjoon Yoo, and Youngpyo Jeon (Seoul Nat'l Univ., Korea)

[P1-21]

Electrical Characteristics and Reliability Evaluation of IGZO TFTs under Hydrogen Plasma Treatment and Thermal Stress

Taeyang Kim, Jiyoung Bang, Hyeonjeong Sun, Seungmin Choi, Seungjae Lee, Kyubin Hwang, Yeoeun Yun, Suhwon Choi, and Seung-Beck Lee (Hanyang Univ., Korea)

[P1-22]

Effect of H_2S Dosing Parameters on Growth and Crystallinity of Atomic Layer Deposited Grown SnS_2

Soohyun Yoon, TaeYoon Lee, Dowwook Lee, and Hyeongtag Jeon (Hanyang Univ., Korea)

[P1-23]

A SAM-Based Approach for Damage-Free Release of Ultrathin Silicon Devices from SOI Wafers

Sun Young Park and Yei Hwan Jung (Hanyang Univ., Korea)

[P1-24]

Catalyst-Engineered β-Ga_2O_3 Nanowire Photodetectors for Enhanced Solar-Blind UV Detection

Jung-Bok Lee, Min-Seok Jang, Hee-Jin Kim, Ju-Eun An, and Ho-Jun Lee (Pusan Nat'l Univ., Korea)

[P1-25]

Enhancement of Electrical and Structural Properties of $Hf_{0.5}Zr_{0.5}O_2$ Thin Films via Ar Plasma Surface Treatment

Jeonggwang Lee, Jaewook Lee, Hyun Woo Jeong, Hyojun Choi (Seoul Nat'l Univ., Korea), Young Yong Kim (POSTECH, Korea), and Min Hyuk Park (Seoul Nat'l Univ., Korea)

[P1-26]

Cycle Engineering of $Hf_xZr_{(1-x)}O_2$ Thin Films for Oxygen Vacancy Control and Enhanced Ferroelectric Reliability

Taehyung Kim, Dongchan Seo, Kiwon Yoon, Hyeonje Kim, and Jinsub Park (Hanyang Univ., Korea)

[P1-27]

The Influence of Annealing on Thermal Atomic Layer Deposition Indium Oxide Semiconductor Thin-Film Transistors

Kang Choi, Dong-Geun Kim, Su-Jin Sim, and Ji-Hoon Ahn (Hanyang Univ., Korea)

[P1-28]

Surface Inhibition of SiO_2 Atomic Layer Deposition by Silane Self-Assembled Monolayers with Varying Chain Lengths

Seo-Hyun Lee (Hanyang Univ., Korea), Jeong-Min Lee (Stanford Univ., USA), and Woo-Hee Kim (Hanyang Univ., Korea)

[P1-29]

Niobium Doping Effects on the Electrical Properties of Indium Oxide Thin Film Transistors Deposited by Atomic Layer Deposition

Su-Jin Sim, Dong Geun Kim, Kang Choi, and Ji-Hoon Ahn (Hanyang Univ., Korea)

[P1-30]

Improvement of Dielectric Constant and Leakage in TiO_2 Thin Films by Mg Doping Cycle Control

Taehyeon Kim, Seungwoo Lee, and Woojin Jeon (Kyung Hee Univ., Korea)

[P1-31]

Optimization of Gd Doping in HfO_2 Charge-Trap Layers for Wide-Window and Low-Voltage Operation in 3D V-NAND

Jonghyeok Lee, Jihun Nam (Kyung Hee Univ., Korea), Hansol Oh, Hanbyul Kim, Yongjoo Park (SK Trichem Co., Ltd., Korea), and Woojin Jeon (Kyung Hee Univ., Korea)

[P1-32]

Ultra-Thin La_2O_3 Interfacial Layer for TDDB Lifetime Extension in HZO Ferroelectric Devices

Hyeon-Cheol Jeong, Kyung-Soo Park, Yoon-Seok Lee, Yeon-Woo Choi, Sang-Myun Lim, Ji-Hoon Choi, Tae-Suk Kim, and Changhwan Choi (Hanyang Univ., Korea)

[P1-33]

Optoelectronic-Synaptic Properties of Phototransistors Using Heterojunctioned ReS_2/MoS_2 Crystals Synthesized via Chemical Vapor Deposition

Dong Geun Kim, Seung Won Lee, and Ji-Hoon Ahn (Hanyang Univ., Korea)

[P1-34]

Comparison of Silane-Based Small Molecule Inhibitors for Enhanced Chemoselectivity in Area-Selective ALD

Eun Chong Cho (KRICT and Sungkyunkwan Univ., Korea), Jae Hun Hwang (KRICT, Korea), Jee-Eun Choi (Seoul Nat'l Univ., Korea), Jung Hoon Lee (KRICT, Korea), Won Bo Lee (Seoul Nat'l Univ., Korea), and Youngkwon Kim (KRICT, Korea)

[P1-35]

Nanoscale Thin-Film Deposition via Evaporation Point Source

Jae-hun Jung, Su-Young Cha, Jae-Young Lee, Seung-In Woo, and Soo-Bin Jeong (ALPHAPLUS Co., Ltd., Korea)

[P1-36]

Fabrication of High-Performance P-Type TFTs Using SnO Thin Films grown by Atomic Layer Deposition with a Novel Sn Precursor

Sol-Hee Jo (KRICT and Hanyang Univ., Korea), Ji-min Seo, Bo-Keun Park (KRICT, Korea), Jin-Seong Park (Hanyang Univ., Korea), and Jung-Hoon Lee (KRICT, Korea)

[P1-37]

Effect of Hydrogen Plasma Parameters on Amorphous Carbon Thin Film Growth in CBr_4 PEALD Process

Yeong-Su Choi, Hak-Rim Lee, and Ju-Hong Cha (Gyeongsang Nat'l Univ., Korea)

[P1-38]

Defect-Free Gap Filling of SiO_2 Achieved by Bias-Pulsed and VHF Plasma Techniques

Da Hun Ko, Seon Jae Jung, Ji Eun Kang, Hye Won Han, Si Yeon Kim, Ga hee Oh, and Geun Young Yeom (Sungkyunkwan Univ., Korea)

[P1-39]

Development of Hybrid-ALD Process for Ultra-Thin TiO_2 Hardmask Films in Advanced Semiconductor Etching and Patterning

Hyuk-Min Kwon and Se-Hun Kwon (Pusan Nat'l Univ., Korea)

[P1-40]

Low-Temperature Lateral Growth of Tellurium Using Atomic Layer Deposition for High-Performance p-Type Thin-Film Semiconductors

Dai Cuong Tran, Hee Seo Kim, and Myung Mo Sung (Hanyang Univ., Korea)

[P1-41]

Evaluation of the Characteristics of PtRu Bimetallic Alloy Thin Film for PMOS Gate Electrodes Deposited by Atomic Layer Deposition

Jae-Hyun Kim, Hyun-Jae Woo (Pusan Nat'l Univ., Korea), Kwang-Ho Kim, and Se-Hun Kwon (Pusan Nat'l Univ. and Global Frontier Research Center, Korea)

[P1-42]

Atomic Layer Deposition Assisted Double Patterning Lithography

Seo-Jun Lee and Se-Hun Kwon (Pusan Nat'l Univ., Korea)

[P1-43]

Effect of Substrate Pre-Treatment on the Growth and Properties of SnS Thin Films by Atomic Layer Deposition

Dowwook Lee and Hyeongtag Jeon (Hanyang Univ., Korea)

[P1-44]

Plasma-Assisted MLD of Thermally Stable Low-k SiONC Thin Films with Tetra-Isocyanate-Silane and Phloroglucinol

Gi-Beom Park, Hae Lin Yang, Ji Min Kim, Hyolim Jung, Jin-Seong Park (Hanyang Univ., Korea)

[P1-45]

High-Precision Microchip Transfer via Optimized Blister-Driven LIFT Process

Seong Ryu, Do Young Kim, and Seoung-Ki Lee (Pusan Nat'l Univ., Korea)

[P1-46]

Optoelectrical Properties of 3D Porous Graphene/Silicon Schottky Diode

Hong Gun Kim, Hee Ra Lee (Pusan Nat'l Univ., Korea), Sukang Bae (KIST, Korea), and Seoung-Ki Lee (Pusan Nat'l Univ., Korea)

[P1-47]

Non-Van Der Waals Layered Molybdenum Sulfide Wires with Perpendicular Layer Stacking and Tunable Interlayer Domains

Seo Hyeon Moon (Pusan Nat'l Univ., Korea), Hyeon-Sik Jang (Gyeongkuk Nat'l Univ., Korea), Sukang Bae (KIST, Korea), Jong-Seong Bae (KBSI, Korea), and Seoung-Ki Lee (Pusan Nat'l Univ., Korea)

[P1-48]

Metal-Anchored Graphene Composite for Efficient Heat Dissipation in Flexible Electronic Devices

Geonguk Kim (Pusan Nat'l Univ., Korea), Tae-Wook Kim (Jeonbuk Nat'l Univ., Korea), Sukang Bae (KIST, Korea), and Seoung-Ki Lee (Pusan Nat'l Univ., Korea)

[P1-49]

Permanent Strain Engineering in MoS_2 via Laser Processing for Improved Resistive Memory Devices

Gyu-been Kim, Hee Yoon Jang (Pusan Nat'l Univ., Korea), Sukang Bae (KIST, Korea), and Seoung-Ki Lee (Pusan Nat'l Univ., Korea)

[P1-50]

Enhanced Growth Stability of TiO_2 and SnO_2 Deposited by Liquid Injection Atomic Layer Deposition

Ji-Won Jang, Soon-Kyeong Park (Ajou Univ., Korea), Hee-Sung Kang (MKP Inc., Korea), and Il-Kwon Oh (Ajou Univ., Korea)

[P1-51]

BTBAS, BDEAS, and NSi-01: A Comparative Evaluation for VHF PE-ALD of Silicon Nitride

Yea-Ji Kim, Young-Jin Lim, Min-Jeong Rhee (Ajou Univ., Korea), Ngoc Le Trinh, Bonwook Gu, Youngho Kang (Incheon Nat'l Univ., Korea), Jae Hack Jeong (CN1 Co., Ltd., Korea), Han-Bo-Ram Lee (Incheon Nat'l Univ., Korea), and Il-Kwon Oh (Ajou Univ., Korea)

[P1-52]

Anisotropic Wet-Etching Enabled Transfer Printing of Single-Crystal Silicon MOSFETs for Flexible Electronics

Seol Ahn and Yei Hwan Jung (Hanyang Univ., Korea)

[P1-53]

Engineering of Thin Film for Flexible CTF Device

Beomhee Park, Changhan Kim, and Yei Hwan Jung (Hanyang Univ., Korea)

[P1-54]

Synthesis of Single-Crystal Cobalt and Copper Nanowires for BEOL Interconnect

Jae Wook Lee and Jae Yong Song (POSTECH, Korea)

[P1-55]

Void-Free Copper Electrochemical Filling of High Aspect-Ratio TGVs

Jun-Young Lee, Gi-Ho Jeong, Jae-Wook Lee (POSTECH, Korea), Van-Quang Nguyen, Ji-Hye Kim, Hyung-Sang Park (ISAC Research Inc., Korea), and Jae-Yong Song (POSTECH, Korea)

[P1-56]

Structural Design of Heat Sinks Microchannel for High Heat Flux Cooling of GaN HEMT Inverter Power Module

Joohyung Bang, Yonghyun Kim, Hoyoon Lee, and Hongyun So (Hanyang Univ., Korea)

[P1-57]

Development of PCM–PU Based Thermal Interface Materials for Efficient Thermal Management of Semiconductor Chips

Taegyeong Yeo, Joohyung Bang, and Hongyun So (Hanyang Univ., Korea)

[P1-58]

Effects of EMC Degradation on Viscoelastic Properties and Reliability in Power Semiconductor Packages

Se-Jun Park, Se-Min Lee, Hee-Ju Han (Hanyang Univ., Korea), Hyun-Woo Jung, Kyung-Woo Lee, Dae-Un Sung (Hyundai Motor Co., Ltd., Korea), and Hak-Sung Kim (Hanyang Univ., Korea)

[P1-59]

Study of Reliability of Redistribution Layers in Advanced Packaging: Electrochemical Migration Analysis and Parametric Electrochemical Modeling

Ho-Jin Lee, Jeong-Hyeon Baek (Hanyang Univ., Korea), Tae-Hoon Kim, Ji-Hye Shim (Samsung Electronics Co., Ltd., Korea), and Hak-Sung Kim (Hanyang Univ., Korea)

[P1-60]

Enhanced Short-Circuit Robustness of Embedded-SBD 4H-SiC MOSFETs via Ni Silicide Process Optimization

Junseong Kim (KENTECH, Korea), Sungmo Koo (EYEQ Lab Inc., Korea), and Hyemin Kang (KENTECH, Korea)

[P1-61]

CTF Based VMM on Chip Learning Architecture Method

Ho Jin Lee and Keewon Kwon (Sungkyunkwan Univ., Korea)

P1-62]

Analysis of Electrical Characteristics of 1.2 kV SiC MOSFETs with Embedded SBDs after Power Cycling Test

Gyuhyeok Kang (Kumoh Nat'l Inst. of Tech., Korea), Subin Choi, Jinwo Park, and Ogyun Seok (Pusan Nat'l Univ., Korea)

[P1-63]

A 1.2 kV SiC DMOSFET with Double Epitaxial for Reduced Specific On-Resistance

Seungwan Jung, Junki Jung, Dusan Baek, Seungri Yang, Gayeong Park, and Ogyun Seok (Pusan Nat'l Univ., Korea)

[P1-64]

Doping Profile Design for Simplifying Ion Implantation in the JFET Region of 1.2 kV SiC MOSFETs

Hee-Jin Kim, Ogyun Seok, and Ho-Jun Lee (Pusan Nat'l Univ., Korea)

[P1-65]

Comparison of GaN MPS Device Characteristics with Structural Variations

Ju Eun An and Ho-Jun Lee (Pusan Nat'l Univ., Korea)

[P1-66]

A New 4H-SiC Multi-Channel MOSFET with Additional Channel

Min-Seok Jang, Jungbok Lee (Pusan Nat'l Univ., Korea), Sung Mo Koo (EYEQ Lab Inc., Korea), and Ho-Jun Lee (Pusan Nat'l Univ., Korea)

[P1-67]

NFC-Based Smart Bicycle Grip Lock System

Yun-Ah Lee, Hong-geun Park, Ho-Jin Jang, and Seo-Yeong Kwon (Gyeongsang Nat'l Univ., Korea)

[P1-68]

Dynamic CGD for Hard-Switching in p-Gate GaN HEMTs

Taehyun Jang and Hyemin Kang (KENTECH, Korea)

[P1-69] **17:25-18:15**

Interfacial Evolution and Electrical Optimization of NiAl Ohmic Contacts on 4H-SiC by UV Laser Annealing at Varying Fluence Levels

Young Jae Park, Seongjun Kim, Kyeong-Keun Choi, Dae-Hwan Kang, Minjae Kang (POSTECH, Korea), Haseung Lee, Beomsang Kim, Chanho Hong, Sanghyun Ji (AP Systems, Korea), Sang-Mo Koo (Kwangwoon Univ., Korea), Byoung Hun Lee, and Hoon-Kyu Shin (POSTECH, Korea)

[P1-70]

Realization of 6-Inch 4H-SiC CMOS Inverters: Fabrication and Characterization

Seongjun Kim, Youngjae Park (POSTECH, Korea), Mathias Rommel (Fraunhofer IISB, Germany), Byoung Hun Lee, and Hoon-Kyu Shin (POSTECH, Korea)

[P2] Poster Session II	
Session Date	November 13 (Thu.), 2025
Session Time	15:55-16:45
Session Room	Grand Ballroom 4, 2F

[P2-01]

Tungsten CMP Using Fe-Substituted Silica

Jun Lee, Seungmin Yang, Sihyun Moon, Seoyeong Choi, and Kangchun Lee (Kwangwoon Univ., Korea)

[P2-02]

Engineering Molybdenum Oxidation States via Catalytic-Oxidation

Ilhwa Hong, Donggeun Park, Dongwon Kim, Young min Kim, Sung min Ji, Soo young Lee (Kwangwoon Univ., Korea), Ganghyeok Kim, Minseo Kim (Kyonggi Univ., Korea), and Kangchun Lee (Kwangwoon Univ., Korea)

[P2-03]

Suppression of PAA-Si_3N_4 Electrostatic Interaction under Low-pH Conditions for Defect Mitigation in Consecutive Gate Poly Open CMP

Donggeun Park, Ilhwa Hong, Dongwon Kim, Youngmin Kim, Sungmin Ji, Sooyoung Lee (Kwangwoon Univ., Korea), Ganghyeok Kim, Minseo Kim (Kyonggi Univ. Korea), and Kangchun Lee (Kwangwoon Univ., Korea)

[P2-04]

Coordination Chemistry Approaches for Copper Corrosion Control in CMP Process

Ganghyeok Kim (Kyonggi Univ., Korea), Donggeun Park, Ilhwa Hong, Dongwon Kim, Youngmin Kim, Sungmin Ji, Sooyoung Lee (Kwangwoon Univ., Korea), Minseo Kim (Kyonggi Univ., Korea), and Kangchun Lee (Kwangwoon Univ., Korea)

[P2-05]

Ce^{3+}-Enriched CeO_2 Nanoparticles via Hydrogen Reduction for Enhanced Silicate Adsorption

Giha Lee, Ganggyu Lee, Sumin Hong, Suntae Kim, Taeseup Song, and Ungyu Paik (Hanyang Univ., Korea)

[P2-06]

Surface Modification of Ceria Nanoparticles by Hydrogen Reduction for High-Efficiency CMP

Gimok Lee, Minhee Han, Seongmin Cho, Sangjun Chun, and Kangchun Lee (Kwangwoon Univ., Korea)

[P2-07]

Enhanced Polishing Performance Using Amine-Functionalized Silica Nanoparticles in CMP Slurry

Hyun-Ji Hwang (Hannam Univ., Korea), Min-Uk Jeon, Jea-Gun Park (Hanyang Univ., Korea), and Tae-Dong Kim (Hannam Univ., Korea)

[P2-08]

Development of High-Purity SiO_2 Nanoparticles via EDTA Chelation for Advanced CMP Applications

Ji-Soo Jung, Su-Ho Lee (Hannam Univ., Korea), Min-Uk Jeon, Jea-Gun Park (Hanyang Univ., Korea), and Tae-Dong Kim (Hannam Univ., Korea)

[P2-09]

Design of Highly Dispersed Colloidal Silica via Lattice Dissolution-Reprecipitation Replacement for Tungsten CMP

Yeongun Ju, Byeongjin Seo, Seungwon Ryu, and Seho Sun (Yeungnam Univ., Korea)

[P2-10]

Design of Copper with Ruthenium Barrier Film CMP Slurry by Difference of π-Backbonding Strength for Inhibition of Galvanic Corrosion

Byeongjin Seo, Yeongun Ju, Seungwon Ryu, and Seho Sun (Yeungnam Univ., Korea)

[P2-11]

Plasma Resistance Behavior of Y_2O_3–Al_2O_3–SiO_2 (YAS) Glass According to Sintering Conditions

Hwan-Yoon Jang and Hyun-Kwuon Lee (Kumoh Nat'l Inst. of Tech., Korea)

[P2-12]

Flexible Single-Crystalline Si TFTs with Anisotropic Etching

Ji-Woong Cho and Yei-Hwan Jung (Hanyang Univ., Korea)

[P2-13]

Integrative Analysis of Residual Stress in Multiple Si/SiGe Heteroepitaxial Layers Grown by RPCVD

Gustavo Panama, Sang-Hoon Kim, Subin Heo, Jeong Woo Park, and Dongwoo Suh (ETRI, Korea)

[P2-14]

Atomistic Insights into CF_x Radical Adsorption and Early-Stage Fluorocarbon Film Growth on Amorphous Si_3N_4 Surfaces

Mihyeon Jo and Sangheon Lee (Ewha Womans Univ., Korea)

[P2-15]

Etching Characteristics of Silicon Nitride Film Using NF_3/NH_3 Plasma in a Cryogenic Reactive Ion Etching System

In-Young Bang, Ga-Eun Hwang, Hyo-Jong Shin, Yoon-Joo Jeong, Gwang-Ho Lee, Chang-Hee Lee, In-Hyeok Kho, Yu-Jin Heo, Hee-Sam Cheon, Jae-Hyeon Kim, Ji-Hwan Kim, Ye-Jun Cheon, Tae In Ha, and Gi-Chung Kwon (Kwangwoon Univ., Korea)

[P2-16]

Two-Dimensional Channel Type Control via Plasma-Induced Edge Chemistry

Seokjin Ko and Jihyun Kim (Seoul Nat'l Univ., Korea)

[P2-17]

CMOS-Compatible TiN Edge Contacts to 2D TMD FETs via Atomic Layer Deposition

Seongyun Yang, Gyeonghwan Kim, and Jihyun Kim (Seoul Nat'l Univ., Korea)

[P2-18]

Characteristics of Low-Temperature Etching at $CF_4/CH_2F_2/Ar$ Plasma in Reactive Ion Etching System

Ye-Jun Cheon, Ji-Hwan Kim, In-Young Bang, Jae-Hyeon Kim, Gwang-Ho Lee, Chang-Hee Lee, Yoon-Joo Jeong, Hyo-Jong Shin, In-Hyeok Kho, Yu-Jin Heo, Hee-sam Cheon, Ga-Eun Hwang, Tae-In Ha, and Gi-Chung Kwon (Kwangwoon Univ., Korea)

[P2-19]

Visualization of Dissolution Mechanism for Ti and Si_3N_4 by Quantum Simulation

Youngsu Jang, Jeongjun Park, and Heung Bin Lim (RAM Technology Co., Ltd., Korea)

[P2-20]

Thermal Atomic Layer Etching of Mo for Next-Generation Interconnect Applications

Giyeong Shin and Taewook Nam (Sejong Univ., Korea)

[P2-21]

Investigation of Neutral Gas Heating Effects in an Inductively Coupled Ar/C4F8 Plasma

Seong-Jin Park, Su-Gi An, and Ju-Hong Cha (Gyeongsang Nat'l Univ., Korea)

[P2-22]

Investigation of Environmentally Friendly Gas Alternatives for High-Selectivity SiNx Etching with SiOx Masks

Hyun Bong Jang, Jong Woo Hong, Sung Hyun Kim, Hyung Jun Uh, Chan Ho Kim, Jun Won Jung, and Geun Young Yeom (Sungkyunkwan Univ., Korea)

[P2-23]

High Selectivity Isotropic Dry Etching of SiGe Using NF_3 Gas in a Remote Plasma

Eun Seok Yoon, Hong Seong Gil, Woo Chang Park, and Geun Yeong Yeom (Sungkyunkwan Univ., Korea)

[P2-24]

High Aspect Ratio Etching of SiO_2 with Low Global Warming C4F8 Isomers

Minha Ku, Daeun Hong, Minsung Jeon, and Heeyeop Chae (Sungkyunkwan Univ., Korea)

[P2-25]

Electron Density Prediction with Equivalent Circuit Model Using VI-Probe in Inductively Coupled Plasma Reactor

Eunchong Park, Jaehyeon Kim, Sanghee Han, Minseong Kim, and Heeyeop Chae (Sungkyunkwan Univ., Korea)

[P2-26]

Low Temperature Atomic Layer Etching of SiO_2 Using CH_2F_2/Ar Plasma in an Inductively Coupled Plasma System

In-Hyeok Kho, Ji-Hwan Kim, In-Young Bang, Jae-Hyeon Kim, Gwang-Ho Lee, Chang-Hee Lee, Hyo-Jong Shin, Yoon-Joo Jeong, Yu-Jin Heo, Hee-Sam Cheon, Ye-Jun Cheon, Ga-Eun Hwang, Tae In Ha, and Gi-Chung Kwon (Kwangwoon Univ., Korea)

[P2-27]

Progress and Performance of 6×12 EUV Photomask in RSP612 Carrier

Asheesh Nautiyal, Elson Tu, and Chiaho Chuang (Gudeng Precision Industry Co., Ltd., Taiwan)

[P2-28]

Controlled Stacking of Discrete Polymeric Line Patterns toward 3D Nanostructure Formation

Yu Na Kim (Pukyong Nat'l Univ., Korea), Eun Bin Kang (UNIST, Korea), Yu Jin Kang, Hee Rak Choi (Pukyong Nat'l Univ., Korea), and Woon Ik Park (Pukyong Nat'l Univ. and RanoM Co., Ltd., Korea)

[P2-29]

Lithography-Free Interdigitated Electrodes by Trench-Filling Patterning on Polymer Substrate for Alzheimer's Disease Detection

Junsoo Moon, Heewoo Jeon, Wonho Lee, and Joonsub Shim (Kwangwoon Univ., Korea)

[P2-30]

Lithography-Friendly Metasurfaces Design for Both Polarization and Wavelength Selective Filtering

Yu Geun Ki and Soo Jin Kim (Korea Univ., Korea)

[P2-31]

Large-Scale Inverse Design of Volumetric Freeform Metasurfaces via Automatic Differentiation for Angle-Robust Nanophotonic Color Routing

Jaehyun Jeon, Chanhyung Park, Doyoung Heo (KAIST, Korea), Haejun Chung, and Min Seok Jang (Hanyang Univ., Korea)

[P2-32]

$Ti_3C_2T_x$ MXene Plasmonic Resonators for Nonlocal-Effect-Enhanced SWIR Photodetection

Hyeju Kim, Jisung Kwon, and Myung-Ki Ki (Korea Univ., Korea)

[P2-33]

Energy Level Alignment of Colloidal Quantum Dots for Hole Injection in Comparison with Organic Materials

Subeen Kim, Kyung-Geun Lim, Jun Hyung Kim (KRISS and Univ. of Science and Tech., Korea), In-Hye Lee (KRISS, Korea), Mahnmin Choi, Daekwon Shin, Sohee Jeong (Sungkyunkwan Univ., Korea), and Jeong Won Kim (KRISS and Univ. of Science and Tech., Korea)

[P2-34]

Study on CVD and ALD Processes for Al_2O_3 Coatings of Plasma Process Equipment Parts

Inseok Jeong (KRISS and Univ. of Science and Tech., Korea), Jaeuk Lim (KRISS and Hanyang Univ., Korea), Chanjung Kim (KRISS and Univ. of Science and Tech., Korea), Seonjeong Maeng (KRISS, Korea), and Ju-Young Yun (KRISS and Univ. of Science and Tech., Korea)

[P2-35]

Plasmonic Nanoparticles Effect on Polaronic Signal Enhancement for P3HT based Organic Photovoltaic Device: A Comparative Study on Fullerene and Non-Fullerene Acceptors

Farris Hilmyafif Elli (KRISS and Univ. of Science and Tech., Korea), Taekyung Yu (Kyung Hee Univ., Korea), and JeongWon Kim (KRISS and Univ. of Science and Tech., Korea)

[P2-36]

Enhanced In-Plane Charge Transport in Dion–Jacobson Phase 2D Perovskites via Crystal Orientation Control

Doyoung Park (Yonsei Univ. and KRISS, Korea), Subeen Kim (KRISS and Univ. of Science and Tech., Korea), Kyung-Geun Lim (Yonsei Univ., KRISS, and Univ. of Science and Tech., Korea), Hyeonsam Goh (Yonsei Univ. and KRISS, Korea), Farris Hilmyafif Elli (KRISS and Univ. of Science and Tech., Korea), ChaeHo Shin (KRISS, Korea), Yeonjin Yi (Yonsei Univ., Korea), and Jeong Won Kim (Yonsei Univ., KRISS, and Univ. of Science and Tech., Korea)

[P2-37]

Improving the Accuracy of Subsurface CD Measurement in Scaled DRAM via AI-Based Inverse Modeling

Sanghee Han (Sungkyunkwan Univ. and SAIT, Korea) and Byoungdeog Choi (Sungkyunkwan Univ., Korea)

[P2-38]

Correlative Analysis of Oxygen Vacancies at the TiN/ZrO_2 Interface for MIM Capacitor Optimization

Yujeong Ahn, Seungwook Choi, and Ansoon Kim (KRISS and Univ. of Science & Tech., Korea)

[P2-39]

Robust Anomaly Detection Method for Advanced Packaging via Integration of PatchCore and DBSCAN

JiSeok Han (KITECH, Korea), Taell Kim, and WooYoung Jang (Dankook Univ., Korea)

[P2-40]

Metrology-Centric Elucidation of Ga_2O_3 Interlayer Band-Offset Engineering Enabling Low-Voltage Multilevel Storage in HZO FeCAPs

Guno Kim, Minwoo Kim, Hyunmin Dang, Kumar Mohit, and Hyungtak Seo (Ajou Univ., Korea)

[P2-41]

Fault Detection and Anomaly Monitoring System for PID-Based Flow Controllers in Semiconductor Manufacturing Equipment

Young-gi An and Jae-seong Jeong (KETI, Korea)

P2-42]

Giant Ferroelectric Response of $Hf_{0.5}Zr_{0.5}O_2$ (HZO) Capacitors by Robust Interface Engineering by MoN Electrodes Relative to W Electrodes

Minje Lee, Guno Kim, Minwoo Kim, Amir Sohail Khan, and Hyungtak Seo (Ajou Univ., Korea)

[P2-43]

Real-Time Temperature Monitoring of Wafer Chuck and Focus Ring at Ar Plasma

Ga-Eun Hwang, Jae-Hyeon Kim, Ji-Hwan Kim, In-Young Bang, Gwang-Ho Lee, Chang-Hee Lee, Hyo-Jong Shin, In-Hyeok Kho, Yoon-Joo Jeong, Yu-Jin Heo, Hee-Sam Cheon, Ye-Jun Cheon, Tae In Ha, and Gi-Chung Kwon (Kwangwoon Univ., Korea)

[P2-44]

Gas Ratio-Driven Passivation Film Deposition and Structural Evolution on Si and HfO_2 Substrates in Inductively Coupled C_4F_8/CH_4 Plasma

Woojin Park, Jonggu Han, Youngjun Yoon, and Se Youn Moon (Jeonbuk Nat'l Univ., Korea)

[P2-45]

3D Atomic Force Microscopy (AFM) for High-Precision 3D Metrology of Semiconductor and Display Devices

Hye Hyun Yu, Gyuho Han, Ji Hyun Kim, and Seung Yeon Sung (Park Systems Corp., Korea)

[P2-46]

In-Line AFM-Based Wafer Bonding Edge Profiling and Metrology

Seki Park, Jiwon Kim, Sooyeon Kim, and Seung Yeon Sung (Park Systems Corp., Korea)

P2-47]

Quantification of the Carbon-Containing Diatomic Radicals in Carbon-Based Inductively Coupled Plasma via Optical Absorption Spectroscopy

Youngjun Yoon, Woojin Park, and Se Youn Moon (Jeonbuk Nat'l Univ., Korea)

[P2-48]

Effects of UV/Ozone and Forming Gas Annealing Surface Treatments on the Minority Carrier Lifetime of Boron-Doped Silicon Wafers

Doyun Kim and Byoungdeog Choi (Sungkyunkwan Univ., Korea)

[P2-49]

Accurate Surface Oxide Vacancy Characterization in ALD HfO_2, ZrO_2, and HZO Films by XPS: Effect of Sputtering Method

Seungwook Choi, Yujeong Ahn, and Ansoon Kim (KRISS and UST, Korea)

[P2-50]

Predictive Indices for Rational Selection of CMP Pads Considering Scratch and Removal Rates

Hyeongmin Je, Hyun Jun Ryu (KAIST, Korea), Haesung A. Lee (Samsung Electronics Co., Ltd., Korea), and Sanha Kim (KAIST, Korea)

[P2-51]

Improvement of Bending Failure through Optimized Support Structure in 15nm DRAM Capacitors

Minhyung Kim (Sungkyunkwan Univ., and Samsung Electronics Co., Ltd., Korea), and Yunseok Kim (Sungkyunkwan Univ., Korea)

[P2-52]

Temporary Bonding Wafer TTV(Total Thickness Variation) Measurement for Each Bonding Layer Using FSH(Flying-Over Scanning Holography)

Cheon-Ya Seong and Hyung-Uk Kim (Cubixel Co., Ltd., Korea)

[P2-53]

Experimental Study of Particle Extraction Driven by Photon Momentum under Semiconductor Processing Conditions

Jun-Hyung Park and Hyo-Chang Lee (Korea Aerospace Univ., Korea)

[P2-54]

Development of Micro POU Gas Treatment System for PFCs and NOx Removal, with %O2 Controlled Combustion and Micro Urea-Injection

In Gweon Lim (Myongji Univ., Korea) and Han Su Kim (Clean Air Tech. Inc., Korea)

[P2-55]

A Study on CF_4 Decomposition and Removal Efficiency for Plasma-Wet Scrubber Systems

Jinwoo Oh, Kwiyoung Cho, Jingi Hong, Hyeonbin Kim, and Bumsuk Jung (Myongji Univ., Korea)

[P2-56]

Evaluation of Adsorption/Desorption Behavior and Its Correlation with Neutralization Efficiency in Precursor Vent Pipelines

Suyeon Kim, Seeun Kim (Myongji Univ., Korea), Sunghoon Baek, Sukyoung Hong (Samsung Electronics Co., Ltd., Korea), and Bumsuk Jung (Myongji Univ., Korea)

[P2-57]

DFT Simulation of Reaction Catalyst Process for Carbonyl Fluoride Synthesis

Han dock Song (RIST, Korea), Dea Hee Kim (SA LAB, Korea), Joon woo Kim, and Suk young Jung (RIST, Korea)

[P2-58]

RealGraphGPU^{Web}: A Convenient and Efficient GPU-Based Graph Analysis Platform on the Web

Jeong-Min Park, Myung-Hwan Jang, and Sang-Wook Kim (Hanyang Univ., Korea)

[P2-59]

Polarity-Dependent Threshold Switching in Toxic-Element-Free Binary Chalcogenide Selector-Only Memory Devices

Minju Kim, Saegyoung Song, Byeongchan Sim, Jeongwoo Seo, Dong Il Kim, Hui Gu Lee, Hyunwee Cho, and Jin Pyo Hong (Hanyang Univ., Korea)

[P2-60]

a-IGO (Indium-Gallium Oxide) GAA (Gate-All-Around) FETs for Future Stretchable Display

Tae Bong Kim, Seong Min Park, and Jae Kyeong Jeong (Hanyang Univ., Korea)

[P2-61]

High Performance Top-Gate α-IGZTO Thin-Film Transistor with SiO_2/Al_2O_3 Gate Insulator Stacks

Yena Kim and Jae Kyeong Jeong (Hanyang Univ., Korea)

[P2-62]

A Single-Ended PAM-4 Transmitter Front-End with ZQ-Based FFE

Geunyoung You, Yonghwa Kwon, and Jaeduk Han (Hanyang Univ., Korea)

[P2-63]

Switching Speed Enhancement of ECRAM via Electrolyte Engineering

Min-Jong Han, Jae-Kyeong Kim, Gwang-Ho Park, and Jinsub Park (Hanyang Univ., Korea)

[P2-64]

On the Optimization of the Electron Beam for Electron-Assisted Processing

Jae-Hwi Kim and Chin-Wook Chung (Hanyang Univ., Korea)

[P2-65]

Enhanced Electron Density in an Ultra-Low Electron Temperature Plasma via a Parallel Resonant Capacitor in an Inductively Coupled Plasma

Jeonghyun Lee and Chin-Wook Chung (Hanyang Univ., Korea)

[P2-66]

Impact of Tungsten-Induced Stress on Silicon Substrate Mobility in V-NAND Structures

Beomsu Kim and Yun-Heub Song (Hanyang Univ., Korea)