2023년 2월 14일(화), 09:00-10:45
Room A (에메랄드 I, 5층)

D. Thin Film Process Technology 분과
[TA1-D] Metallic Films

좌장: 김성근 책임연구원(한국과학기술연구원), 엄태용 임연구원(한국화학연구원)

TA1-D-1 **09:00-09:30** **[초청]**	**반도체 소자에서 구리 범프와 절연 고분자의 하이브리드 본딩** 심영주, 김한글, 황경석, 김주영 *울산과학기술원 신소재공학과*
TA1-D-2 **09:30-09:45**	**Molybdenum Carbide Thin Films Deposited by Thermal Atomic Layer Deposition Method under Thermal Decomposition of Mo Precursor** Min-Ji Ha, Jeong-Hun Choi, and Ji-Hoon Ahn *Department of Materials Science and Chemical Engineering, Hanyang University*
TA1-D-3 **09:45-10:00**	**Composition and Work Function Tuning of Plasma-enhanced Atomic-layer Deposited MoC_xN_y Films** Ji Sang Ahn, Wangu Kang, and Jeong Hwan Han *Department of Materials Science and Engineering, Seoul National University of Science and Technology*
TA1-D-4 **10:00-10:15**	**Modified Atomic Layer Deposition of Low-resistivity Molybdenum Carbide and Nitride Electrode for Next Generation DRAM Capacitor** Wangu Kang, Ji Sang Ahn, and Jeong Hwan Han *Department of Materials Science and Engineering, Seoul National University of Science and Technology*
TA1-D-5 **10:15-10:30**	**Atomic Layer Etching of Ruthenium Films with Organic Precursor** Jeongbin Lee, Jung-Tae Kim, and Woo-Hee Kim *Department of Materials Science and Chemical Engineering, Hanyang University*
TA1-D-6 **10:30-10:45**	**Growth Characteristics of Atomic Layer Deposited Iridium Thin Films with TICP and Oxygen** Hong Keun Chung[1,2], Tae Joo Park[2], and Seong Keun Kim[1,3] *[1]Electronic Materials Research Center, KIST, [2]Department of Materials Science and Chemical Engineering, Hanyang University, [3]KU-KIST Graduate School of Converging Science and Technology, Korea University*

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Room B (에메랄드 II+III, 5층)

D. Thin Film Process Technology 분과
[TB1-D] Ferroelectrics

좌장: 안지훈 교수(한양대학교), 이웅규 교수(숭실대학교)

TB1-D-1 **09:00-09:15**	**Improvement in Memory Performance of Dual-Switching Memory FET Introducing Gate Charge-Injection and Ferroelectric Layers** Yun-Ju Cho and Sung-Min Yoon *Department of Advanced Materials Engineering for Information and Electronics, Kyung Hee University*
TB1-D-2 **09:15-09:30**	**Dynamics of Domain Wall Motion and Polarization Switching Kinetics of Ferroelectric $Hf_{0.5}Zr_{0.5}O_2$ Thin Film on Different Electrode Materials** Dong Hyun Lee[1,2], Geun Hyeong Park[1,2], Jaewook Lee[1,2], Se Hyun Kim[1,2], and Min Hyuk Park[1,2] *[1]Department of Materials Science and Engineering, Seoul National University, [2]Inter-university Semiconductor Research Center, Seoul National University*
TB1-D-3 **09:30-09:45**	**Study of Ferroelectric TiN/$Hf_{0.5}Zr_{0.5}O_2$/TiN Capacitor Fabricated without Breaking Vacuum** Younghwan Lee[1,2], H. Alex Hsain[2], Shelby S. Fields[3], Samantha T. Jaszewski[3], Jon F. Ihlefeld[3], Gregory N. Parsons[4], and Jacob L. Jones[2] *[1]Department of Materials Science and Engineering, North Carolina State University, [2]Research Institute of Advanced Materials, Seoul National University, [3]Department of Materials Science and Engineering, University of Virginia, [4]Department of Chemical and Biomolecular Engineering, North Carolina State University*
TB1-D-4 **09:45-10:00**	**Investigation of the Ferroelectric Characteristics of $Hf_{1-x}Zr_xO_2$ Films Grown on Mo Electrodes with Various Thicknesses and Compositions** Ju Yong Park[1], Se Hyun Kim[1], Dong Hyun Lee[1], Kun Yang[1], Geun Hyeong Park[1], Younghwan Lee[2], and Min Hyuk Park[1,2] *[1]Department of Materials Science and Engineering, College of Engineering, Seoul National University, [2]Research Institute of Advanced Materials, Seoul National University*
TB1-D-5 **10:00-10:15**	**Ferroelectric Crystallization of Atomic Layer Deposited Ultrathin HfZrO Thin Films through Rapid Cooling Process** Yeon Je Yu[1], Geun Ha Oh[1], Ae Rim Choi[1], Ja-Yong Kim[2], Dohee Kim[2], and Il Kwon Oh[1] *[1]Department of Electrical and Computer Engineering, Ajou University, [2]Revolutionary Technology Center, R&D Division, SK Hynix*
TB1-D-6 **10:15-10:30**	**First Principles-derived Process Optimization to Control the Phase Fractions of Ferroelectric and Antiferroelectric $Hf_{1-x}Zr_xO_2$** Kun Hee Ye[1,2,3], Taeyoung Jeoung[1,2,3], Seungjae Yoon[1,2,3], Cheol Seong Hwang[2,3], and Jung-Hae Choi[1] *[1]Electronic Materials Research Center, KIST, [2]Department of Materials Science and Engineering, Seoul National University, [3]Inter-university Semiconductor Research Center, Seoul National University*
TB1-D-7 **10:30-10:45**	**IGZO Epitaxial Layer를 통한 $Hf_xZr_{1-x}O_2$ 박막의 저온 결정화 유도** 김성호[1], 고운산[2], 이가원[2], 이희덕[2], 조병진[1] *[1]한국과학기술원 전기 및 전자공학부, [2]충남대학교 전자공학과*

2023년 2월 14일(화), 09:00-10:45
Room C (사파이어 I, 5층)

A. Interconnect & Package 분과
[TC1-A] Emerging Interconnect

좌장: 김병준 교수(한국공학대학교), 정성엽 박사(삼성전자)

TC1-A-1 **09:00-09:15**	**NiAl Metallization for Advanced Interconnects** Kyeong-Youn Song[1], Seungjun Na[2], and Hoo-Jeong Lee[1,2] *[1]SKKU Advanced Institute of Nano Technology, Sungkyunkwan University, [2]Department of Smart Fab. Technology, Sungkyunkwan University*
TC1-A-2 **09:15-09:30**	**확산방지층 두께 및 열처리에 따른 Ru 배선의 계면신뢰성 평가 및 분석** 정대윤[1], 권우빈[1], 김윤혜[2], Yohei Kotsugi[3], 김가희[1], 김수현[4], 박영배[1] *[1]안동대학교 신소재공학부 청정에너지 소재기술연구센터, [2]영남대학교 신소재공학부, [3]Chemical Materials Development Department, TANAKA Precious Metals, [4]울산과학기술원 반도체 소재부품 대학원*
TC1-A-3 **09:30-09:45**	**Growth Study of Amorphous Carbon (a-C) Atomic Layer Deposition (ALD) for Memory Electrode Application** Tae Hyun Kim[1], Myoungsub Kim[2], Seungwon Park[1], Seung-min Chung[1], and Hyungjun Kim[1] *[1]School of Electrical and Electronic Engineering, Yonsei University, [2]SK Hynix*
TC1-A-4 **09:45-10:00**	**Deep Learning Segmentation Modeling for SiN, SiO_2 Film Deposition Process Defect of HBM** Intae Whoang, Jin Hee Hong, Dong Hee Son, and Jin Pyung Kim *SK Hynix*
TC1-A-5 **10:00-10:15**	**Highly Enhanced ALD TaN Barrier for Advanced BEOL Manufacturing** Junki Jang, Changhyun Kim, Yunki Choi, Jeonghoon Ahn, and Jahum Ku *Foundry Business, Samsung Electronics Co., Ltd.*
TC1-A-6 **10:15-10:45** **[초청]**	**Process Window of Interconnection Materials for Semiconductor and Display Applications** Yong-Sung Eom, Gwang-Mun Choi, Jiho Joo, Ki-Seok Jang, Jin-Heuk Oh, Chanmi Lee, In-Seok Kye, Yoon-Hwan Moon, Seok-Hwan Moon, and Kwang-Seong Choi *ETRI*

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Room D (사파이어 II+III, 5층)

J. Nano-Science & Technology 분과
[TD1-J] Functional Electronic Materials I

좌장: 왕건욱 교수(고려대학교), 강홍기 교수(DGIST)

TD1-J-1 **09:00-09:30** **[초청]**	**Photo-Thermal Effect Directed Molecular Self-Assembly** Hyeong Min Jin *Chungnam National University*
TD1-J-2 **09:30-09:45**	**Enhanced Energy Conversion Efficiency of 3D Complaint CNT-Based Thermoelectric Generators via Direct Ink Wiring Process and Optimizing the Heat Transfer Model** Seongkwon Hwang[1,2], Doojoon Jang[1], Byeongmoon Lee[1], Heesuk Kim[1], Jeonghun Kwak[2], and Seungjun Chung[1] *[1]Soft Hybrid Materials Research Center, KIST, [2]Department of Electrical and Computer Engineering, Seoul National University*
TD1-J-3 **09:45-10:00**	**Ferrocene-Alkanethiolate Molecular Transistor Junctions with Ion Gel Gating** Minwoo Song[1], Jongwoo Nam[1], Changjun Lee[1], Wang-Taek Hwang[1], Keehoon Kang[2], and Takhee Lee[1] *[1]Department of Physics and Astronomy, Seoul National University, [2]Department of Materials Science and Engineering, Seoul National University*
TD1-J-4 **10:00-10:15**	**Incorporating Perovskite Powder into Light-Emitting Diodes by Single Source Thermal Evaporation and Host-Dopant System** Myeong Jin Seol, Sa Rang Bae, and Soo Young Kim *Department of Materials Science and Engineering, Korea University*
TD1-J-5 **10:15-10:30**	**Surface-Doping-Induced Photodetection in InSe/Graphene Heterostructures** Hanbyeol Jang[1], Yongwook Seok[2], Yi Taek Choi[1], Sang-Hoo Cho[1], Kenji Watanabe[3], Takashi Taniguchi[3], and Kayoung Lee[2] *[1]School of Materials Science and Engineering, GIST, [2]School of Electrical Engineering, KAIST, [3]National Institute for Materials Science*
TD1-J-6 **10:30-10:45**	**Three-Terminal Vertical Synaptic Barristor based on Schottky Barrier Height Modulation with Organic Ferroelectric Materials** Seonggil Ham, Jingon Jang, Dohyoug Koo, Seonghoon Jang, Chul-Ho Lee, and Gunuk Wang *KU-KIST Graduate School of Converging Science and Technology, Korea University*

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Room E (루비 II, 5층)

H. Display and Imaging Technologies 분과
[TE1-H] Display and Imaging Technologies I

좌장: 하만륜 상무(DB하이텍), 전우진 교수(경희대학교)

TE1-H-1 **09:00-09:30** **[초청]**	**Recent Time-of-Flight Sensor Technologies for Real-Time 3D Sensing Applications** Min-Seok Shin, Jaehyung Jang, Kang-Bong Seo, and Chang-Rock Song *SK Hynix*
TE1-H-2 **09:30-10:00** **[초청]**	**신개념의 비공유결합 에피택시와 이의 유연소자 및 3차원 구조의 고집적 LED 디스플레이 제조 응용** 홍영준[1,2] *[1]세종대학교 나노신소재공학과, [2]세종대학교 GRI-TPC 국제공동연구센터*
TE1-H-3 **10:00-10:15**	**Pinning Voltage Model of Vertical Pinned Photodiode for Dual Pixel Image Sensor** Hyeonsoo Ahn and Jiwon Lee *Department of Photonics and Nanoelectronics, Hanyang University*
TE1-H-4 **10:15-10:30**	**Global Shutter CIS 제품의 Parasitic Light Sensitivity (PLS) Performance 개선 방법** Hee Jeong Hong, Shin Hwan Choi, Ki Young Kim, Chang Ki Lee, Jae Young Park, and Won Ho Lee *R&D Division, SK Hynix System IC*
TE1-H-5 **10:30-10:45**	**Intermixing Behavior in Solution-Processed Organic Light-Emitting Diodes** Beomsoo Chun[1,2,3], Suhyeon Lee[1,2,3], Woo Jin Jeong[4], Jun Young Kim[4], and Jeonghun Kwak[1,2,3] *[1]Department of Electrical and Computer Engineering, Seoul National University, [2]Inter-university Semiconductor Research Center, Seoul National University, [3]Soft Foundry Institute, Seoul National University, [4]Department of Semiconductor Engineering, Gyeongsang National University*

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Room F (스페이드 I, 6층)

K. Memory (Design & Process Technology) 분과
[TF1-K] Charge Trap Flash and PRAM

좌장: 권용우 교수(홍익대학교), 김수길 TL(SK 하이닉스)

TF1-K-1 **09:00-09:15**	**Analysis of Heavy Ion Induced Single-Event-Transients in Capacitorless DRAM based on a Polycrystalline Silicon Transistor** Sang Ho Lee, Jin Park, Geon Uk Kim, Ga Eon Kang, Jun Hyeok Heo, So Ra Jeon, and In Man Kang *School of Electronic and Electrical Engineering, Kyungpook National University*
TF1-K-2 **09:15-09:30**	**Application on Logic-in-Memory Circuit Using Floating Gate Field Effect Transistor with Tunneling Barrier** Sueyeon Kim[1], Sangki Cho[1], Insoo Choi[1], Myounggon Kang[2], Seungjae Baik[3], and Jongwook Jeon[1] *[1]Department of Electrical and Electronics Engineering, Konkuk University, [2]Department of Electrical and Electronics Engineering, Korea National University of Transportation, [3]Department of Electrical and Electronics Engineering, Hankyung University*
TF1-K-3 **09:30-09:45**	**Triplet Spike-Timing-Dependent Plasticity with Gate-tunable Three-terminal IGZO-Based FET Using Charge Trapping System** Jae Bum Jeon, Seong-In Cho, Geunyoung Kim, and Kyung Min Kim *KAIST*
TF1-K-4 **09:45-10:00**	**Large Memory Window with High Synaptic Performance of van der Waals Heterostructure Devices based on 2D Layered Ge_4Se_9** Gichang Noh[1,2], Hwayoung Song[2], Heenang Choi[3], Mingyu Kim[2], Saeyoung Oh[4], Dong Yeon Woo[1], Yooyeon Jo[1], Eunpyo Park[1], Min-kyung Jo[2], Eoram Moon[2], Yong-Sung Kim[5], Hu Young Jeong[4], Taek-Mo Chung[3], Kibum Kang[2], and Joon Young Kwak[1,6] *[1]Center for Neuromorphic Engineering, KIST, [2]Department of Materials Science and Engineering, KAIST, [3]Thin Film Materials Research Center, KRICT, [4]Graduate School of Semiconductor Materials and Devices Engineering, UNIST, [5]Low-Dimensional Material Team, KRISS, [6]Division of Science and Technology, University of Science and Technology (UST)*
TF1-K-5 **10:00-10:15**	**Emulation of Synaptic Behavior Using Pentagonal $PdSe_2$-Based Flash Memory** Eunpyo Park[1,2], Jae Eun Seo[3], Gichang Noh[1], Yooyeon Jo[1], In Soo Kim[1], Jongkil Park[1], Jaewook Kim[1], YeonJoo Jeong[1], Suyoun Lee[1], Inho Kim[1], Jong-Keuk Park[1], SangBum Kim[2], Jiwon Chang[3], and Joon Young Kwak[1,4] *[1]KIST, [2]Seoul National University, [3]Yonsei University, [4]University of Science and Technology (UST)*
TF1-K-6 **10:15-10:30**	**3차원 플래쉬 메모리의 이동도 향상을 위한 산화물 반도체 채널 도입** Yun Hee Lee[1], Tae In Lee[1], Eui Joong Shin[1], Seunghyun Oh[1], Sung Haeng Cho[2], Chanjong Ju[3], Jaeduk Lee[3], and Byung Jin Cho[1] *[1]School of Electrical Engineering, KAIST, [2]Oxide Electronics Research Team, ETRI, [3]Flash Product and Technology, Samsung Electronics Co., Ltd.*
TF1-K-7 **10:30-10:45**	**Computational Design of Quantum-bit Memory Devices Using Electrode-driven Silicon Quantum Dot Platform** Hoon Ryu *KISTI*

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Room G (스페이드 II+III, 6층)

K. Memory (Design & Process Technology) 분과
[TG1-K] RRAM and Synapse Device I

좌장: 김상범 교수(서울대학교), 정성엽 박사(차세대융합기술연구원)

TG1-K-1 **09:00-09:15**	**Trade-off of Synaptic Characteristics depending on Reservoir Layer in Oxygen Based ECRAM** Hyejin Kim, Jongseon Seo, Seojin Cho, Hyeonseok Sin, Sungyun Choi, and Daeseok Lee *Department of Electronic Materials Engineering, Kwangwoon University*
TG1-K-2 **09:15-09:30**	**Hardware Convolutional Kernels with Reliable $PrCaMnO_x$-Based RRAM Array for Neuromorphic Image Processing** Eunryeong Hong[1], Seonuk Jeon[2], Heebum Kang[1], Hyun Wook Kim[1], Nayeon Kim[2], Kibong Moon[3], and Jiyong Woo[1,2] *[1]School of Electronic and Electrical Engineering, Kyungpook National University, [2]School of Electronics Engineering, Kyungpook National University, [3]Department of Materials Science and Engineering, POSTECH*
TG1-K-3 **09:30-09:45**	**Simulation of Synaptic Characteristics of Memristor based on Interfacial Switching Mechanism** Sagar Khot, Dongmyung Jung, and Yongwoo Kwon *Department of Materials Science and Engineering, Hongik University*
TG1-K-4 **09:45-10:00**	**균일한 두께의 그래핀 옥사이드 저항변화층을 가지는 RRAM 기반 시냅스 소자** Hyun-Seok Choi[1], Suck Won Hong[2], and Yoon Kim[1] *[1]Department of Electrical and Computer Engineering, University of Seoul, [2]Department of Cogno-Mechatronics Engineering, Pusan National University*
TG1-K-5 **10:00-10:15**	**Transparent and Flexible Memristor with Stable Memory Characteristics by Utilizing CuI Deposition based on Low Temperature Solution** Yongin Cho, Arindam Bala, and Sunkook Kim *School of Advanced Materials Science and Engineering, Sungkyunkwan University*
TG1-K-6 **10:15-10:30**	**Fully Parallel, Highly Linear Synaptic Weight Update Enabled by Ion-limited CuO_x/HfO_x/WO_x ECRAM Synapse for Neuromorphic Systems** Heebum Kang[1], Hyun Wook Kim[1], Eunryeong Hong[1], Nayeon Kim[2], Seonuk Jeon[2], and Jiyong Woo[1,2] *[1]School of Electronic and Electrical Engineering, Kyungpook National University, [2]School of Electronics Engineering, Kyungpook National University*
TG1-K-7 **10:30-10:45**	**Implementation of Motion Detection by Highly Uniform Dynamic Memristor** Min Gu Lee, Hanchan Song, Gwangmin Kim, and Kyung Min Kim *Department of Materials Science and Engineering, KAIST*

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Room H (하트 I, 6층)

B. Patterning (Lithography & Etch Technology) 분과
[TH1-B] Lithography and Photoresist I

좌장: 이진균 교수(인하대학교), 정현담 교수(전남대학교)

TH1-B-1 **09:00-09:30** **[초청]**	**CAR Type EUV Resist RLS Trade-off Improvement** Jeongsik Kim, Minja Yoo, Hyungkun Lee, Myounghyun Hur, and Jaehyun Kim *Dongjin Semichem Co., Ltd.*
TH1-B-2 **09:30-10:00** **[초청]**	**Molecular Simulation of LER Formation in EUV Pattering: Causes and Method for Reduction** Su-Mi Hur *Department of Polymer Science and Engineering, Chonnam National University*
TH1-B-3 **10:00-10:15**	**Near-field Infrared Nanoscopic Study of HSQ Photoresist** Jiho Kim[1], Jin-Kyun Lee[2], Boknam Chae[1], Jinho Ahn[2], and Sangsul Lee[1] *[1]Pohang Accelerator Laboratory, POSTECH, [2]Department of Polymer Science and Engineering, Inha University, [3]Division of Materials Science and Engineering, Hanyang University*
TH1-B-4 **10:15-10:30**	**Analysis of Extreme Ultraviolet Pellicle and Pellicle Contaminations** Sang-Kon Kim *The Faculty of Liberal Arts, Hongik University*
TH1-B-5 **10:30-10:45**	**극자외선 펠리클용 나노미터 두께의 대면적 탄화 몰리브데넘 박막** 김용경[1,2], 김현미[1], 장성규[1], 김형근[1], 김슬기[1], 안진호[2,3] *[1]한국전자기술연구원 융복 합전자소재 연구센터, [2]한양대학교 신소재공학과, [3]EUV-IUCC (Industry-University Collaboration Center)*

2023년 2월 14일(화), 09:00-10:45
Room I (하트 II, 6층)

I. MEMS & Sensors Systems 분과
[TI1-I] Advanced MEMS & Sensor System I

좌장: 원상민 교수(성균관대학교), 서민호 교수(부산대학교)

TI1-I-1 **09:00-09:15**	**CNT/실리콘 이종접합 다이오드 가스센서의 암모니아 검출 특성분석** 김현규[1], 오세인[1], 황해철[1], 이호준[2], 배학열[1], 김정식[3], 김기현[1] *[1]전북대학교 전자정보공학부, [2]한국자동차연구원, [3]경상대학교 전기공학과*
TI1-I-2 **09:15-09:30**	**Demonstration of the pH Sensor-Embedded Neuromorphic Computing Block by Combining the pH Solution Receptor and the Amorphous InGaZnO Synaptic Transistor with a Floating Gate** Wonjung Kim, Donguk Kim, Sung-Jin Choi, Jong-Ho Bae, Dong Myong Kim, and Dae Hwan Kim *School of Electrical Engineering, Kookmin University*
TI1-I-3 **09:30-09:45**	**A pH Sensor based on Non-contact Sheet Resistance Measurement** Sang-Chan Park and Jae-Hyuk Ahn *Department of Electronics Engineering, Chungnam National University*
TI1-I-4 **09:45-10:00**	**High-Response Characteristics of Memristor-Based Gas Sensors Operated at Room Temperature** Doowon Lee and Hee-dong Kim *Department of Electrical Engineering and Convergence Engineering for Intelligent Drone, Sejong University*
TI1-I-5 **10:00-10:15**	**Characteristics of Pull-in-Voltage Variation by Fabrication Process Parameters of MEMS Capacitive Microphone Structure** Ju Chan Choi, Young Chan Choi, Hyung Suk Choi, Yun Peng Guan, Seung Han Ryu, Ji Do Kim, Kwang Woong Jeong, Kyu Seong Kim, Jang Hyun Kim, Min Sang Park, Gi Jun Park, Chan Woo Jo, Sungjin Oh, Young Heum Cho, Seok Jo Chang, Kwan Soo Kim, Tae Won Lee, and Jae Hee Lee *SK Hynix System IC*
TI1-I-6 **10:15-10:45** **[초청]**	**2D Rhenium Dichalcogenides: From Fundamental Properties to Recent Advances in Sensory Device Technology** Jo Hak Jeong, Dong Gyu Lee, Jung Woo Lee, Jin Taek Lee, Ho-Sung Lee, Hyeon-Sik Jang, and Keun Heo *Department of Semiconductor Science and Technology, Jeonbuk National University*

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Room J (하트 III, 6층)

Q. Metrology, Inspection, Analysis, and Yield Enhancement 분과
[TJ1-Q] Metrology, Inspection, Analysis, and Yield Enhancement I

좌장: 강상우 소장 (한국표준과학연구원), 정용우 TL(SK 하이닉스)

TJ1-Q-1 **09:00-09:30** **[초청]**	**Mechanical Characterization of Silicon Structure for Nanoscale Device Using Experimental Techniques** Jae-hyun Kim *SK Hynix*
TJ1-Q-2 **09:30-10:00** **[초청]**	**Co-enhancement of Sensitivity and Throughput of TSOM Using Adaptive Optics (AO) and Plenoptics** Jun Ho Lee[1], Ji Yong Joo[1], Ji Won Park[1], Junhee Jeong[2], and Oh-hyung Kwon[2] *[1]Kongju National University, [2]Nextin, Inc.*
TJ1-Q-3 **10:00-10:30** **[초청]**	**반도체 High Volume Manufacturing을 위한 검사/계측의 발전 방향** 손영훈, 박장익 *삼성전자 DS부문 메모리MI기술팀*

2023년 2월 14일(화), 09:00-10:30
Room K (다이아몬드 I, 6층)

S. Chip Design Contest 분과
[TK1-S] Chip Design Contest

좌장: 심재훈 교수(경북대학교), 차혁규 교수(서울과학기술대학교)

TK1-S-1 **09:00-09:15**	**An 81.2dB-SNDR Dual-Residue Pipeline ADC with a 2nd-Order Noise-Shaping Interpolating-SAR ADC** Jae-Hyun Chung and Seung-Tak Ryu *KAIST*
TK1-S-2 **09:15-09:30**	**Energy-Efficient Neural Network Processor Using All-Analog Computation** Jin-O Seo and SeongHwan Cho *KAIST*
TK1-S-3 **09:30-09:45**	**Single-Chip THz Imaging System with Trantenna** Sang Hyo Ahn[1], Minjae Kim[1], Myoung Kim[1], Yoo Bin Song[1], Min Woo Ryu[1,2], and Kyung Rok Kim[1,2] *[1]Department of Electrical Engineering, UNIST, [2]Ternell Corp.*
TK1-S-4 **09:45-10:00**	**A Spike Detection Based Wireless Neural Signal Recording System** Joonyoung Lim, Chae-Eun Lee, Yu-Ri Kim, Chieun Choi, and Yoon-Kyu Song *Graduate School of Convergence Science and Technology, Seoul National University*
TK1-S-5 **10:00-10:15**	**NAND 플래시 메모리와 SRAM이 융합된 NAS 메모리** 안지훈[1], 구민석[2], 김윤[1] *[1]서울시립대학교 전자전기컴퓨터공학과, [2]인천대학교 컴퓨터공학부*
TK1-S-6 **10:15-10:30**	**A 19.8W/29.6W Hybrid Step-Up/Down DC-DC Converter with 97.2% Peak Efficiency for 1-Cell/2-Cell Universal Battery Charger Applications** Seongil Yeo[1], Uyong Hyeon[1,2], Mingyeong Kim[1,2], and Kunhee Cho[1] *[1]Kyungpook National University, [2]Samsung Electronics Co., Ltd.*

2023년 2월 14일(화), 09:00-10:45
Room L (다이아몬드 II, 6층)

G. Device & Process Modeling, Simulation and Reliability 분과
[TL1-G] Ab-initio Simulation

좌장: 장지원 교수(연세대학교), 정창욱 교수(UNIST)

TL1-G-1 **09:00-09:30** **[초청]**	**First-Principles Simulations of Surface Chemical Reactions during Atomic Layer Deposition Processes** Bonggeun Shong *Department of Chemical Engineering, Hongik University*
TL1-G-2 **09:30-09:45**	**Reduction of Device Hamiltonian with Automatic Differentiation** Yeongjun Lim and Mincheol Shin *School of Electrical Engineering, KAIST*
TL1-G-3 **09:45-10:00**	**Finite-Bias First-Principles Calculations of Contact Resistance of Transition Metal Dichalcogenides** Tae Hyung Kim, Juho Lee, and Yong-Hoon Kim *School of Electrical Engineering, KAIST*
TL1-G-4 **10:00-10:15**	**Morphotropic Phase Transition Derived from Strain on $Hf_{0.5}Zr_{0.5}O_2$ Thin Film by TiN Electrode** Il Young Lee[1,2] and Jae Jun Yu[1,2] *[1]Center for Theoretical Physics, Seoul National University, [2]Department of Physics and Astronomy, Seoul National University*
TL1-G-5 **10:15-10:30**	**First-Principles Analysis on Surface Reaction Kinetics of Precursors for Atomic Layer Deposition of Hafnium Oxide** Jinwoo Lee and Bonggeun Shong *Department of Chemical Engineering, Hongik University*
TL1-G-6 **10:30-10:45**	**Silicon Passivation of Zigzag Graphene Edge Enabling Robust Spinpolarized Nanogap Quantum Transport** Seunghyun Yu, Juho Lee, and Yong-Hoon Kim *School of Electrical Engineering, KAIST*

2023년 2월 14일(화), 10:55-12:40
Room A (에메랄드 I, 5층)

D. Thin Film Process Technology 분과
[TA2-D] Memory Devices

좌장: 한정환 교수(서울과학기술대학교), 전우진 교수(경희대학교)

TA2-D-1 **10:55-11:25** **[초청]**	**Optimization of Self-rectifying Resistive Switching Memory for Application in Hole-etched Vertical Array Configuration** Hae Jin Kim *Department of Electronic Materials Engineering, The University of Suwon*
TA2-D-2 **11:25-11:40**	**Growth of High-k Rutile TiO_2 Thin Films on SnO_2 Layers Using Atomic Layer Deposition for DRAM Capacitors** Daeun Lim[1], Yeji Lee[2], Jonghyun Kim[2], Jina Kim[3], Jeong Hwan Han[3], Eun A Kim[2], Seong-Yong Cho[2], and Woongkyu Lee[1] *[1]Soongsil University, [2]Myongji University, [3]Seoul National University of Science and Technology*
TA2-D-3 **11:40-11:55**	**Study on Electro-thermal Behavior of Ovonic Threshold Switch by In Situ Thermal Imaging** Ju Hwan Park[1], Myeong Jun Jung[1], Ha Young Lee[1], Gun Hwan Kim[2], Min Kyu Yang[3], and Byung Joon Choi[1] *[1]Seoul National University of Science and Technology, [2]KRICT, [3]Sahmyook University*
TA2-D-4 **11:55-12:10**	**The Controlled Nitrogen Profile and Amount in SiO_2 Thin Film Using Remote Plasma Oxidation and Nitridation for DRAM Application** Moonsuk Choi[1], Chaewon Kim[1], Sunbum Kim[1], Ji Hyeon Sim[1], Hyeongjun Kim[1], Juhwan Kim[2], Junwoo Park[2], Pilseong Jeong[2], Sanghyun Ji[3], and Changhwan Choi[1] *[1]Division of Materials Science and Engineering, Hanyang University, [2]Software Team, AP Systems, [3]Semiconductor Equipment Department, AP Systems*
TA2-D-5 **12:10-12:25**	**Improved Energy Storage Performance of the Al-doped ZrO_2 with Anti-ferroelectricity for Electrostatic Capacitors** Seung Won Lee, Youkyoung Oh, Min Ji Jeong, and Ji-Hoon Ahn *Department of Materials Science and Chemical Engineering, Hanyang University*
TA2-D-6 **12:25-12:40**	**Crystallinity-dependent Low Current and Analog Switching Behavior of Ru Ion-Based Memristor** Ji Eun Kim[1,2], Jae Uk Kwon[1,2], Suk Yeop Chun[1,3], Young Geun Song[1], Doo Seok Jeong[4], Chong-Yun Kang[1,3], Seong Keun Kim[1,3], Sahn Nahm[2,3], and Jung Ho Yoon[1] *[1]Electronic Materials Research Center, KIST, [2]Department of Materials Science and Engineering, Korea University, [3]KU-KIST Graduate School of Converging Science and Technology, Korea University, [4]Division of Materials Science and Engineering, Hanyang University*

2023년 2월 14일(화), 10:55-12:40
Room B (에메랄드 II+III, 5층)

D. Thin Film Process Technology 분과
[TB2-D] Thin Films Analysis

좌장: 이응규 교수(숭실대학교), 김성근 책임연구원(한국과학기술연구원)

TB2-D-1 **10:55-11:25** **[초청]**	**Mono EELS Applications for Oxide and OLED and Atomic Level Imaging Denoising Method with Machine Learning** Jae Hyuck Jang[1,2] *[1]Center for Electron Microscopy Research, KBSI, [2]Graduate School of Analytical Science and Technology (GRAST)*
TB2-D-2 **11:25-11:55** **[초청]**	**Visualizing Ultrathin Films Using Advanced Hard X-ray Scattering Techniques** Seo Hyoung Chang *Department of Physics, Chung-Ang University*
TB2-D-3 **11:55-12:25** **[초청]**	**Probing Buried Interface with Hard XPS under Near-Total-Reflection Regime** Deok-Yong Cho[1,2] *[1]Institute of Photonics, Electronics and Information Technology, Jeonbuk National University, [2]Department of Physics, Jeonbuk National University*
TB2-D-4 **12:25-12:40**	**Measurement Technology of ALD Process based on Cocktail Precursor Replacing Super-cycle ALD Process** Hayeong Kim[1,2], Jiwon Park[1,3], Jaeuk Lim[1,3], SeonJeong Maeng[1], and Ju-Young Yun[1,4] *[1]Vacuum Materials Measurement Team, KRISS, [2]Nanomaterials Science and Engineering, University of Science and Technology (UST), [3]Department of Advanced Materials Engineering, Daejeon University, [4]Nanoscience and Technology, University of Science and Technology (UST)*

2023년 2월 14일(화), 10:55-12:40
Room C (사파이어 I, 5층)

A. Interconnect & Package 분과
[TC2-A] Advanced Package

좌장: 김병준 교수(한국공학대학교), 정성엽 박사(삼성전자)

TC2-A-1 **10:55-11:10**	**Improvement of T&R Side Defect Screen-ability based on Deep Learning** Myeong-Jae Jin, Tae-Woo Kim, Hwee-Jo Jeong, Kwon-Whan Han, and Woong-Sun Lee *WLP Technology, SK Hynix*
TC2-A-2 **11:10-11:25**	**패키지 방열 설계를 위한 열-전기 해석의 Co-Simulation** Bongmin Jeong[1,2], Aesun Oh[2], Gawon Lee[1], and Hyuncheol Bae[2,3] *[1]Chungnam National University, [2]ETRI, [3]University of Science and Technology (UST)*
TC2-A-3 **11:25-11:40**	**Effect of Cu Pad Dimension on Cu/SiCN Hybrid Bonding Process: A Finite Element Analysis Study** So-Yeon Park[1], Cha-Hee Kim,[1] Gwang-Sik Oh[2], Young Su Yun[3], Jiho Kang[3], Sarah Eunkyung Kim[2], and Won-Jun Lee[1] *[1]Department of Nanotechnology and Advanced Materials Engineering, Sejong University, [2]Department of Semiconductor Engineering, Seoul National University of Science and Technology, [3]SK Hynix*
TC2-A-4 **11:40-12:10** **[초청]**	**SMART Metallization for Reliable Neuromorphic Edge Computing** Hanwool Yeon *GIST*
TC2-A-5 **12:10-12:40** **[초청]**	**The Challenges of Molded Underfill Materials for High Bandwidth Memory (HBM)** Kyu Won Lee, Hyoung Chul Kwon, and Seung-Hee Jo *SK Hynix*

2023년 2월 14일(화), 10:55-12:40
Room D (사파이어 II+III, 5층)

J. Nano-Science & Technology 분과
[TD2-J] Functional Electronic Materials II

좌장: 우지용 교수(경북대학교), 진형민 교수(충남대학교)

TD2-J-1 **10:55-11:25** **[초청]**	**Transparent Bioelectronic Devices towards Multifunctional Electro-Optical Neural Interfaces** Hongki Kang *Department of Electrical Engineering and Computer Science, DGIST*
TD2-J-2 **11:25-11:55** **[초청]**	**Dynamic Soft Electronics: From Materials to Devices** Jiheong Kang *KAIST*
TD2-J-3 **11:55-12:10**	**Flexible Low-Voltage Field-Effect Transistors based on Multi-layered BTO/PVDF Composite Films** Se Yeon Park[1,2], Moonjeong Jang[1], and Ki-Seok An[1] *[1]KRICT, [2]Sungkyunkwan University*
TD2-J-4 **12:10-12:25**	**Colloidal Quantum Dots-Based Shortwave Infrared Photodetector** Se-Woong Baek *Department of Chemical and Biological Engineering, Korea University*
TD2-J-5 **12:25-12:40**	**Stretchable Color-sensitive Quantum Dot Nanocomposites for Shape-tunable Phototransistor Arrays** Ja Hoon Koo[1,2] and Dae-Hyeong Kim[1,3,4] *[1]Center for Nanoparticle Research, IBS, [2]Institute of Chemical Processes, Seoul National University, [3]School of Chemical and Biological Engineering, Seoul National University, [4]Department of Materials Science and Engineering, Seoul National University*

2023년 2월 14일(화), 10:55-12:40
Room E (루비 II, 5층)

H. Display and Imaging Technologies 분과
[TE2-H] Display and Imaging Technologies II

좌장: 박진성 교수(한양대학교), 진성훈 교수(인천대학교)

TE2-H-1 **10:55-11:25** **[초청]**	**New Fabrication Approaches of Oxide TFT for the Extended Applications** Jun Hyung Lim *Samsung Display Co., Ltd.*
TE2-H-2 **11:25-11:55** **[초청]**	**Skin-integrated Stretchable Haptic Displays** Beomhee Park, Jun Hee Lee, Jaeman Lim, Sun Hong Kim, and Yei Hwan Jung *Hanyang University*
TE2-H-3 **11:55-12:10**	**An Integrated Scan Driver Circuit Capable of Multi-output for Micro Light-Emitting Diode Displays** Eun Kyo Jung, Hwarim Im, and Yong-Sang Kim *Department of Electrical and Computer Engineering, Sungkyunkwan University*
TE2-H-4 **12:10-12:25**	**Device Characterization of Mesa-Shaped Vertical-Channel Transistors Using Atomic-Layer Deposited In–Ga–Sn–O Channel Layers** Shin Ho Noh[1], Hyo-Eun Kim[1], Young-Ha Kwon[2], Nak-Jin Seong[2], Kyu-Jeong Choi[2], and Sung-Min Yoon[1] *[1]Kyung Hee University, [2]NCD Co., Ltd.*
TE2-H-5 **12:25-12:40**	**Comparative Analysis of Charge Transport Characteristics of Metal-Oxide-Based Thin-Film Transistors with Low-k and High-k Gate Dielectrics** Sang-Joon Park and Tae-Jun Ha *Department of Electronic Materials Engineering, Kwangwoon University*

2023년 2월 14일(화), 10:55-12:40
Room F (스페이드 I, 6층)

K. Memory (Design & Process Technology) 분과
[TF2-K] RRAM and Synapse Device II

좌장: 김윤 교수(서울시립대학교), 정연주 박사(KIST)

TF2-K-1 **10:55-11:10**	**NbO_2 Selector Device with $Ge_2Sb_2Te_5$ Thermal Barrier for Low Off Current and Low Power Operation** Ohhyuk Kwon, Jangseop Lee, Kyumin Lee, Wooseok Choi, and Hyunsang Hwang *POSTECH*
TF2-K-2 **11:10-11:25**	**A Study on Metal-oxide Based ECRAM Device Characteristics of Selector-free Cross-point Array for DNN** Jeonghoon Son, Seungkun Kim, and Seyoung Kim *Department of Materials Science and Engineering, POSTECH*
TF2-K-3 **11:25-11:40**	**Demonstration of Analog Computing Using HfO_x-Based 1T1M Array Device** Eun Young Kim, Woon Hyung Cheong, Myeong Chan Ko, and Kyung Min Kim *KAIST*
TF2-K-4 **11:40-11:55**	**Self-Compliance Effects of the SiO_x/SiN_y Bilayer in Co CBRAM** Yeon-Joon Choi[1,2], Tae-Hyeon Kim[1,2], Kyungho Hong[1,2], Sungjoon Kim[1,2], Sungjun Kim[3], and Woo Young Choi[1,2] *[1]Department of Electrical and Computer Engineering, Seoul National University, [2]Inter-university Semiconductor Research Center, Seoul National University, [3]Division of Electronics and Electrical Engineering, Dongguk University*
TF2-K-5 **11:55-12:10**	**Optimization of Strong Physical Unclonable Function based on Passive Memristive Crossbar Array for Highly Reliable Operation** Jinwoo Park, Sangwook Youn, Kyu Ree Kim, Jungjin Lee, and Hyungjin Kim *Department of Electrical and Computer Engineering, Inha University*
TF2-K-6 **12:10-12:25**	**Optimal Weight-Splitting in Resistive Random Access Memory-Based Computing-in-Memory Macros** Choong Seok Song and Doo Seok Jeong *Division of Materials Science and Engineering, Hanyang University*
TF2-K-7 **12:25-12:40**	**RRAM Array with a Pristine Low Resistance State** Sungjoon Kim[1,2], Kyungho Hong[1,2], Tae-Hyeon Kim[1,2], Yeon Joon Choi[1,2], and Woo Young Choi[1,2] *[1]Department of Electrical and Computer Engineering, Seoul National University, [2]Inter-university Semiconductor Research Center, Seoul National University*

2023년 2월 14일(화), 10:55-12:40
Room G (스페이드 II+III, 6층)

K. Memory (Design & Process Technology) 분과
[TG2-K] RRAM and Synapse Device III

좌장: 김형진 교수(인하대학교), 곽준영 박사(KIST)

TG2-K-1 **10:55-11:10**	**Tuning Synaptic Characteristic of Battery-like Organic Synapse by Redox Additive** Sooyeon Narie Kay, Jiyoung Lee, and Kyung Min Kim *KAIST*
TG2-K-2 **11:10-11:25**	**Low-Power-Consumption Nb-Doped WSe_2 Memtransistor with Accelerated Synaptic Plasticity** Jina Bak, SeungGyu Kim, Jeechan Yoon, Jihyang Park, Bolim You, Myung Gwan Hahm, and Moonsang Lee *Department of Materials Science and Engineering, Inha University*
TG2-K-3 **11:25-11:40**	**Ultra-Low Power 2D Tellurene Synaptic Transistor for Neuromorphic Computing** Jeechan Yoon[1], Bolim You[1], Seung Hyun Nam[1], Ojun Kwon[2], Jina Bak[1], Jihyang Park[1], Byungjin Cho[2], Myung Gwan Hahm[1], and Moonsang Lee[1] *[1]Department of Materials Science and Engineering, Inha University, [2]Department of Advanced Materials Engineering, Chungbuk National University*
TG2-K-4 **11:40-11:55**	**RRAM Reset Voltage Control Using Forming Gas Annealing** Kyungho Hong[1,2], Sungjoon Kim[1,2], Tae-Hyeon Kim[1,2], and Woo Young Choi[1,2] *[1]Department of Electrical and Computer Engineering, Seoul National University, [2]Inter-university Semiconductor Research Center, Seoul National University*
TG2-K-5 **11:55-12:10**	**The Correlation between Frenkel Pair Dynamics and Device Properties of SiOx Based Resistive Random-access Memory** Taeheon Lee and Sungyeop Jung *Semiconductor Devices and Circuits Laboratory, Advanced Institute of Convergence Technology, Seoul National University*
TG2-K-6 **12:10-12:25**	**Molybdenum Based Low Power 1-Transistor, 1-Memristor Array Device for Homomorphic Encryption** Woon Hyung Cheong, Jae Hyun In, Jae Bum Jeon, and Kyung Min Kim *KAIST*
TG2-K-7 **12:25-12:40**	**Development of Artificial Neuron Using 2D hBN for Neuromorphic Applications** Yooyeon Jo[1], Gichang Noh[1], Eunpyo Park[1], Min Jee Kim[1], Yong Woo Sung[1], Dong Yeon Woo[1], Dae Kyu Lee[1], Da Gil Ryu[1], and Joon Young Kwak[1,2] *[1]KIST, [2]University of Science and Technology (UST)*

2023년 2월 14일(화), 10:55-12:40
Room H (하트 I, 6층)

B. Patterning (Lithography & Etch Technology) 분과
[TH2-B] Lithography and Photoresist II

좌장: 허수미 교수(전남대학교), 김정식 부장(동진쎄미켐)

TH2-B-1 **10:55-11:25** **[초청]**	**Importance of Rinse Solutions in Photolithographic Processes and Global Research Trends** Su Jin Kang *Youngchang Chemical Co., Ltd.*
TH2-B-2 **11:25-11:55** **[초청]**	**EUV Inorganic Resist Design Strategy** Hyun-Dam Jeong *Chonnam National University*
TH2-B-3 **11:55-12:10**	**High-k 소재 기반 High-NA EUV용 마스크 흡수 소재 연구** 정동민[1,3], 김연수[1,3], 조민선[2,3], 안진호[1,2,3] *[1]한양대학교 신소재공학과, [2]한양대학교 나노반도체공학과, [3]EUV-IUCC (Industry University Collaboration Center)*
TH2-B-4 **12:10-12:25**	**FI Targeting을 위한 DBM 계측 장비 Data 기반 EPE-Based Retarget Rule 자동 생성 기술 개발** Sung Ho Kim, Yeon Ah Shim, Kyung Eun Lee, and Cheolkyun Kim *SK Hynix*
TH2-B-5 **12:25-12:40**	**Adhesion Lithography on Fluoropolymers for Sub-100 nm Channel Gate-Tunable Diodes** Minseo Kim, Seongjae Kim, and Hocheon Yoo *Department of Electronic Engineering, Gachon University*

2023년 2월 14일(화), 10:55-12:40

Room I (하트 II, 6층)

I. MEMS & Sensors Systems 분과
[TI2-I] Advanced MEMS & Sensor System II

좌장: 김정현 교수(광운대학교), 원상민 교수(성균관대학교)

TI2-I-1 **10:55-11:25** **[초청]**	**Wireless, Skin-interfaced Pressure Sensors for Biomedical Application** Yoonseok Park *Department of Advanced Materials Engineering for Information and Electronics, Kyung Hee University*
TI2-I-2 **11:25-11:55** **[초청]**	**Fabrication of Curvy Devices and Fully Soft Electronics for Future Wearable Applications** Kyoseung Sim *Department of Chemistry, UNIST*
TI2-I-3 **11:55-12:10**	**A Wafer-scale Fabrication of Single CNT-bridged Field Effect Transistor Arrays with an Inkjet Printing Method for Biosensor Applications** Minhye Shin[1], Soohyun Park[2], Yoonhee Lee[2], and Hongki Kang[1] *[1]Department of Electrical Engineering and Computer Science, DGIST, [2]Division of Electronics and Information System, DGIST*
TI2-I-4 **12:10-12:25**	**NO_2 Gas Response Improvement of Gas Sensors by Adopting Oxygen Vacancy Controlled In_2O_3 Bilayer Sensing Films** Kangwook Choi[1,2], Gyuweon Jung[1,2], Seongbin Hong[1,2], Yujeong Jeong[1,2], Wonjun Shin[1,2], Jinwoo Park[1,2], Donghee Kim[1,2], Hunhee Shin[1,2], Woo Young Choi[1,2], and Jong-Ho Lee[1,2] *[1]Department of Electrical and Computer Engineering, Seoul National University, [2]Inter-university Semiconductor Research Center, Seoul National University*
TI2-I-5 **12:25-12:40**	**높은 Sensitivity와 넓은 감지 범위를 갖는 Pyramid-Sponge 구조의 Capacitive Type 압력 센서 소자 개발** Yeong Jin Joo[1,2], Yoomin Ahn[2], and Sung-Hwan Choi[1,2] *[1]KITECH, [2]HYU-KITECH Joint Department, Hanyang University*

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Room J (하트 III, 6층)

Q. Metrology, Inspection, Analysis, and Yield Enhancement 분과
[TJ2-Q] Metrology, Inspection, Analysis, and Yield Enhancement II

좌장: 강상우 소장(한국표준과학연구원), 정용우 TL(SK 하이닉스)

TJ2-Q-1 **10:55-11:10**	**X-Ray Fluorescence (ED-XRF) 및 X-Ray Diffraction (XRD) 측정 기술을 활용한 3D NAND Word Line W Recess 변화 계측 기술 개발** Young Chan Kim *Manufacturing Technology, SK Hynix*
TJ2-Q-2 **11:10-11:25**	**Continuous Angular Mueller Matrix Ellipsometry for Nanostructure Metrology** Daehoon Han, Garam Choi, Jinyong Kim, Young-Uk Jin, Jinseob Kim, Jaehwang Jung, Seungwoo Lee, Jinwoo Ahn, Taejoong Kim, Wookrae Kim, Myungjun Lee, and Changhoon Choi *FAB Equipment R&D Team [4], Mechatronics Research, Samsung Electronics Co., Ltd.*
TJ2-Q-3 **11:25-11:40**	**Improvement of Instrumentation Consistency Using DUV Filter In Spectroscopic Ellipsometry** 김유성, 정용우 *DRAM M^{14} Metrology Inspection Team, Manufacturing Technology, SK Hynix*
TJ2-Q-4 **11:40-11:55**	**이온빔 기반 패턴 및 검사장비를 위한 가스장 이온원의 개발** 박인용, 이하림, 타카시 오가와, 정해원, 윤달재, 김지수, 강훈, 황준혁 *한국표준과학연구원 첨단측정장비연구소 연구장비성능평가팀*
TJ2-Q-5 **11:55-12:10**	**In-situ Liquid Cell TEM Real-time Images Examine for Water Splitting Using g-C_3N_4 Semiconductor Hetereo-structures with Efficient Charge Separation** V. Navakoteswara Rao, Jung Ho Yoo, Yonghee Lee, Chi Won Ahn, and Jun-Mo Yang *Nano-Convergence Technology Division, NNFC*
TJ2-Q-6 **12:10-12:25**	**Dynamic Interferometry for 3D Inspection of Multi-stacked Thin Films** Young-Sik Ghim[1,2] and Hyug-Gyo Rhee[1,2] *[1]KRISS, [2]University of Science and Technology (UST)*
TJ2-Q-7 **12:25-12:40**	**Thermo-reflectance Microscope for Thermal Measurement of Microelectronic Circuit** Guesuk Lee and Byongjin Ma *KETI*

2023년 2월 14일(화), 10:55-12:40
Room K (다이아몬드 I, 6층)

F. Silicon and Group-IV Devices and Integration Technology 분과
[TK2-F] Ferroelectric Devices and Technology

좌장: 김명수 교수(UNIST), 권지민 교수(UNIST)

TK2-F-1 **10:55-11:10**	**Demonstration of Bias Scheme for Ferroelectric Field-Effect Transistor (FeFET) Based AND/NOR Array Operation** Shinhee Kim[1], Dong Keun Lee[2], Jae Yeon Park[1], and Sangwan Kim[1] *[1]Department of Electronic Engineering, Sogang University, [2]Department of Electrical and Computer Engineering, Ajou University*
TK2-F-2 **11:10-11:25**	**HZO 박막내 삽입층의 조건에 따른 강유전체 메모리 및 시냅스 특성 연구** Chulwon Chung[1], Yu Jeong Choi[2], Jin Ho Park[2], Se Hyeon Choi[2], and Changhwan Choi[2] *[1]Department of Energy Engineering, Hanyang University, [2]Division of Materials Science and Engineering, Hanyang University*
TK2-F-3 **11:25-11:40**	**Influence of Gate-Source/Drain Overlap Length on MFMIS FeFETs** Changha Kim[1,2], Dong-Oh Kim[1,2], Hyun-Min Kim[1,2], and Woo Young Choi[1,2] *[1]Department of Electrical and Computer Engineering, Seoul National University, [2]Inter-university Semiconductor Research Center, Seoul National University*
TK2-F-4 **11:40-11:55**	**First Demonstration of 3D Vertical Gate-All-Around (GAA) NAND Flash Memory Using ALD Ferroelectric HZO and IGO Channel** Boncheol Ku[1], Jae Seok Hur[2], Jae Kyeong Jeong[2], and Changhwan Choi[1] *[1]Division of Materials Science and Engineering, Hanyang University, [2]Department of Electronic Engineering, Hanyang University*
TK2-F-5 **11:55-12:10**	**Improvement of On/Off Current Ratio (I_{on}/I_{off}) in Hafnium-Based Ferroelectric Tunnel Junction (FTJ)** Seonggeun Kim, Hyungju Noh, Seungwon Go, and Sangwan Kim *Department of Electronic Engineering, Sogang University*
TK2-F-6 **12:10-12:25**	**Performance Analysis of Tri-layer Based Synaptic Devices according to the Deposition Sequence of HfO_2 and ZnO Materials with Different Oxygen Vacancy Ratios** Yeong-Jin An[1], Yan Han[1], Hyuk-Min Kwon[2], Sunil Babu Eadi[1], Hyeon Seung Lee[1], and Hi-Deok Lee[1] *[1]Chungnam National University, [2]Semiconductor Convergence Campus, Korea Polytechnics College*
TK2-F-7 **12:25-12:40**	**Sub-60-mV/decade Switching ZnO Hyper-FET Integrated With Ag/HfO_2/Ti/Pt-Based Threshold Switching Device** Juho Sung[1] and Changhwan Shin[2] *[1]Department of Electrical and Computer Engineering, Sungkyunkwan University, [2]School of Electrical Engineering, Korea University*

2023년 2월 14일(화), 10:55-12:25
Room L (다이아몬드 II, 6층)

G. Device & Process Modeling, Simulation and Reliability 분과
[TL2-G] TCAD Simulation and Reliability

좌장: 이재우 교수(고려대학교)

TL2-G-1 **10:55-11:25** **[초청]**	**Toward Realistic Plasma Process Modeling and Simulation** Jae-Hyeong Park[1], Won-Seok Chang[2], Hae-Sung You[1], Deuk-Chul Kwon[2], Jung Sik Yoon[2], and Yeon-Ho Im[1] *[1]School of Semiconductor and Chemical Engineering, Jeonbuk National University, [2]Plasma Technology Research Center, Korea Institute of Fusion Energy*
TL2-G-2 **11:25-11:40**	**FDSOI-Based Polarity Gate-Less Reconfigurable FET** Dong Hyeok Lee[1] and Jiwon Chang[2] *[1]Department of Materials Science and Engineering, Yonsei University, [2]Department of System Semiconductor Engineering, Yonsei University*
TL2-G-3 **11:40-11:55**	**Global Variability in 2-levels Stacked Nanowire Gate-All-Around Field Effect Transistor** Donghyun Kim[1,2], Sylvain Barraud[3], Gerard Ghibaudo[1], Christoforos Theodorou[1], and Jae Woo Lee[2] *[1]Université Grenoble Alpes, Université Savoie Mont Blanc, Grenoble INP, CNRS, IMEP-LAHC, [2]Department of Electronics and Information Engineering, Korea University, [3]Université Grenoble Alpes, CEA, LETI*
TL2-G-4 **11:55-12:10**	**Mechanism of Gate Oxide Breakdown for Highly Doped Carbon Transistor** N.-J. Kim, G.-J. Kim, S. Lee, N.-H. Lee, YC. Hwang, and HS. Kim *Memory Division, Samsung Electronics Co., Ltd.*
TL2-G-5 **12:10-12:25**	**Frequency-Dependent Kink Effect in Floating Body PD-SOI MOSFETs** Kyeongjun Kim and Seonghearn Lee *Department of Electronics Engineering, Hankuk University of Foreign Studies*

2023년 2월 15일(수), 09:00-10:30
Room A (에메랄드 I, 5층)

R. Semiconductor Software 분과
[WA1-R] Semiconductor Software

좌장: 안성용 교수(부산대학교), 강동현 교수(창원대학교)

WA1-R-1 **09:00-09:30** **[초청]**	**When Two Promising Fabless Startups Who Share the Same Design Principle Meet by Chance in the Era of Post Moore's Law** Eyee Hyun Nam *FADU Co., Ltd.*
WA1-R-2 **09:30-09:45**	**Modeling for Capacity Planners in Storage Systems Using Computational Storage Drives** Hongsu Byun and Youngjae Kim *Department of Computer Science and Engineering, Sogang University*
WA1-R-3 **09:45-10:00**	**메모리 분리 환경에서 자바 가상 머신 기반 인-메모리 응용 오버헤드 분석** Gyeonghwan Jung, Kyuri Park, Yeonwoo Jeong, and Sungyong Park *Department of Computer Science and Engineering, Sogang University*
WA1-R-4 **10:00-10:15**	**D-RDMALib: 분산 클러스터 응용에 적합한 인피니밴드 기반 RDMA 라이브러리** 정래원, 홍이삭, 김다솔, 길명선, 문양세 *강원대학교 컴퓨터공학과*
WA1-R-5 **10:15-10:30**	**Key-Value SSD를 위한 호스트와 협업 중복 제거 효용성 연구** KiHyun Kim and Youngjae Kim *Department of Computer Science and Engineering, Sogang University*

2023년 2월 15일(수), 09:00-10:30
Room B (에메랄드 II+III, 5층)

D. Thin Film Process Technology 분과
[WB1-D] Thin Films Transistors I

좌장: 박민혁 교수(서울대학교), 백인환 교수(인하대학교)

WB1-D-1 **09:00-09:15**	**Influence of RF Power in the Sputter-deposition of Amorphous InGaZnO Film on Transient Drain Current of Amorphous InGaZnO Thin-film Transistors** Da Yeon Lee, Jingyu Park, Sangwon Lee, Seung Joo Myoung, Sung-Jin Choi, Jong-Ho Bae, Dong Myong Kim, and Dae Hwan Kim *School of Electrical Engineering, Kookmin University*
WB1-D-2 **09:15-09:30**	**Interface Improvement in Thin Film Transistors of Atomic Layer Deposited High-k/SnO** Seung Ho Ryu[1,2], Jihoon Jeon[1,2], Taeyong Eom[3], Taek-Mo Chung[3], In-Hwan Baek[4], and Seong Keun Kim[1,2] *[1]KU-KIST Graduate School of Converging Science and Technology, Korea University, [2]Electronic Materials Research Center, KIST, [3]Thin Film Materials Research Center, KRICT, [4]Inha University*
WB1-D-3 **09:30-09:45**	**8-inch Wafer Scale a-IGZO TFTs Applicable to NO_2 Gas Sensors** Jeonghee Ko[1], Yongwoo Lee[1], Hanbin Lee[1], Yulim An[1], Hyo-In Yang[1], Dong Myong Kim[1], Dae Hwan Kim[1], Jong-Ho Bae[1], Min-Ho Kang[2], and Sung-Jin Choi[1] *[1]School of Electrical Engineering, Kookmin University, [2]Department of Nano-process, NNFC*
WB1-D-4 **09:45-10:00**	**Electro-Photo-Controlled InTiO Synaptic TFTs with Graded $AlSiO_x$ Gate Dielectric** Chohyeon Park[1,2] and Jung Wook Lim[1,2] *[1]ETRI, [2]University of Science and Technology (UST)*
WB1-D-5 **10:00-10:15**	**Comparative Study on Cation Composition-Dependent Contact Property of Thin-Film Transistors Using Atomic-Layer Deposited In-Ga-Zn-O Channel** Dong-Hee Lee[1], Young-Ha Kwon[2], Nak-Jin Seong[2], Kyu-Jeong Choi[2], Gyungtae Kim[3], and Sung-Min Yoon[1] *[1]Kyung Hee University, [2]NCD Co., Ltd., [3]NNFC*
WB1-D-6 **10:15-10:30**	**A Study on the Correlation and Mechanism between Hydrogen Introduction and Improvement of Electrical Properties in InGaZnO Thin Film Transistor** Hee Yeon Noh, Jung-Hwa Cha, June-Seo Kim, Myoung-Jae Lee, and Hyeon-Jun Lee *Division of Nanotechnology, DGIST*

2023년 2월 15일(수), 09:00-10:30
Room C (사파이어 I, 5층)

C. Material Growth & Characterization 분과
[WC1-C] Diamond and Compound Semiconductor

좌장: 김영덕 교수(경희대학교), 권순용 교수(UNIST)

WC1-C-1 **09:00-09:30** **[초청]**	**More Moore: Development of 2D Semiconductor Electrodes** 권순용 *울산과학기술원 신소재공학과*
WC1-C-2 **09:30-09:45**	**Wafer-scale Fabrication of Highly Ordered and High Quality GaN Nanorod Arrays for Optoelectronic Devices** Hyesu Ryu[1], Hak-Jong Choi[2], Hyungjun Lim[2], Sang Wan Ryu[3], and Sang Hyun Lee[1] *[1]School of Chemical Engineering, Chonnam National University, [2]Nano-Convergence Mechanical Systems Research Division, KIMM, [3]School of Physics, Chonnam National University*
WC1-C-3 **09:45-10:00**	**Ultra-high Vacuum MPCVD System for Quantum Technology Application** Geunho Yoo[1], Taemyung Kwak[1], Uiho Choi[1], Sanghun Han[1], Seongmin Kang[1], Seolyoung Oh[1], Kyuseok Yeon[2], and Okhyun Nam[1] *[1]Convergence Center for Advanced Nano Semiconductor, Tech University of Korea, [2]Yeon Science*
WC1-C-4 **10:00-10:15**	**Diamond in-situ Etching and High-purity Epitaxial Regrowth for High-performance Near-surface NV Using Ultra-high Vacuum Microwave Plasma Chemical Vapor Deposition System** Taemyung Kwak[1], Yong Soo Lee[2], Seongmin Kang[1], Seolyoung Oh[1], Sanghun Han[1], Uiho Choi[1], Geunho Yoo[1], Dongyeon Daniel Kang[2], Sangwook Han[2], and Okhyun Nam[1] *[1]Department of Nano and Semiconductor Engineering, Tech University of Korea, [2]Center for Quantum Information, KIST*
WC1-C-5 **10:15-10:30**	**Novel Methods for High-quality Heteroepitaxial Diamond Growth Technology** Uiho Choi[1], Hyeonu Kang[1], Jongbeom Lee[1], Yeonghwa Kwon[1], Taemyung Kwak[1], Joocheol Jeong[1], Geunho Yoo[1], Seong-Woo Kim[2], and Okhyun Nam[1] *[1]Department of Nano and Semiconductor Engineering, Tech University of Korea, [2]Orbray Co., Ltd.*

2023년 2월 15일(수), 09:00-10:30
Room D (사파이어 II+III, 5층)

J. Nano-Science & Technology 분과
[WD1-J] Neuromorphic Devices

좌장: 이철호 교수(고려대학교), 이관형 교수(서울대학교)

WD1-J-1 **09:00-09:30** **[초청]**	**Simultaneous Emulation of Synaptic and Intrinsic Plasticity Using a Memristive Synapse** Keon Jae Lee *Department of Materials Science and Engineering, KAIST*
WD1-J-2 **09:30-10:00** **[초청]**	**Energy-efficient Neuromorphic Systems Driven by Emerging Device Technologies** Hyun Wook Kim[1], Eunryeong Hong[1], Seonuk Jeon[2], Heebum Kang[1], Nayeon Kim[2], and Jiyong Woo[1,2] *[1]School of Electronic and Electrical Engineering, Kyungpook National University, [2]School of Electronics Engineering, Kyungpook National University*
WD1-J-3 **10:00-10:15**	**Uniform and Reliable Titanium Oxide Memristor Array for Efficient In-situ Hardware Neuromorphic Application** Jingon Jang[1], Sanggyun Gi[2], Byunggeun Lee[2], and Gunuk Wang[1,3,4] *[1]KU-KIST Graduate School of Converging Science and Technology, Korea University, [2]School of Electrical Engineering and Computer Science, GIST, [3]Department of Integrative Energy Engineering, Korea University, [4]Center for Neuromorphic Engineering, KIST*
WD1-J-4 **10:15-10:30**	**Optical Synaptic Properties of the TiO_2-Based Ternary Logic Transistors Using Ultra-thin Dielectric AlO_x Films** Jieun Kim[1,2] and Jung Wook Lim[1,2] *[1]ETRI, [2]University of Science and Technology (UST)*

2023년 2월 15일(수), 09:00-10:30
Room E (루비 II, 5층)

E. Compound Semiconductors 분과
[WE1-E] Compound Semiconductor I

좌장: 임유승 교수(세종대학교)

WE1-E-1 **09:00-09:15**	**Record $In_{0.8}Ga_{0.2}As$ Quantum-well HEMTs for 6G Applications** Wan-Soo Park[1], Hyeon-Bhin Jo[1], Hyo-Jin Kim[1], Su-Min Choi[1], Ji-Hoon Yoo[1], Hyeon-Seok Jeong[1], Takuya Tsutsumi[2], Hiroki Sugiyama[2], Hideaki Matsuzaki[2], Jae-Hak Lee[1], and Dae-Hyun Kim[1] *[1]School of Electronic and Electrical Engineering, Kyungpook National University, [2]NTT Device Technology Laboratories*
WE1-E-2 **09:15-09:30**	**High-speed and Low-voltage Operating Charge Trap Device based on InGaAs TFETs for Low-power Neuromorphic Application** Dae-Hwan Ahn[1], Suman Hu[1,2], Kyeol Ko[1], Donghee Park[1], Hoyung Suh[1], Gyu-Tae Kim[2], Jae-Hoon Han[1], Jin-Dong Song[1], and Yeon Joo Jeong[1] *[1]KIST, [2]Korea University*
WE1-E-3 **09:30-09:45**	**Explicit Thermal Resistance Model of Self-heating Effects of AlGaN/GaN HEMTs with Linear and Non-linear Thermal Conductivity** Surajit Chakraborty[1], Walid Amir[1], Ju-Won Shin[1], Ki-Yong Shin[1], Takuya Hoshi[2], Takuya Tsutsumi[2], Hiroki Sugiyama[2], Hideaki Matsuzaki[2], and Tae-Woo Kim[1] *[1]Department of Electrical, Electronic and Computer Engineering, University of Ulsan, [2]NTT Device Technology Laboratories, NTT Corporation*
WE1-E-4 **09:45-10:00**	**Investigation for Spatial Distribution of Oxide Trap Density by Low-Frequency Noise Characterization in β-Ga_2O_3 FinFET** Jae Wook Yoo[1], Hong Seung Lee[1], Hyeon Jun Song[1], Seongbin Lim[1], Jungsik Kim[4], Kihyun Kim[1], Jun-Young Park[3], Yang-Kyu Choi[2], and Hagyoul Bae[1] *[1]Jeonbuk National University, [2]KAIST, [3]Chungbuk National University, [4]Gyeongsang National University*
WE1-E-5 **10:00-10:15**	**Full Stepper-Based InP Double-Heterojunction Bipolar Transistors (DHBTs) with f_T & f_{max} ≥ 250 GHz** Hyeon-Seok Jeong[1,2], Yong-Hyun Kim[1], Jacob Yun[1], Ji-Min Beak[2], Ji-Hoon Yoo[2], Su-Min Choi[2], Wan-Soo Park[2], Hyo-Jin Kim[2], In-Geun Lee[2], Ted Kim[1], Jae-Hak Lee[2], Hyuk-Min Kwon[3], Seung Heon Shin[3], and Dae-Hyun Kim[2] *[1]QSI Inc., [2]Kyungpook National University, [3]Korea Polytechnics*
WE1-E-6 **10:15-10:30**	**5-levels-stacked $In_{0.53}Ga_{0.47}As$ MBCFETs with Regrown S/D Contacts** In-Geun Lee[1], Hyeon-Bhin Jo[1], Ji-Hoon Yoo[1], Hyunchul Jang[2], Minwoo Kong[2], Hyeon-Seok Jeong[1], Wan-Soo Park[1], Sang-Kuk Kim[3], Jae-Gyu Kim[3], Jacob Yun[3], Ted Kim[3], Jae-Hak Lee[1], Chan-Soo Shin[2], Kwang-Seok Seo[2], and Dae-Hyun Kim[1] *[1]Kyungpook National University, [2]KANC, [3]QSI Inc.*

2023년 2월 15일(수), 09:00-10:30
Room F (스페이드 I, 6층)

P. Device for Energy (Solar Cell, Power Device, Battery, etc.) 분과
[WF1-P] 에너지 하베스팅 및 에너지 저장

좌장: 박정웅 교수(가천대학교), 이재원 교수(강원대학교)

WF1-P-1 **09:00-09:30** **[초청]**	**Control of Defects and Thermoelectric Properties in N-type Bismuth Telluride Alloys** Seung-Hyub Baek *Center for Electronic Materials, KIST*
WF1-P-2 **09:30-09:45**	**Effects of Surface Ligand on the Thermoelectric Properties of the Colloidal Nanocrystal** Jeehyun Jeong[1,2,3], Juhyung Park[1,2,3], Jeonghan Song[1,2,3], and Jeonghun Kwak[1,2,3] *[1]Department of Electrical and Computer Engineering, Seoul National University, [2]Inter-university Semiconductor Research Center, Seoul National University, [3]Soft Foundry Institute, Seoul National University*
WF1-P-3 **09:45-10:00**	**Synergetic Effects of Fluorosulfate-Based Electrolyte Additive Developed for Lithium-ion Batteries Using Ultra Ni-rich (90%) Cathode Materials** Jimin Oh[1], Kwang Man Kim[1], and Sung You Hong[2] *[1]ETRI, [2]UNIST*
WF1-P-4 **10:00-10:30** **[초청]**	**Functionalized Dielectrics-Based Triboelectric Nanogenerators for Output Power Enhancement** Jae Won Lee *Kangwon National University*

2023년 2월 15일(수), 09:00-10:30
Room G (스페이드 II+III, 6층)

K. Memory (Design & Process Technology) 분과
[WG1-K] Ferroelectric Device

좌장: 강대웅 교수(서울대학교), 배종호 교수(국민대학교)

WG1-K-1 **09:00-09:30** **[초청]**	**Ferroelectric (Hf,Zr)O_2/Si Interface Engineering for Advanced Ferroelectric Field-Effect-Transistors** Se Hyun Kim[1,2], Hyun Woo Jung[1,2], Kun Yang[1,2], and Min Hyuk Park[1,2,3] *[1]Department of Materials Science and Engineering, Seoul National University, [2]Inter-university Semiconductor Research Center, Seoul National University, [3]Research Institute of Advanced Materials, Seoul National University*
WG1-K-2 **09:30-09:45**	**누설전류를 최소화 하기 위한 유무기 하이브리드 강유전성 유기 박막 트랜지스터 연구** 장효원[1], 이용주[1,2], Biswas Swarup[1], 김혁[1] *[1]서울시립대학교 전자전기컴퓨터공학부*
WG1-K-3 **09:45-10:00**	**Steep-Slope Non-Hysteric Ferroelectric Transistor Using Reversible Domain Wall Displacement** Song-Hyeon Kuk[1], Seungmin Han[2], Dong Hyun Lee[3], Bong Ho Kim[1], Joonsup Shim[1], Min Hyuk Park[3], Jae-Hoon Han[2], and Sang-Hyeon Kim[1] *[1]KAIST, [2]KIST, [3]Seoul National University*
WG1-K-4 **10:00-10:15**	**Ferroelectric Diode with Large On/Off Ratio and Robust Endurance by Microwave Annealing in W/IGZO/HZO/Pt Stack** LaeYong Jung, Seungyeol Oh, Hojung Jang, Kyumin Lee, and Hyunsang Hwang *POSTECH*
WG1-K-5 **10:15-10:30**	**Effect of Scandium Insertion into the Gate Stack of Ferroelectric Field-Effect Transistors** Bong Ho Kim[1], Song-Hyeon Kuk[1], Seong Kwang Kim[1], Joon Pyo Kim[1], Yoon-Je Suh[1], Jaeyong Jeong[1], Dae-Myeong Geum[1], Seung-Hyub Baek[2], and Sang Hyeon Kim[1] *[1]KAIST, [2]KIST*

2023년 2월 15일(수), 09:00-10:30
Room H (하트 I, 6층)

B. Patterning (Lithography & Etch Technology) 분과
[WH1-B] Advanced Etch Technology I

좌장: 채희엽 교수(성균관대학교)

WH1-B-1 **09:00-09:30** **[초청]**	**Control of Selective Si_3N_4 Etching for 3D NAND Manufacturing** Sangwoo Lim *Department of Chemical and Biomolecular Engineering, Yonsei University*
WH1-B-2 **09:30-10:00** **[초청]**	**Leading Edge HARC Etching Technology and Hurdles of Its Extension** Sung-Il Cho *Manufacturing Technology Center, Device Solutions, Samsung Electronics Co., Ltd.*
WH1-B-3 **10:00-10:15**	**Plasma Atomic Layer Etching of Molybdenum with Surface Fluorination and Ion Bombardment** Yongjae Kim[1], Hojin Kang[2], Heeju Ha[2], and Heeyeop Chae[1,2] *[1]SKKU Advanced Institute of Nanotechnology, Sungkyunkwan University, [2]School of Chemical Engineering, Sungkyunkwan University*
WH1-B-4 **10:15-10:30**	**Cyclic Etch Process Using Low-GWP Etchants** Sanghyun You[1,2] and Chang-Koo Kim[1,2] *[1]Department of Chemical Engineering, Ajou University, [2]Department of Energy Systems Research, Ajou University*

2023년 2월 15일(수), 09:00-10:30
Room I (하트 II, 6층)

O. System LSI Design 분과
[WI1-O] FPGA

좌장: 공병용 교수(공주대학교), 유호영 교수(충남대학교)

WI1-O-1 **09:00-09:15**	**FPGA 역공학을 위한 데이터플로우 그래프 기반의 매핑테이블 생성** 이은채, 최소연, 신성균, 유호영 *충남대학교 전자공학과*
WI1-O-2 **09:15-09:30**	**FPGA 기반 링 오실레이터 TRNG 성능 분석** 박지호, 양희훈, 이상원, 최소연, 유호영 *충남대학교 전자공학과*
WI1-O-3 **09:30-09:45**	**FPGA를 이용한 실시간 Tail Pulse 생성기 구현** 김정호, 이상원, 유호영 *충남대학교 전자공학과*
WI1-O-4 **09:45-10:00**	**Xilinx FPGA용 BRAM 데이터 복원 기법** 최소연, 신성균, 이은채, 유호영 *충남대학교 전자공학과*
WI1-O-5 **10:00-10:30** **[초청]**	**최신 하드웨어 기반 FPGA 공격법** 유호영 *충남대학교 전자공학과*

2023년 2월 15일(수), 09:00-10:30
Room J (하트 III, 6층)

T. AI 분과
[WJ1-T] Artificial Intelligence I

좌장: 정두석 교수(한양대학교)

WJ1-T-1 **09:00-09:15**	**Poly-Si Channel Flash Memory-Based Synaptic Devices for Spiking Neural Networks** Donghyun Ryu[1,2], Yeonwoo Kim[1,2], and Woo Young Choi[1,2] *[1]Department of Electrical and Computer Engineering, Seoul National University, [2]Inter-university Semiconductor Research Center, Seoul National University*
WJ1-T-2 **09:15-09:30**	**A Weight Split Method of RRAM Arrays for Neuromorphic Applications** Kyungchul Park[1,2], Sungjoon Kim[1,2], and Woo Young Choi[1,2] *[1]Department of Electrical and Computer Engineering, Seoul National University, [2]Inter-university Semiconductor Research Center, Seoul National University*
WJ1-T-3 **09:30-09:45**	**Neural Network-Based Prediction for Cross-Temperature Induced V_T Distribution Shift of 3D NAND Flash Memory** Kyeongrae Cho, Chanyang Park, Hyeok Yun, Hyundong Jang, Seungjoon Eom, and Rock-Hyun Baek *Department of Electrical Engineering, POSTECH*
WJ1-T-4 **09:45-10:00**	**패턴 인식 SNN 구현을 위한 Leaky-FeFET 기반의 단일소자 뉴런 개발** Gyusoup Lee, Jungyeop Oh, Eui Joong Shin, Seongho Kim, Youngkeun Park, Sung-Yool Choi, and Byung Jin Cho *School of Electrical Engineering, KAIST*
WJ1-T-5 **10:00-10:30** **[초청]**	**Issues in Analog In-Memory Neural Network Computing Accelerator Design** Jae-Joon Kim and Yulhwa Kim *Seoul National University*

2023년 2월 15일(수), 09:00-10:30
Room K (다이아몬드 I, 6층)

F. Silicon and Group-IV Devices and Integration Technology 분과
[WK1-F] M3D and Photonic Devices

좌장: 김장현 교수(부경대학교), 김가람 교수(명지대학교)

WK1-F-1 **09:00-09:15**	**p-Ge/n-Si Heterojunction Diodes Directly Grown on Silicon at Low Temperature** Hwayong Choi, Hyeonchae Kwon, Inho Lee, and Junseok Heo *Department of Electrical and Computer Engineering, Ajou University*
WK1-F-2 **09:15-09:30**	**Metal Reflector를 통한 후면조사 Single-Photon Avalanche Diode의 장파장 대역 효율 특성 향상 검증 및 분석** Doyoon Eom[1,2], Won-Yong Ha[3], Woo-Young Choi[1], and Myung-Jae Lee[2] *[1]Department of Electrical and Electronic Engineering, Yonsei University, [2]Post-Silicon Semiconductor Institute, KIST, [3]École Polytechnique Fédérale de Lausanne*
WK1-F-3 **09:30-09:45**	**애노드-캐소드 간격 최적화를 통한 단광자 아발란치 다이오드의 성능 개선** 최현승[1,2], 채영철[1], 이명재[2] *[1]연세대학교 전기전자공학과, [2]한국과학기술연구원 광전소재연구단*
WK1-F-4 **09:45-10:00**	**그린 레이저 다중 조사 열처리 공정 도입을 통한 Monolithic 3D (M3D) 상부 PMOS 소자 특성 향상** Youngkeun Park, Jaeoong Jeong, Yongku Baek, Semin Noh, Heetae Kim, Dong Bin Kim, and Byung Jin Cho *School of Electrical Engineering, KAIST*
WK1-F-5 **10:00-10:15**	**Doping Optimization of Single-Photon Avalanche Diodes for Mobile Applications** Doo-Hee Son[1,2,3], Doyoon Eom[1,2], and Myung-Jae Lee[1] *[1]Post-Silicon Semiconductor Institute, KIST, [2]Department of Electrical and Electronic Engineering, Yonsei University, [3]Department of Nanoscience and Engineering, Yonsei University*
WK1-F-6 **10:15-10:30**	**Monolithic 3D 집적 공정에서의 ILD 두께에 따른 열 분포 분석** Jaejoong Jeong, Youngkeun Park, Yongku Baek, Heetae Kim, Dong Bin Kim, and Byung Jin Cho *School of Electrical Engineering, KAIST*

2023년 2월 15일(수), 09:00-10:15
Room L (다이아몬드 II, 6층)

G. Device & Process Modeling, Simulation and Reliability 분과
[WL1-G] Phase-Field, Molecular Dyamics Simulation and Carrier Transport

좌장: 장지원 교수(연세대학교), 홍성민 교수(GIST)

WL1-G-1 **09:00-09:30** **[초청]**	**Phase-field Method and Its Application to Semiconductor Device and Process Simulation** Yongwoo Kwon *Hongik University*
WL1-G-2 **09:30-09:45**	**Multi-Level Storage in Cleaved-Gate Ferroelectric FETs Investigated by 3D Phase-Field Based Quantum Transport Simulation** Jeonghwan Jang, Hyeongu Lee, and Mincheol Shin *School of Electrical Engineering, KAIST*
WL1-G-3 **09:45-10:00**	**Investigation of Thermal Stress Effects and Delamination during Annealing of HfO_2 Thin Film Using Molecular Dynamics Simulations** Kiran Raj and Yongwoo Kwon *Department of Materials Science and Engineering, Hongik University*
WL1-G-4 **10:00-10:15**	**Multi-physics Boltzmann Transport Simulation in Nanowire by Coupling Multiple Physics-informed Deep Operator Networks** Bokyeom Kim and Mincheol Shin *School of Electrical Engineering, KAIST*

2023년 2월 15일(수), 10:45-12:30

Room A (에메랄드 I, 5층)

D. Thin Film Process Technology 분과
[WA2-D] Growth Characteristics of Atomic Layer Deposition

좌장: 최병준 교수(서울과학기술대학교), 송봉근 교수(홍익대학교)

WA2-D-1 **10:45-11:00**	**A Study on the Characteristics of $Hf_{0.5}Zr_{0.5}O_2$ Thin Films Prepared by Direct and Remote Plasma Atomic Layer Deposition for the Application to Ferroelectric Memory** Da Hee Hong, Jae Hoon Yu, Won Ji Park, and Hee Chul Lee *Department of Advanced Materials Engineering, Tech University of Korea*
WA2-D-2 **11:00-11:15**	**ALD Deposited Ferroelectric ZrO_2 on Ru with Low Thermal Budget** Myeongchan Ko, Soyun Joo, Seungbum Hong, and Kyung Min Kim *KAIST*
WA2-D-3 **11:15-11:30**	**Advanced Atomic Layer Deposition (ALD): Ultrathin Metal Film Growth Using Discrete Feeding Method and Electric Potential Assisted ALD** Ji Won Han[1], Hyun Soo Jin[1], Yoon Jeong Kim[1], Ji Sun Heo[1], Woo-Hee Kim[1], Ji-Hoon Ahn[1], Jeong Hwan Kim[2], and Tae Joo Park[1] *[1]Department of Materials Science and Chemical Engineering, Hanyang University, [2]Department of Advanced Materials Engineering, Hanbat National University*
WA2-D-4 **11:30-11:45**	**Advanced Atomic Layer Deposition: Metal Oxide Thin Film Growth Using the Discrete Feeding Method** Jae Chan Park[1], Chang Ik Choi[1], Sang-Gil Lee[2], Seung Jo Yoo[2], Ji-Hyun Lee[2], Jae Hyuck Jang[2], Woo-Hee Kim[1], Ji-Hoon Ahn[1], Jeong Hwan Kim[3], and Tae Joo Park[1] *[1]Department of Materials Science and Chemical Engineering, Hanyang University, [2]Center for Research Equipment, KBSI, [3]Department of Advanced Materials Engineering, Hanbat National University*
WA2-D-5 **11:45-12:00**	**Multicomponent $HfZrO_x$ Thin Films through Atomic Layer Modulation** Ngoc Le Trinh[1], Chi Thang Nguyen[1], Bonwook Gu[1], Byungchan Lee[1], Sehee Kim[2], Kun Yang[3], Min Hyuk Park[3], Bonggeun Shong[2], and Han-Bo-Ram Lee[1] *[1]Department of Materials Science and Engineering, Incheon National University, [2]Department of Chemical Engineering, Hongik University, [3]Department of Materials Science and Engineering, Seoul National University*
WA2-D-6 **12:00-12:15**	**Atomic Layer Deposition of Ru Thin Film Using a Newly Synthesized Precursor with Open-coordinated Ligands** Seung Hoon Oh[1,2], Hyeonbin Park[1,3], Tae Joo Park[2], Taeyong Eom[1], and Taek-Mo Chung[1,4] *[1]Thin Film Materials Research Center, KRICT, [2]Department of Materials Science and Chemical Engineering, Hanyang University, [3]Department of Materials Science and Engineering, KAIST, [4]Department of Chemical Convergence Materials, University of Science and Technology (UST)*
WA2-D-7 **12:15-12:30**	**Atomic Layer Deposition of Zinc Oxide and Aluminum Oxide Using Alcohols as the Oxygen Source** Miso Kim[1], Euncheol Shin[2], Hyewon Song[2], Jin-Ha Hwang[2], and Bonggeun Shong[1] *[1]Department of Chemical Engineering, Hongik University, [2]Department of Materials Science and Engineering, Hongik University*

2023년 2월 15일(수), 10:45-12:30
Room B (에메랄드 II+III, 5층)

D. Thin Film Process Technology 분과
[WB2-D] Thin Films Transistors II

좌장: 백인환 교수(인하대학교), 안지훈 교수(한양대학교)

WB2-D-1 **10:45-11:15** **[초청]**	**Atomic Layer Deposition for Emerging Semiconducting Materials** In-Hwan Baek[1] and Seong Keun Kim[2,3] *[1]Department of Chemical Engineering, Inha University, [2]Electronic Materials Research Center, KIST, [3]KU-KIST Graduate School of Converging Science and Technology, Korea University*
WB2-D-2 **11:15-11:30**	**Influence of HfO_2-Based Gate Stack on the Performance of P-channel SnO Thin Film Transistor Fabricated by Atomic Layer Deposition** Jina Kim[1], Hee Won Jang[1], Myeong Gil Chae[1], Bo Keun Park[2], Taek-Mo Chung[2], and Jeong Hwan Han[1] *[1]Department of Materials Science and Engineering, Seoul National University of Science and Technology, [2]Division of Advanced Materials, KRICT*
WB2-D-3 **11:30-11:45**	**Two-Dimensional Tin Sulfide Compounds Deposited by Atomic Layer Deposition Using a Novel Tin Precursor** Dong Geun Kim, Jeong-Hun Choi, Ji-Min Lee, and Ji-Hoon Ahn *Department of Materials Science and Chemical Engineering, Hanyang University*
WB2-D-4 **11:45-12:00**	**Performance Enhancement of Transparent p-type Copper Oxide Thin Film Transistors with Alkali Metal Doping** Seokhyeon Baek, Wonsik Kim, Taehyun Kwak, and Sungjun Park *Department of Electrical and Computer Engineering, Ajou University*
WB2-D-5 **12:00-12:15**	**Low-temperature Growth of 2D-MoS_2 Thin Films by Plasma-enhanced Atomic Layer Deposition Using New Molybdenum Precursor** Jeong-Hun Choi, Dong Geun Kim, Min-Ji Ha, Ji-Min Lee, and Ji-Hoon Ahn *Department of Materials Science and Chemical Engineering, Hanyang University*
WB2-D-6 **12:15-12:30**	**ALD Supercycle에 따른 다층 구조 ZnO/SnO_2 박막 트랜지스터의 성능 향상에 대한 연구** 박찬영, 이세형, 박소영, 백동기, 이문석 *부산대학교 전기전자공학과*

2023년 2월 15일(수), 10:45-12:30
Room C (사파이어 I, 5층)

C. Material Growth & Characterization 분과
[WC2-C] Oxides

좌장: 이준희 교수(UNIST), 강종훈 교수(POSTECH)

WC2-C-1 **10:45-11:15** **[초청]**	**Electric-Field Tuning of Spin Exchange Splitting in Graphene/$LaCoO_3$ Hybrid Heterostructure** Woo Seok Choi *Department of Physics, Sungkyunkwan University*
WC2-C-2 **11:15-11:45** **[초청]**	**Atomic Layer Deposition of SrO, $SrTiO_3$, and Al-doped $SrTiO_3$ Thin Films** Woongkyu Lee *Soongsil University*
WC2-C-3 **11:45-12:00**	**Electrical Switching Memory of Dielectric Constant** Yoon Seok Oh[1], Jun Han Lee[1], Nguyen Xuan Duong[2], Min-Hyoung Jung[3], Hyun-Jae Lee[1], Ahyoung Kim[4], Youngki Yeo[5], Junhyung Kim[1], Gye-Hyeon Kim[1], Byeong-Gwan Cho[6], Jaegyu Kim[5], Furqan Ul Hassan Naqvi[7], Jong-Seong Bae[8], Jeehoon Kim[9], Chang Won Ahn[2], Young-Min Kim[3], Tae Kwon Song[10], Jae-Hyeon Ko[7], Tae-Yeong Koo[6], Changhee Sohn[1], Kibog Park[1], Chan-Ho Yang[5], Sang Mo Yang[4], Jun Hee Lee[1], Hu Young Jeong[1], and Tae Heon Kim[2] *[1]UNIST, [2]University of Ulsan, [3]Sungkyunkwan University, [4]Sogang University, [5]KAIST, [6]Pohang Accelerator Laboratory, [7]Hallym University, [8]KBSI, [9]POSTECH, [10]Changwon National University*
WC2-C-4 **12:00-12:15**	**Polarization Effects of Wurtzite BeO/ZnO Heterostructures via Atomic Layer Deposition** Yoonseo Jang[1], Dohwan Jung[1], Christopher W. Bielawski[2,3], and Jungwoo Oh[1] *[1]School of Integrated Technology, Yonsei University, [2]Center for Multidimensional Carbon Material, IBS, [3]Department of Chemistry, UNIST*
WC2-C-5 **12:15-12:30**	**Remote Epitaxy of Inorganic Perovskite Grown by Chemical Vapor Deposition** Ga Eun Kim, Min Jin Kim, Dong Yeong Kim, and Sang Hyun Lee *School of Chemical Engineering, Chonnam National University*

2023년 2월 15일(수), 10:45-12:30
Room D (사파이어 II+III, 5층)

J. Nano-Science & Technology 분과
[WD2-J] 2D Materials

좌장: 이관형 교수(서울대학교)

WD2-J-1 **10:45-11:15** **[초청]**	**Interface Band Engineering toward High-Performance 2D van der Waals Electronics** Chul-Ho Lee[1,2] *[1]KU-KIST Graduate School of Converging Science and Technology, Korea University, [2]Department of Integrative Energy Engineering, Korea University*
WD2-J-2 **11:15-11:30**	**Epitaxial Growth of Single-Crystalline Hexagonal Boron Nitride on Vicinal Germanium (110)** Ju-Hyun Jung[1,2], Seong-Jun Yang[1,2], and Cheol-Joo Kim[1,2] *[1]Center for Van der Waals Quantum Solids, IBS, [2]Department of Chemical Engineering, POSTECH*
WD2-J-3 **11:30-11:45**	**Extreme Nanophotonics Enabled by Surface Polaritons in 2D Materials** In-Ho Lee *Center for Opto-Electronic Materials and Devices, KIST*
WD2-J-4 **11:45-12:00**	**Twist Angle Controls Optoelectronic Properties in 2D Semiconductor Heterostructures** Junho Choi *Advanced Instrumentation Institute, KRISS*
WD2-J-5 **12:00-12:15**	**High Performance Short Channel Devices via E-beam Patterning of Oxygen Doped WSe_2** Tien Dat Ngo[1], Min Sup Choi[2], and Won Jong Yoo[1] *[1]SKKU Advanced Institute of Nano Technology, Sungkyunkwan University, [2]Department of Materials Science and Engineering, Chungnam National University*
WD2-J-6 **12:15-12:30**	**Mechanical Manipulation of Moire Ferroelectric Domain Structures in Twisted Bilayer WSe_2** Sang Hwa Park, Ayoung Yuk, Hyobin Yoo, and Sang Mo Yang *Sogang University*

2023년 2월 15일(수), 10:45-12:30
Room E (루비 II, 5층)

E. Compound Semiconductors 분과
[WE2-E] Compound Semiconductor II

좌장: 차호영 교수(홍익대학교)

WE2-E-1 **10:45-11:15** **[초청]**	**Near-Junction Thermal Management for High-Power Electronics** Jungwan Cho *School of Mechanical Engineering, Sungkyunkwan University*
WE2-E-2 **11:15-11:30**	**Impact of $Hf_xAl_{1-x}O$ Gate Dielectric in the Performance Enhancement of AlGaN/GaN High Electron Mobility Transistors** Ju-Won Shin[1], Walid Amir[1], Surajit Chakraborty[1], Atish Bhattacharjee[1], Hyo-Joung Kim[1], Jae-Moo Kim[2], and Tae-Woo Kim[1] *[1]School of Electrical, Electronic, and Computer Engineering, University of Ulsan, [2]KANC*
WE2-E-3 **11:30-11:45**	**Cryogenic Switches based on InGaAs HEMT for Quantum Signal Routing** Jaeyong Jeong[1], Seong Kwang Kim[1], Jongmin Kim[2], Jisung Lee[3], Joon Pyo Kim[1], Bong Ho Kim[1], Yoon-Je Suh[1], Dae-Myeong Geum[1], Seung-Young Park[3], and SangHyeon Kim[1] *[1]School of Electrical Engineering, KAIST, [2]KANC, [3]KBSI*
WE2-E-4 **11:45-12:00**	**$In_{0.53}Ga_{0.47}As$ MOS Interface Optimization Using Post Deposition Annealing and Post Metal Annealing for Photo-FET on Si Wafer** Sung-Han Jeon[1,2], Dae-Hwan Ahn[1], Jindong Song[1], Woo-Young Choi[2], and Jae-Hoon Han[1] *[1]Center for Opto-Electronic Materials and Devices, KIST, [2]Department of Electrical and Electronic Engineering, Yonsei University*
WE2-E-5 **12:00-12:15**	**Positive–Bias–Stress Instability Assessment of AlGaN/GaN HEMTs during On-State Condition** Walid Amir[1], Ju-Won Shin[1], Ki-Yong Shin[1], Surajit Chakraborty[1], Takuya Hoshi[2], Takuya Tsutsumi[2], Hiroki Sugiyama[2], Hideaki Matsuzaki[2], and Tae-Woo Kim[1] *[1]Department of Electrical, Electronic, and Computer Engineering, University of Ulsan, [2]NTT Device Technology Laboratories, NTT Corporation*
WE2-E-6 **12:15-12:30**	**Study of Delta-doping Dopants on GaAs Tunnel Junctions and Their Thermal Degradation toward High Efficiency III-V/Si Tandem Cell** May Angelu Madarang[1,2], Rafael Jumar Chu[1,2], Yeonhwa Kim[1,3], Eunkyo Ju[1], Quang Nhat Dang Lung[1,2], Tae Soo Kim[1,4], Won Jun Choi[1], and Daehwan Jung[1,2] *[1]Center for Opto-Electronic Materials and Devices, KIST, [2]Division of Nano and Information Technology, University of Science and Technology (UST), [3]Department of Materials Science and Engineering, Korea University, [4]School of Electrical and Electronic Engineering, Yonsei University*

2023년 2월 15일(수), 10:45-12:30
Room F (스페이드 I, 6층)

P. Device for Energy (Solar Cell, Power Device, Battery, etc.) 분과
[WF2-P] 태양광 및 전하이동기술

좌장: 유상우 교수(경기대학교), 김형우 박사(KERI)

WF2-P-1 **10:45-11:15** **[초청]**	**4H-SiC Lateral MOSFETs for SiC Integrated Circuits** Hyoung Woo Kim, Jeong Hyun Moon, Jae Hwa Seo, and Wook Bahng *Advanced Semiconductor Research Center, KERI*
WF2-P-2 **11:15-11:30**	**Transition Metal Ion Doping on ZIF-8 for Enhanced the Electrochemical CO_2 Reduction Reaction** Jin Hyuk Cho and Soo Young Kim *Korea University*
WF2-P-3 **11:30-11:45**	**Visualization of the Evidence for Defects in Charge Transport Layers of Perovskite Solar Cells by Fluorescence Quenching** Hannah Kwon[1], Hyun Chul Kim[1], Seok Joon Kwon[2], and In Soo Kim[1,3] *[1]Nanophotonics Research Center, KIST, [2]School of Chemical Engineering, Sungkyunkwan University, [3]KIST-SKKU Carbon Neutral Research Center, Sungkyunkwan University*
WF2-P-4 **11:45-12:00**	**Silicon–hydrogen Bonding Configuration Modified by Layer Stacking Sequence in Silicon Heterojunction Solar Cells** Jeong-Ho An[1], Joon Ho Oh[1], Kyung Taek Jeong[2], Hee-eun Song[2], and Ka-Hyun Kim[3] *[1]Ulsan Advanced Energy Technology R&D Center, KIER, [2]Photovoltaics Laboratory, KIER, [3]Department of Physics, Chungbuk National University*
WF2-P-5 **12:00-12:30** **[초청]**	**Quantitative Visualization of Electronic Transfer at the Metal/Oxide Interfaces of Nanocatalyst** Hyosun Lee *University of Seoul*

2023년 2월 15일(수), 10:45-12:30
Room G (스페이드 II+III, 6층)

K. Memory (Design & Process Technology) 분과
[WG2-K] Processing In Memory

좌장: 정두석 교수(한양대학교), 김윤 교수(서울시립대학교)

WG2-K-1 **10:45-11:15** **[초청]**	**Memory-Based Hardware Neural System for High-density and Low-power Applications** Min-Hwi Kim *Chung-Ang University*
WG2-K-2 **11:15-11:30**	**저전력 추론을 위한 용량성 커플링 기반의 뉴로모픽 아키텍처** Jung Nam Kim[1], Minsuk Koo[2], and Yoon Kim[1] *[1]Department of Electrical and Computer Engineering, University of Seoul, [2]Department of Computer Science and Engineering, Incheon National University*
WG2-K-3 **11:30-11:45**	**Stochastic Stateful Logic Technology and Its Application to Evolutionary Learning Algorithm in TaO_x-Memristor Crossbar** Do Hoon Kim and Kyung Min Kim *KAIST*
WG2-K-4 **11:45-12:00**	**A 256×64 12T SRAM Compute-In-Memory Macro with In-SRAM Reference Voltage Generation** Hyeyeong Lee, Kyeongho Lee, Yeseul Kim, and Jongsun Park *Department of Electrical Engineering, Korea University*
WG2-K-5 **12:00-12:15**	**Probabilistic Computing Hardware based on a Diffusive Memristor** Jaehyun Kim[1,2], Janguk Han[1,2], Kyung Seok Woo[1,2], and Cheol Seong Hwang[1,2] *[1]Department of Materials Science and Engineering, Seoul National University, [2]Inter-university Semiconductor Research Center, Seoul National University*
WG2-K-6 **12:15-12:30**	**Implementation of the 2T-2M Block-Based Reconfigurable Logic Circuit by Combining the Amorphous InGaZnO ReRAM and Thin-film Transistors** Jung Rae Cho, Jingyu Park, Tae Jun Yang, Jong-Ho Bae, Sung-Jin Choi, Dong Myong Kim, and Dae Hwan Kim *School of Electrical Engineering, Kookmin University*

2023년 2월 15일(수), 10:45-12:30
Room H (하트 I, 6층)

B. Patterning (Lithography & Etch Technology) 분과
[WH2-B] Advanced Etch Technology II

좌장: 김창구 교수(아주대학교), 조성일 상무(삼성전자)

WH2-B-1 **10:45-11:15** **[초청]**	**Novel Approach to Remove NVM(non-volatile metal) Selectively-atomistically-isotropically** YS(Yunsang) Kim *SEMES Co., Ltd.*
WH2-B-2 **11:15-11:45** **[초청]**	**Etch 공정 중 사용되는 소모재에 대한 ESG 관점의 고찰** Yeonghun Han and Jungtaik Cheong *Semiconductor R&D, SK Hynix*
WH2-B-3 **11:45-12:00**	**2차원 물질의 무손상 원자층 단위 식각 기술에 대한 연구** Dongryul Lee[1], Geonyeop Lee[1], and Jihyun Kim[2] *[1]Department of Chemical and Biological Engineering, Korea University, [2]School of Chemical and Biological Engineering, Seoul National University*
WH2-B-4 **12:00-12:15**	**Surface Reaction during Isotropic Atomic Layer Etching of Al_2O_3 Using NF_3 Remote Plasma and Al Precursor** Yewon Kim[1], Gyejun Cho[1], Okhyeon Kim[1], Khabib Khumaini[1,2], Hye-Lee Kim[3], Jun Hyuck Kwon[4], Minsu Kim[4], Byungchul Cho[4], Sangjoon Park[4], and Won-Jun Lee[1,3] *[1]Department of Nanotechnology and Advanced Materials Engineering, Sejong University, [2]Department of Chemistry, Universitas Pertamina, [3]Metal-organic Compounds Materials Research Center, Sejong University, [4]Wonik IPS*
WH2-B-5 **12:15-12:30**	**BCl_3/Cl_2 Plasma Etching Process of Ferroelectric Gate Stack for Device Integration** Bohyeon Kang, Sung-min Ahn, Jongseo Park, Jehyun An, Hyunseo You, and Rock-Hyun Baek *Department of Electrical Engineering, POSTECH*

2023년 2월 15일(수), 10:45-12:30
Room I (하트 II, 6층)

O. System LSI Design 분과
[WI2-O] Circuits & Systems for Neural Networks

좌장: 유호영 교수(충남대학교), 최웅 교수(숙명여자대학교)

WI2-O-1 **10:45-11:00**	**Low-power Neuron Comparator for Spiking Neural Network** Gyuwon Kam and Soo Youn Kim *Department of Semiconductor Science, Dongguk University*
WI2-O-2 **11:00-11:15**	**Hybrid Booth Multiplier with Data Reduction Encoding for Deep Learning Accelerator** Jungeun Park, Jaeeun Jung, and Woong Choi *Department of Electronics Engineering, Sookmyung Women's University*
WI2-O-3 **11:15-11:30**	**LaCERA: Layer-Centric Event-Routing Architecture** ChangMin Ye, DongHyung Yoo, and Doo Seok Jeong *Division of Materials Science and Engineering, Hanyang University*
WI2-O-4 **11:30-11:45**	**데이터 흐름 기반의 3차원 CNN 구조 분석** 이상원, 박지호, 김정호, 황용택, 유호영 *충남대학교 전자공학과*
WI2-O-5 **11:45-12:00**	**RISC-V 명령어 기반 Processing in Memory 구현** 임지환, 이유진, 유호영 *충남대학교 전자공학과*
WI2-O-6 **12:00-12:30** **[초청]**	**Trend of Memory-Based Deep Learning Accelerator Design** Woong Choi *Sookmyung Women's University*

2023년 2월 15일(수), 10:45-12:30

Room J (하트 III, 6층)

T. AI 분과
[WJ2-T] Artificial Intelligence II

좌장: 이성호 센터장(KETI)

WJ2-T-1 **10:45-11:15** **[초청]**	**Building High-performance and Energy Efficient Inference Chips for Data Centers** Joon Ho Baek *FuriosaAI, Inc.*
WJ2-T-2 **11:15-11:30**	**DTS-SNN: Spiking Neural Networks with Dynamic Time-Surfaces** DongHyung Yoo and Doo Seok Jeong *Division of Materials Science and Engineering, Hanyang University*
WJ2-T-3 **11:30-11:45**	**LiNLNets: Gauging Required Nonlinearity in Deep Neural Networks** SeongMin Jin and Doo Seok Jeong *Division of Materials Science and Engineering, Hanyang University*
WJ2-T-4 **11:45-12:00**	**Quantum Denoising Diffusion Probabilistic Models for Image Generation** Dohun Kim and Seokhyeong Kang *POSTECH*
WJ2-T-5 **12:00-12:15**	**Hardware Dropout Using Stochastic Property of Ovonic Threshold Switch** Dongmin Kim[1,2], Wooseok Choi[1,2], Jangseop Lee[1,2], and Hyunsang Hwang[1,2] *[1]Center for Single Atom-Based Semiconductor Device, POSTECH, [2]Department of Materials Science and Engineering, POSTECH*
WJ2-T-6 **12:15-12:30**	**A Real-Time Error Correction System of Ultrasonic Sensor with Embedded AI Accelerator** Jin Young Shin, Sang Ho Lee, Kwang Hyun Go, and Seung Eun Lee *Department of Electronic Engineering, Seoul National University of Science and Technology*

2023년 2월 15일(수), 10:45-12:30
Room K (다이아몬드 I, 6층)

F. Silicon and Group-IV Devices and Integration Technology 분과
[WK2-F] Advanced Process and Device Technology

좌장: 김경록 교수(UNIST), 이용규 마스터(삼성전자)

WK2-F-1 **10:45-11:15** **[초청]**	**Amorphous Indium Tin Oxide Transistor Enables N3XT 3D Integration of Logic and Memory** Jimin Kwon *Department of Electrical Engineering, UNIST*
WK2-F-2 **11:15-11:45** **[초청]**	**50-Year CMOS Device History and Future toward Autonomous Semiconductor Development** Shigenobu Maeda, Dae Han Han, Donghyun Kim, Minhong Yun, Kyung Tae Kim, Jung Soo Nam, and Jooyeok Seo *Foundry Business, Samsung Electronics Co., Ltd.*
WK2-F-3 **11:45-12:00**	**28-nm Embedded Flash Process for Ultra-wideband Wireless Communication** Jeadong Jung, Kyongsik Yeom, Jongsung Woo, Hyunik Park, Han-Hyeong Choi, Donghwi Hwang, Minji Seo, Jaehun Lee, Hwanho Ma, Jusang Lee, Juwoon Kim, Youngcheon Jeong, Changmin Jeon, and Jong-Ho Lee *Foundry Business, Samsung Electronics Co., Ltd.*
WK2-F-4 **12:00-12:15**	**Steep-switching Phase-transition FET with Ag/HfO_2-Based Threshold Switching Device** Sanghyun Kang[1] and Changhwan Shin[2] *[1]School of Electronic and Electrical Engineering, Sungkyunkwan University, [2]School of Electrical Engineering, Korea University*
WK2-F-5 **12:15-12:30**	**The Influence of Single-Event-Effects on Complementary FET Based Logic Inverter and Its Electrical Characteristic** Jin Park, Sang Ho Lee, Geon Uk Kim, Ga Eon Kang, Jun Hyeok Heo, So Ra Jeon, and In Man Kang *School of Electronic and Electrical Engineering, Kyungpook National University*

2023년 2월 15일(수), 10:45-12:30
Room L (다이아몬드 II, 6층)

G. Device & Process Modeling, Simulation and Reliability 분과
[WL2-G] Characterization and Compact Model

좌장: 우지용 교수(경북대학교), 김성호 교수(세종대학교)

WL2-G-1 **10:45-11:00**	**TCAD Analysis of Low Resistance Ohmic Contacts to 2DEG Structures** Sethu Merin George, I.G Lee, H.B Jo, and Dae-Hyun Kim *School of Electronics Engineering, Kyungpook National University*
WL2-G-2 **11:00-11:15**	**Modeling and Characterization of Contact and Spreading Resistances in Vertical 3D Silicon FET with Asymmetric Structure** Jae Wook Yoo[1], Ji-Man Yoo[2], Hong Seung Lee[1], Hyeon Jun Song[1], Seongbin Lim[1], Jo-Hak Jung[1], Kihyun Kim[1], Keun Heo[1], Yang-Kyu Choi[2], and Hagyoul Bae[1] *[1]Jeonbuk National University, [2]KAIST*
WL2-G-3 **11:15-11:30**	**On the Universality of Drain-induced-barrier-lowering in FETs** Su-Min Choi[1], Wan-Soo Park[1], Ji-Hoon Yoo[1], Hyo-Jin Kim[1], Hyuk-Min Kwon[2], Takuya Tsutsumi[3], Hiroki Sugiyama[3], Hideaki Matsuzaki[3], Jang-Kyoo Shin[1], Jae-Hak Lee[1], and Dae-Hyun Kim[1] *[1]Kyungpook National University, [2]Polytechnics, [3]NTT Co.*
WL2-G-4 **11:30-11:45**	**Automatic Prediction of MOSFET Threshold Voltage Using Machine Learning Algorithm** DongGeun Park[1], Seoyeon Choi[1], Min Jung Kim[1], Seain Bang[1], Jungchun Kim[1], Seunghee Jin[1], Ki Seok Huh[1], Donghyun Kim[1], Jerome Mitard[2], Chul Han[1], and Jae Woo Lee[1] *[1]Department of Electronics and Information Engineering, Korea University, [2]Imec*
WL2-G-5 **11:45-12:00**	**Extraction Technique for Characteristic Parameters in Si MOSFETs through the Dual Sweep Current-to-Transconductance Ratio** Ju Young Park, Han Bin Yoo, Haesung Kim, Ji Hee Ryu, Seung Hyeop Han, Jong-Ho Bae, Sung-Jin Choi, Dae Hwan Kim, and Dong Myong Kim *Kookmin University*
WL2-G-6 **12:00-12:15**	**Strategies for Generating Data-efficient Neural Compact Model Using Measured MOSFET Data** Kyung Jin Rim[1], Kyungmin Kim[1], Haesung Kim[2], Ha Neul Lee[2], Junseong Park[2], Dong Myong Kim[2], Jong-Ho Bae[2], Chanwoo Park[1], and Soogine Chong[1] *[1]Alsemy Inc., [2]School of Electrical Engineering, Kookmin University*
WL2-G-7 **12:15-12:30**	**Development of In-House Compact Model for Multigate MOSFETs Using the Verilog-A** Seong-Min Han, Kwang-Woon Lee, and Sung-Min Hong *School of Electrical Engineering and Computer Science, GIST*

2023년 2월 15일(수), 16:00-17:45
Room A (에메랄드 I, 5층)

L. Analog Design 분과
[WA3-L] Analog Design

좌장: 엄지용 교수(금오공과대학교), 정영호 교수(대구대학교)

WA3-L-1 **16:00-16:30** **[초청]**	**Design of Fully-Integrated Low Dropout Regulator with Wide PSR Range** Young-Ha Hwang, Hee-Cheol Joo, and Yeri Kim *Soongsil University*
WA3-L-2 **16:30-16:45**	**A 99.3dB DR, 15.4μW Discrete-time 2nd Order Delta-sigma Modulator** Byeong-Ho Yu, Jun-Ho Boo, Jae-Geun Lim, Hyoung-Jung Kim, Jae-Hyuk Lee, and Gil Cho Ahn *Department of Electronic Engineering, Sogang University*
WA3-L-3 **16:45-17:00**	**Validation and Analysis of Stochastic Adaptation Methodology Using a 32Gb/s RC-degenerated CTLE** Suil Kang[1] and Kwanseo Park[2] *[1]Kwangwoon University, [2]Yonsei University*
WA3-L-4 **17:00-17:15**	**FMCW LiDAR에서 DBR Laser의 주파수를 선형으로 변조시키는 Electro-Optical Phase Locked Loop(EO-PLL)** 김의근, 이승주, 박종민, 양성훈, 정재훈, 조영원, 조요셉, 채종혁, 범진욱 *Department of Electronic Engineering, Sogang University*
WA3-L-5 **17:15-17:30**	**Analysis of 2x Oversampling Phase and Frequency Detector** Dongwoo Kang[1] and Kwanseo Park[2] *[1]Kwangwoon University, [2]Yonsei University*
WA3-L-6 **17:30-17:45**	**Ultrasonic Preamplifier with Dynamic Push-Pull Current-Reuse Amplifier** Min-Hyeong Son and Ji-Yong Um *Department of Medical IT Convergence Engineering, Kumoh National Institute of Technology*

2023년 2월 15일(수), 16:00-17:45
Room B (에메랄드 II+III, 5층)

D. Thin Film Process Technology 분과
[WB3-D] Area-selective Deposition

좌장: 김우희 교수(한양대학교), 오일권 교수(아주대학교)

WB3-D-1 **16:00-16:30** **[초청]**	**Precursor Choice of Metal Oxides in Atomic Layer Deposition** Il-Kwon Oh *Department of Electrical and Computer Engineering, Ajou University*
WB3-D-2 **16:30-16:45**	**Selective Etching Reactions during Atomic Layer Deposition of Indium Gallium Zinc Oxide** Iaan Cho[1], Jae Hoon Cho[2], Jae Kyeong Jeong[2], and Bonggeun Shong[1] *[1]Department of Chemical Engineering, Hongik University, [2]Department of Electronic Engineering, Hanyang University*
WB3-D-3 **16:45-17:00**	**Area Selective Deposition Using Ruthenium Precursor Inhibitor and Control of Inhibitor Packing Density** Chi Thang Nguyen[1], Eun-Hyoung Cho[2], Ngoc Le Trinh[1], Bonwook Gu[1], Mingyu Lee[1], and Han-Bo-Ram Lee[1] *[1]Department of Materials Science and Engineering, Incheon National University, [2]Beyond Silicon Lab, Samsung Advanced Institute of Technology*
WB3-D-4 **17:00-17:15**	**Area-Selective Atomic Layer Deposition of Ru Thin Films Using Aldehyde-Based Inhibitors on Nitride Surfaces** Jinseon Lee and Woo-Hee Kim *Department of Materials Science and Chemical Engineering, Hanyang University*
WB3-D-5 **17:15-17:30**	**Demonstrations on Synaptic Operations of In-Ga-Zn-O Thin Film Transistor Using Solution-Process Li-doped ZrO_2 Electrolyte Gate Insulator** Dong-Hee Kim[1], Young-Ha Kwon[2], Nak-Jin Seong[2], Kyu-Jeong Choi[2], and Sung-Min Yoon[1] *[1]Kyung Hee University, [2]NCD Co., Ltd.*
WB3-D-6 **17:30-17:45**	**Thiol Instigated Area Selective Deposition of HfO_2 ALD on Copper, Silicon Oxide and Titanium Nitride Substrates** Summal Zoha[1], Bonwook Gu[1], Zunair Masroor[1], Fabian Pieck[2], Ralf Tonner[2], and Han-Bo-Ram Lee[1] *[1]Department of Materials Science and Engineering, Incheon National University, [2]Wilhelm Ostwald Institute for Physical and Theoretical Chemistry, University of Leipzig*

2023년 2월 15일(수), 16:00-17:45
Room C (사파이어 I, 5층)

C. Material Growth & Characterization 분과
[WC3-C] 2D Materials

좌장: 이웅규 교수(숭실대학교)

WC3-C-1 **16:00-16:30** **[초청]**	**Flat-band Ferroelectricity and Unconventional Domain Walls in HfO_2** Jun Hee Lee *UNIST*
WC3-C-2 **16:30-17:00** **[초청]**	**Deep Ultraviolet Light Emission from Atomically Thin Hexagonal Boron Nitride van der Waals Heterostructures** Young Duck Kim *Department of Physics, Kyung Hee University*
WC3-C-3 **17:00-17:30** **[초청]**	**Atomically Thin Semiconductors: 2D or Not 2D** Jong-Hoon Kang *Department of Materials Science and Engineering, POSTECH*
WC3-C-4 **17:30-17:45**	**그래핀을 이용한 N(질소)-극성 질화갈륨(GaN)의 원격 동종에피택시** 최중훈, 홍영준 *세종대학교 나노신소재공학과*

2023년 2월 15일(수), 16:00-17:45
Room D (사파이어 II+III, 5층)

D. Thin Film Process Technology 분과
[WD3-D] Emerging Devices

좌장: 윤성민 교수(경희대학교), 엄태용 선임연구원(한국화학연구원)

WD3-D-1 **16:00-16:15**	**In-situ Observation of Two-Dimensional Electron Gas Creation at the Interface of an Atomic-Layer-Deposited Al_2O_3/TiO_2 Thin Film Heterostructure** Ji Hyeon Choi[1], Tae Jun Seok[1], Jae Hyuck Jang[2], Deok-Yong Cho[3], Sang Woon Lee[4,5], and Tae Joo Park[1] *[1]Department of Materials Science and Chemical Engineering, Hanyang University, [2]Electron Microscopy Research Center, KBSI, [3]IPIT and Department of Physics, Jeonbuk National University, [4]Department of Energy Systems Research, Ajou University, [5]Department of Physics, Ajou University*
WD3-D-2 **16:15-16:30**	**Channel Switching-Based Negative Differential Resistance Behavior with Post-Fabrication Adjustability by Light/Gate Voltage Co-Control** Seongjae Kim, Yunchae Jeon, and Hocheon Yoo *Department of Electronic Engineering, Gachon University*
WD3-D-3 **16:30-16:45**	**A Multi-deposition Method for High-performance Solution-processed Carbon Nanotube Network Transistors** Hanbin Lee[1], Jeonghee Ko[1], Yulim An[1], Hyo-In Yang[1], Dong Myong Kim[1], Dae Hwan Kim[1], Jong-Ho Bae[1], Minho Kang[2], and Sung-Jin Choi[1] *[1]School of Electrical Engineering, Kookmin University, [2]Department of Nano-process, NNFC*
WD3-D-4 **16:45-17:00**	**Optically Programmable Floating-Gate Small Molecules-Based Heterojuction Transistors Exceeding a Programmed/Erased Current Ratio of 10^7** Seungme Kang, Seongjae Kim, and Hocheon Yoo *Gachon University*
WD3-D-5 **17:00-17:15**	**Low-temperature Ferroelectric $Hf_{0.5}Zr_{0.5}O_2$ Device for BEOL Integration** Hye Ryeon Park[1], Jeong Gyu Yoo[1], Seongbin Park[1], Yong Chan Jung[2], Jiyoung Kim[2], and Si Joon Kim[1] *[1]Kangwon National University, [2]The University of Texas at Dallas*
WD3-D-6 **17:15-17:30**	**InAlGaAs MQW Regrowth on InP/Si Bonding Template** 윤소연[1,2], 김호성[1], 박민수[2], 한원석[1] *[1]한국전자통신연구원 광통신부품연구실, [2]동아대학교 전자공학과*
WD3-D-7 **17:30-17:45**	**Charge Injection Barrier Control by Small-Molecular Buffer and Its Effects on a Hybrid Complementary Inverter Circuit** Youngmin Han, Seongjae Kim, Chang-Hyun Kim, and Hocheon Yoo *Department of Electronic Engineering, Gachon University*

2023년 2월 15일(수), 16:00-17:45
Room E (루비 II, 5층)

E. Compound Semiconductors 분과
[WE3-E] Compound Semiconductor III

좌장: 장우진 박사(ETRI)

WE3-E-1 **16:00-16:15**	**ITGO TFTs with Substantially Reduced Subthreshold Swing through Sn Composition Control Using Plasma-Enhanced Atomic Layer Deposition** Chi-Hoon Lee, Dong-Hyeon Lee, Dong-Gyu Kim, Minseok Kim, and Jin-Seong Park *Division of Materials Science and Engineering, Hanyang University*
WE3-E-2 **16:15-16:30**	**P-GaN 게이트 AlGaN/GaN 이종 접합 트랜지스터의 P-GaN 재활성화 공정** Yeo-Reum Yang, Jun-Hyeok Yim, Won-Ho Jang, and Ho-Young Cha *School of Electronic and Electrical Engineering, Hongik University*
WE3-E-3 **16:30-16:45**	**Fabrication of Si-subcell for Monolithic III-V/Si Tandem Solar Cell with Higher J_{sc} and V_{oc}** Eunkyo Ju[1], Yeonhwa Kim[1,3], May Angelu Madarang[1,2], Tae Soo Kim[1,4], Won Jun Choi[1], and Daehwan Jung[1,2] *[1]Center for Opto-Electronics Materials and Devices, KIST, [2]Division of Nano and Information Technology, University of Science and Technology (UST), [3]Department of Materials Science and Engineering, Korea University, [4]School of Electrical and Electronic Engineering, Yonsei University*
WE3-E-4 **16:45-17:00**	**Effect of Punctuated Growth on the Static Lasing Properties of 2 μm Quantumdash Lasers** Rafael Jumar Chu[1,2], Yeonhwa Kim[1,2], Seungwan Woo[1,3], Won Jun Choi[1], and Daehwan Jung[1,2] *[1]Center for Opto-Electronic Materials and Devices, KIST, [2]Division of Nanoscience and Technology, KIST School, University of Science and Technology (UST), [3]Department of Materials Science and Engineering, Seoul National University*
WE3-E-5 **17:00-17:15**	**Direct Growth of a GaAs/Si Tandem Solar Cell with Optically Transparent InAlAs/GaAs Dislocation Filter Layers** Yeonhwa Kim[1,2], Rafael Chu[2,3], Eunkyo Ju[2], May Angelu Madarang[2,3], Won Jun Choi[2], In-Hwan Lee[1], and Daehwan Jung[2,3] *[1]Department of Materials Science and Engineering, Korea University, [2]Center for Opto-Electronic Materials and Devices, KIST, [3]Division of Nano and Information Technology, KIST School, University of Science and Technology (UST)*
WE3-E-6 **17:15-17:30**	**Observation of Magnetic Properties in Proton-irradiated AlGaN/GaN Heterostructure** Dong-Seok Kim[1], Jun Kue Park[1], and Hye Min Jang[1,2] *[1]Korea Multi-purpose Accelerator Complex, KAERI, [2]Division of Physics and Semiconductor Science, Dongguk University*
WE3-E-7 **17:30-17:45**	**Reduced Schottky Barrier of Metal/4H-SiC Junction with Ultrathin Aluminum Oxynitride Interlayer** Junhyung Kim[1], Eunseok Hyun[1], Wonho Song[1], Jinyoung Park[1], Jaehyeong Jo[1], Jiwan Kim[1], Hyunjae Park[1], Gahyun Choi[2], and Kibog Park[1,3] *[1]Department of Physics, UNIST, [2]KRISS, [3]Department of Electrical Engineering, UNIST*

2023년 2월 15일(수), 16:00-17:45
Room F (스페이드 I, 6층)

M. RF and Wireless Design 분과
[WF3-M] RF and Wireless Design

좌장: 권구덕 교수(강원대학교), 한상욱 수석연구원(삼성전자)

WF3-M-1 **16:00-16:30** **[초청]**	**The Mobile RF Transceiver: Distributed and Connected for Better Performance** Sangwook Han *S.LSI Samsung Electronics Co., Ltd.*
WF3-M-2 **16:30-17:00** **[초청]**	**Solid-State RF Energy Applications and Trends** Sanghun Lee *Wavepia Co., Ltd.*
WF3-M-3 **17:00-17:15**	**CMOS Broadband Common-Gate LNA with Feedforward N-path Filtering for 5G New Radio Cellular Application** Donggu Lee and Kuduck Kwon *Department of Electronic Engineering, Kangwon National University*
WF3-M-4 **17:15-17:30**	**Gain-Boosted Ka-Band CMOS Down-Conversion Mixer for 5G NR FR2 Applications** Beomsoo Bae, Eunsoo Kim, Segyeong Kim, and Junghwan Han *Chungnam National University*
WF3-M-5 **17:30-17:45**	**Design of Ku-band 2-Stage GaN Low-Noise Amplifier** 박종진[1], 양영구[1,2] *[1]성균관대학교 전자전기공학부, [2]para-PA Inc.*

2023년 2월 15일(수), 16:00-17:45
Room G (스페이드 II+III, 6층)

K. Memory (Design & Process Technology) 분과
[WG3-K] DRAM, MRAM, and NAND Flash Memory

좌장: 오정훈 마스터(삼성전자), 김성준 교수(동국대학교)

WG3-K-1 **16:00-16:30** **[초청]**	**3D NAND Flash Development Status and Challenges** Daewoong Kang *Seoul National University*
WG3-K-2 **16:30-17:00** **[초청]**	**Technology of Cross-point MRAM for High Density Memory** 김수길, 서수만, 윤종민, 김세연, 나명희 *SK Hynix*
WG3-K-3 **17:00-17:15**	**Investigation of Dynamic Negative bias Temperature Instability of 1x-nm DRAM Peripheral PMOS Transistors for Cryogenic Memory Applications** Ha Young Bang[1], Hee Jun Lee[1], Jingyu Park[1], Jisook Hong[2], Seonhaeng Lee[2], and Dae Hwan Kim[1] *[1]School of Electrical Engineering, Kookmin University, [2]Memory Division, Samsung Electronics Co., Ltd.*
WG3-K-4 **17:15-17:30**	**Random Telegraph Noise-Based Analysis of Electron Traps in the Cryogenic Operation of Sub 30-nm DRAM Cell Array Transistors** Sangwon Lee[1], Ga Won Yang[1], Sungju Choi[1], Jisook Hong[2], Seonhaeng Lee[2], and Dae Hwan Kim[1] *[1]School of Electrical Engineering, Kookmin University, [2]Memory Division, Samsung Electronics Co., Ltd.*
WG3-K-5 **17:30-17:45**	**Analysis of Mechanical Stress on Charge Trap Nitride (CTN) for Program Operation in 3D NAND Flash Memory** Donghyun Kim, Kihoon Nam, Chanyang Park, Giho Yang, Jinsu Jeong, Sanguk Lee, Jaewan Lim, and Rock-Hyun Baek *Department of Electrical Engineering, POSTECH*

2023년 2월 15일(수), 16:00-17:45
Room H (하트 I, 6층)

N. VLSI CAD 분과
[WH3-N] Design Automation in Advanced Technology Nodes

좌장: 송대건 교수(경북대학교), 강석형 교수(POSTECH)

WH3-N-1 **16:00-16:30** **[초청]**	**Applications of Deep Learning on EDA: Status and Challenges** Heechun Park *Kookmin University*
WH3-N-2 **16:30-16:45**	**MLB: Multi-Vth Tuning for Leakage Power Reduction via Bayesian Optimization** Jaeseung Lee, Jakang Lee, Seonghyeon Park, and Seokhyeong Kang *POSTECH*
WH3-N-3 **16:45-17:00**	**Optimizing Pin Accessibility of 3nm GAAFET Standard Cells** Jaehoon Jeong[1] and Taigon Song[1,2] *[1]School of Electronic and Electrical Engineering, Kyungpook National University, [2]School of Electronics Engineering, Kyungpook National University*
WH3-N-4 **17:00-17:15**	**전력분배망 최적화를 위한 고속 전압 강하 분석** 송정식, 오제영, 현대준 *청주대학교 전자공학과*
WH3-N-5 **17:15-17:30**	**Open-Source 3D Global Placer with D2D Vertical Connections Using Louvain Clustering and RePlAce** Minjae Kim, Dohun Kim, and Seokhyeong Kang *POSTECH*
WH3-N-6 **17:30-17:45**	**A Novel Processing Unit and Architecture for Process-In Memory (PIM) in NAND Flash Memory** Hyunwoo Kim[1] and Taigon Song[1,2] *[1]School of Electronic and Electrical Engineering, Kyungpook National University, [2]School of Electronics Engineering, Kyungpook National University*

2023년 2월 15일(수), 16:00-17:45
Room I (하트 II, 6층)

O. System LSI Design 분과
[WI3-O] VLSI Design for Signal Processing

좌장: 최웅 교수(숙명여자대학교), 공병용 교수(공주대학교)

WI3-O-1 **16:00-16:15**	**Low Area and Low Delay Data Bus Inversion Encoder Design for Serialized I/O Interface** Seongyoon Kang, Joongho Jo, Seungeon Hwang, and Jongsun Park *Department of Semiconductor System Engineering, Korea University*
WI3-O-2 **16:15-16:30**	**A Look-Up Table (LUT) Based Fractional-N Digital Sub-Sampling Multiplying Delay-Locked Loop** Kangwon Nam, Junsik Choi, and In-Chul Hwang *Kangwon National University*
WI3-O-3 **16:30-16:45**	**Dual-Conversion Gain ADC를 적용한 저잡음 CMOS 이미지 센서 설계** 윤승주, 김수연 *동국대학교 반도체과학과*
WI3-O-4 **16:45-17:00**	**Verilator-Based Fast Verification Methodology for Bluetooth LE MAC HW** Eunkyung Ham[1,2], Yujin Jeon[1,2], Jaeyun Lim[1,2], and Ji-Hoon Kim[1,2] *[1]Ewha Womans University, [2]Smart Factory Multidisciplinary Program*
WI3-O-5 **17:00-17:15**	**GPS L1 C/A 수신기를 위한 코드 생성기 구현** 황지우, 김민수, 황용택, 유호영 *충남대학교 전자공학과*
WI3-O-6 **17:15-17:45** **[초청]**	**VLSI Architectures for Metric Sorting in List Polar Decoding** Byeong Yong Kong *Division of Electrical, Electronic, and Control Engineering, Kongju National University*

2023년 2월 15일(수), 16:00-17:45
Room J (하트 III, 6층)

U. Bio-Medical 분과
[WJ3-U] Advances in Biomedical Integrated Circuits and Systems

좌장: 김철 교수(KAIST), 이정협 교수(DGIST)

WJ3-U-1 **16:00-16:30** **[초청]**	**Area- and Energy-Efficient Neural Interface Architectures for Advanced Neuroscience Research Tools** Sung-Yun Park *Pusan National University*
WJ3-U-2 **16:30-17:00** **[초청]**	**A Low-Power and Area-Efficient Beamforming SAR ADC for 3-D Imaging Systems** Seungah Lee and Joonsung Bae *Kangwon National University*
WJ3-U-3 **17:00-17:15**	**A Reconfigurable Sub-Array Multiplexing Microelectrode Array System for Investigating Neural Communication** Ji-Hyoung Cha[1], Jee-Ho Park[1], Yongjae Park[1], Hyogeun Shin[2], Kyeong Seob Hwang[2], Il-Joo Cho[2], and Seong-Jin Kim[1] *[1]UNIST, [2]KIST*
WJ3-U-4 **17:15-17:30**	**Half-wave Cross Coupled Voltage Doubler for Ultrasonic Wireless Power Transmission** Charnmin Park, Juntae Jang, and Chul Kim *KAIST*
WJ3-U-5 **17:30-17:45**	**바이오 측정을 위한 프로세스, 전압, 온도 변화에 강인한 VCO-Based ADC** Soyeong Bae and Junghyup Lee *Department of Electrical Engineering and Computer Science, DGIST*

2023년 2월 15일(수), 16:00-17:45
Room K (다이아몬드 I, 6층)

F. Silicon and Group-IV Devices and Integration Technology 분과
[WK3-F] Neuromorphic Devices and Reliability

좌장: 구민석 교수(인천대학교), 권지민 교수(UNIST)

WK3-F-1 **16:00-16:15**	**Ultra-Low-Power Neuromorphic Computing based on Fully Si-Compatible Chip Technology and Application for Convolutional Neural Network** Kannan Udaya Mohanan[1], Min-Kyu Park[2], Jong-Ho Lee[2], and Seongjae Cho[1] *[1]Department of Electronic Engineering, Gachon University, [2]Department of Electrical and Computer Engineering, Seoul National University*
WK3-F-2 **16:15-16:30**	**Analysis of the Current Mirroring Method for Accurate AND-Type Hardware-Based Neural Network Systems** Yeonwoo Kim[1,2], Donghyun Ryu[1,2], and Woo Young Choi[1,2] *[1]Department of Electrical and Computer Engineering, Seoul National University, [2]Inter-university Semiconductor Research Center, Seoul National University*
WK3-F-3 **16:30-16:45**	**Compensation-Circuit-Added Current Mirrors for SNN Accuracy Improvement** Jonghyuk Park[1,2], Kyungchul Park[1,2], and Woo Young Choi[1,2] *[1]Department of Electrical and Computer Engineering, Seoul National University, [2]Inter-university Semiconductor Research Center, Seoul National University*
WK3-F-4 **16:45-17:00**	**Influence of Weight Transfer Error on Vector-Matrix Multiplication Operation** Junsu Yu[1,2], Sungmin Hwang[1,2], Taejin Jang[1,2], and Woo Young Choi[1,2] *[1]Department of Electrical and Computer Engineering, Seoul National University, [2]Inter-university Semiconductor Research Center, Seoul National University*
WK3-F-5 **17:00-17:15**	**The Effect of Fluorine Implantation on NBTI and Off Current in PMOS** Chang-Hun Han, Jong-Min Kim, Hyeon-Jeong Kang, Tae-Wook Kang, and Man-Lyun Ha *DB HiTek*
WK3-F-6 **17:15-17:30**	**Performance Enhancement Method of Line Tunnel Field-Effect (TFET) Using Hot Carrier Degradation** Jae Seung Woo[1,2] and Woo Young Choi[1,2] *[1]Department of Electrical and Computer Engineering, Seoul National University, [2]Inter-university Semiconductor Research Center, Seoul National University*
WK3-F-7 **17:30-17:45**	**Low-Temperature Deuterium Annealing to Recover Total Ionizing Dose-Induced Gate Dielectric Damage in MOSFETs** Dong-Hyun Wang, Sung-Su Yoon, Dae-Han Jung, Ja-Yun Ku, Khwang-Sun Lee, Jae-Hun Kim, Tae-Hyun Kil, and Jun-Young Park *Chungbuk National University*

2023년 2월 15일(수), 16:00-17:45
Room L (다이아몬드 II, 6층)

G. Device & Process Modeling, Simulation and Reliability 분과
[WL3-G] Thin Film and Memory Devices

좌장: 나현철 상무(DB 하이텍), 홍성민 교수(GIST)

WL3-G-1 **16:00-16:15**	**On the Scalability of the Amorphous InGaZnO Field-effect Transistors Compared with Silicon-on-insulator Field-effect Transistors** Ho Jung Lee, Donguk Kim, Jong-Ho Bae, Sung-Jin Choi, Dong Myong Kim, and Dae Hwan Kim *School of Electrical Engineering, Kookmin University*
WL3-G-2 **16:15-16:30**	**Characterization of Photovoltaic and Photoconductive Responses in Amorphous Oxide Semiconductor Thin-Film Transistors** Seung Hyeop Han, Han Bin Yoo, Haesung Kim, Jihee Ryu, Ju Young Park, Jong-Ho Bae, Sung-Jin Choi, Dae Hwan Kim, and Dong Myong Kim *Kookmin University*
WL3-G-3 **16:30-16:45**	**Characterization of Lateral Trap Distribution in AOS TFTs through Capacitance-Voltage Technique Combined with Extended Channel Conduction Factor** Han Bin Yoo, Haesung Kim, Jihee Ryu, Ju Young Park, Seung Hyeop Han, Hyo-In Yang, Jong-Ho Bae, Sung-Jin Choi, Dae Hwan Kim, and Dong Myong Kim *Kookmin University*
WL3-G-4 **16:45-17:00**	**Development of In-House Device Simulator for NAND Flash Memories** Sang-Mok Jeong and Sung-Min Hong *School of Electrical Engineering and Computer Science, GIST*
WL3-G-5 **17:00-17:15**	**Retention Characteristics with Cross-Temperature Effects in 3-D NAND Flash Memory** Ukju An, Gilsang Yoon, Donghyun Go, Jounghun Park, Donghwi Kim, Jongwoo Kim, and Jeong-Soo Lee *Department of Electrical Engineering, POSTECH*
WL3-G-6 **17:15-17:30**	**Statistical Distribution of DRAM Retention Time due to Geometric Fluctuation** Geonho Park and Sung-Min Hong *School of Electrical Engineering and Computer Science, GIST*
WL3-G-7 **17:30-17:45**	**Fault-tolerant RRAM-Based Convolutional Kernel Using Hybrid Precision Quantization for Image Processing** Seonuk Jeon[1], Eunryeong Hong[2], Heebum Kang[2], Hyun Wook Kim[2], Nayeon Kim[1], and Jiyong Woo[1,2] *[1]School of Electronics Engineering, Kyungpook National University, [2]School of Electronic and Electrical Engineering, Kyungpook National University*

2023년 2월 14일(화), 16:10-17:50
하이원 그랜드호텔(컨벤션타워), 메인로비 (5층)

[TP1] 포스터 세션 1

A. Interconnect & Package

심사위원: 이소연 교수(금오공과대학교), 연한울 교수(광주과학기술원)

TP1-001	**Effects of Phase Fraction Control on the Sn-Bi-In Ternary Solder with Low-Melting Temperature** Hyun-Dong Lee, Hoon Choi, and Hoo-Jeong Lee *Department of Smart Fab. Technology, Sungkyunkwan University*
TP1-002	**Wafer Level Package Flip Chip 저항 특성 개선을 위한 Metal Deposition 공정 RF Etch 조건에 따른 Aluminum Pad 표면 변화 연구** 박준영 *Package & Test, SK Hynix*
TP1-003	**Effect of Particle Removal on Cu and Oxide Surface of PR in Dicing Process for Die-to-wafer Bonding** Sangmin Lee, Jun-Young Choi, Gwangsik Oh, Sangwoo Park, and Sarah Eunkyung Kim *Seoul National University of Science and Technology*
TP1-004	**Atomic Layer Deposition of Ternary Germanium-Sulfur-Selenium for Three-dimensional Cross-point Arrays** Seungwon Park[1], Myoungsub Kim[1,2], Tae Hyun Kim[1], Seung-min Chung[1], and Hyungjun Kim[1] *[1]School of Electrical and Electronic Engineering, Yonsei University, [2]SK Hynix*
TP1-005	**Proposed Package Type for Evaluating Reliability of HBM Memory** Dong Soo Lee , Gun Hee Bae, Nam Hyun Lee, YS. Lee, and HS. Kim *Samsung Electronic Co., Ltd.*
TP1-006	**Optimization of the Plasma Treatment prior to Cu Barrier Dielectric Deposition for Copper Interconnection** SungMin Park, Joong-heon Kim, Dong-keun Lee, Su-jeong Kang, Woongsun Lim, Seonyong Hwang, Changhwan Kim, Sang Hyun Jung, and Kyung-Ho Park *System IC Platform Laboratory, KANC*
TP1-007	**Characteristic Enhancement of Low-k SiCOH Films by Laser Annealing** Sangwoo Lee[1], Jaeyoung Yang[2], Byeong Seong Cho[2], In Gyu Choi[2], and Taekjib Choi[1] *[1]Hybrid Materials Research Center and Faculty/Institute of Nanotechnology and Advanced Materials Engineering, Sejong University, [2]Research and Development Laboratory, TES Co., Ltd.*

TP1-008	**Characteristics of Carbon-rich SiCN Films Used as Dielectric Cu Diffusion Barrier Deposited by PECVD Using the 1-(Trimethylsilyl)pyrrolidine Precursor for Semiconductor Multilevel Metallization** Nam Wuk Baek, Chan Yong Seo, Gi Hoon Park, Sin Won Kang, and Dong Geun Jung *Department of Physics, Institute of Basic Science, Brain Korea 21 Physics Research Division, Sungkyunkwan University*
TP1-009	**Study on Growth Characteristics and Film Qualities of Atomic Layer Deposition $TiSiO_x$ for Multi-Patterning Process** Sanghun Lee[1], Seunggi Seo[1], Wontae Noh[2,3], Il-Kwon Oh[4], and Hyungjun Kim[1] *[1]School of Electrical and Electronic Engineering, Yonsei University, [2]Air Liquide Korea Co., [3]Yonsei University, [4]Department of Electrical and Computer Engineering, Ajou University*
TP1-010	**Study on the Interlayer Formation of ZrO_2 Thin Films by Atomic Layer Deposition on Electrodes for DRAM Applications** Heungsik Shin[1], Seongyeong Park[1], Seunggyu Na[1], Yujin Lee[2], Seung-min Chung[1], and Hyungjun Kim[1] *[1]School of Electrical and Electronic Engineering, Yonsei University, [2]Department of Chemical Engineering, Stanford University*
TP1-011	**Copper Core Solder Ball 반도체 패키지 접합 소재 신뢰성 평가** 마병진[1], 손재열[2], 이영우[2], 이슬기[2], 송재헌[2], 정태희[1], 최성순[1], 이관훈[1] *[1]한국전자기술연구원, [2]엠케이전자㈜*
TP1-012	**Thermal and Electrical Effects Dependence of Electromigration Reliability of Ruthenium and Molybdenum for Semiconductor Interconnects** Jungkyun Kim, Hakseung Rhee, and Kyung Min Kim *KAIST*
TP1-013	**Improvement on Mechanical Properties of Cu-Cu Bonding with Porous Cu** Kyung Deuk Min, Jun-Ho Jang, and Seung-Boo Jung *School of Advanced Materials Science and Engineering, Sungkyunkwan University*
TP1-014	**Mechanical Reliability Improvement of Cu-Mn Interconnect for Flexible Electronics through Self-forming Process** Jae-Myeong Shin[1], Seongi Lee[2], Won-Jun Lee[3], Seung-Hyeok Lee[1], Ju-Won Jun[1], Young-Chang Joo[2], and Byoung-Joon Kim[1] *[1]Department of Advanced Materials Engineering, Tech University of Korea, [2]Department of Materials Science and Engineering, Seoul National University, [3]Department of Nanotechnology and Advanced Materials Engineering, Sejong University*
TP1-015	**Stretchable Biodegradable Polyurethane as a Substate Materials for Stretchable Electronics** Jun Hyeon Lim, Won Bae Han, and Suk-Won Hwang *KU-KIST Graduate School of Converging Science and Technology, Korea University*
TP1-016	**구리-알루미늄 합금을 통한 유연소자 금속 배선의 피로 저항성 향상 메커니즘 규명** 현준혁[1], 이선기[2], 신상하[1], 김은정[1], 이소연[1], 주영창[2] *[1]금오공과대학교 신소재공학부, [2]서울대학교 재료공학부*

TP1-017	**Extraction of the Sheet Resistance under Metal Contact and Its Effect on the Specific Contact Resistance via the Bridge Contact Resistance Method** Jiyeong Yun and Hongsik Park *School of Electronic and Electrical Engineering, Kyungpook National University*
TP1-018	**Finite Element Analysis of Thermomechanical Stress in Passivation Dielectrics on Ultra Thick Metal Line** Seung-Ho Seo[1], So-Yeon Park[2], and Won-Jun Lee[2] *[1]R&D Team, GO Element Co., Ltd., [2]Department of Nanotechnology and Advanced Materials Engineering, Sejong University*
TP1-019	**Effects of Plasma Treatment on Cu-SiO_2 Hybrid Bonding** In-joo Kim[1], Hyeok-Jin Chu[1], Siye Lee[2], Woo Kyung Lee[2], and Sungdong Kim[2] *[1]Department of Mechanical Design and Robot Engineering, Seoul National University of Science and Technology, [2]Department of Mechanical System Design Engineering, Seoul National University of Science and Technology*

B. Patterning (Lithography & Etch Technology)

심사위원: 이진균 교수(인하대학교)

TP1-020	**High Aspect Ratio SiO_2 Contact Hole Etching Using Low-GWP Materials** Sanghyun You[1,2] and Chang-Koo Kim[1,2] *[1]Department of Chemical Engineering, Ajou University, [2]Department of Energy Systems Research, Ajou University*
TP1-021	**EUV 펠리클 주름이 반사도 변화와 패턴 임계치수에 미치는 영향 연구** 문승찬[1,3], 이동기[2,3], 최진혁[1,3], 안진호[1,2,3] *[1]한양대학교 나노반도체공학과, [2]한양대학교 신소재공학과, [3]EUV-IUCC (Industry University Collaboration Center)*
TP1-022	**EUV 펠리클 적용을 위한 $ZrSi_2$ 박막 특성 연구** 강영우[1,2], 위성주[1,2], 김하늘[1,2], 김원진[1,2], 김정연[1,2], 안진호[1,2] *[1]한양대학교 신소재공학과, [2]EUV-IUCC (Industry University Collaboration Center)*
TP1-023	**SiN_x Passivation Layer가 EUV 펠리클 방사 효율에 미치는 영향** 김원진[1,2], 김하늘[1,2], 김정연[1,2], 안진호[1,2] *[1]한양대학교 신소재공학과, [2]EUV-IUCC (Industry University Collaboration Center)*
TP1-024	**High-NA EUV용 Pt 기반 마스크 흡수 소재 연구** 김연수[1,3], 정동민[1,2,3], 조민선[2,3], 안진호[1,2,3] *[1]한양대학교 신소재공학과, [2]한양대학교 나노반도체공학과, [3]EUV-IUCC (Industry University Collaboration Center)*
TP1-025	**EUV 마스크 소재의 굴절계수 및 흡광계수 측정 방법 및 장치** 이동기[1,3], 문승찬[2,3], 최진혁[2,3], 안진호[1,2,3] *[1]한양대학교 신소재공학과, [2]한양대학교 나노반도체공학과, [3]EUV-IUCC (Industry University Collaboration Center)*
TP1-026	**Spin Coating Hard Mask를 활용한 SADP(Self-Aligned Double Patterning) 방법** Min Jun Bak[1,2], Jung Chul Song[1,2], and Shin Jae You[2] *[1]NNFC, [2]Chungnam National University*
TP1-027	**Fabrication of Platinum Nanodots Using Plasma-Assisted Solid-State Dewetting** Jinseok Choi, Jung Hyung Kim, and Hyo-Chang Lee *KRISS*

TP1-028	**Mechanism of Photopatternable PEDOT:PSS and Its Use in Stretchable Touch Sensor** Soon Joo Yoon[1], Soojeong Song[2], Jeongdae Ha[2], Kyung-In Jang[2], and Yoon Kyeung Lee[1] *[1]Division of Advanced Materials Engineering, Jeonbuk National University, [2]Department of Robotics Engineering, DGIST*
TP1-029	**OLED 화소 형성을 위한 불소화 포토레지스트 개발** 김가영[1], 박춘희[2], 최효은[1], 최유민[3], 정병준[3], 이진균[1,2] *[1]Program in Environment and Polymer Engineering, Inha University, [2]Department of Polymer Science and Engineering, Inha University, [3]Department of Materials Science and Engineering, University of Seoul*
TP1-030	**500nm-Line Etching of Cobalt Thin Films Using Organic Gas** Seon Jae Kim, Sung Yong Park, Seung Hyun Kim, Kyung Ho Oh, Su Myung Ha, and Chee Won Chung *Department of Chemical Engineering, Inha University*
TP1-031	**Iohexol-Based Compounds for Extreme UV Sensitizer in Chemically Amplified Resist System** Yejin Ku[1], Han Bit Park[2], Gyu Chan Wie[1], Jin-Kyun Lee[1,2], Jeongsik Kim[3], Myounghyun Hur[3], and Jaehyun Kim[3] *[1]Department of Polymer Science and Engineering, Inha University, [2]Program in Environmental and Polymer Engineering, Inha University, [3]Dongjin Semichem Co., Ltd.*
TP1-032	**Fluoroalkylated Tin-oxo Ladder Compounds as Photoresist Candidates for Extreme UV Lithography** Min Seung Kim[1], Ye Jin Ku[1], Ji Hun Woo[1], Sangsul Lee[2], Byung Jun Jung[3], and Jin-Kyun Lee[1] *[1]Program in Environment and Polymer Engineering, Inha University, [2]Pohang Accelerator Laboratory, POSTECH, [3]Department of Materials Science and Engineering, University of Seoul*
TP1-033	**Atomic Layer Etching of Zirconium Oxide Using Plasma Fluorination and Ligand Exchange with Titanium Chloride** Hyeongwu Lee[1], Yongjae Kim[1], and Heeyeop Chae[1,2] *[1]SKKU Advanced Institute of Nanotechnology, Sungkyunkwan University, [2]School of Chemical Engineering, Sungkyunkwan University*
TP1-035	**알파상 산화갈륨의 역-금속 촉매 습식 식각** Woong Choi[1], Dong Ryul Lee[2], and Ji Hyun Kim[1] *[1]School of Chemical and Biological Engineering, Seoul National University, [2]Department of Chemical and Biological Engineering, Korea University*
TP1-037	**Hierarchical Self-Assembly of Block Copolymers and PS Colloids for Transparent and Sensitive Gas Sensor Platform** Geon Gug Yang, Il-doo Kim, and Sang Ouk Kim *Department of Materials Science and Engineering, KAIST*
TP1-038	**SiO_2 Etch Rate in Plasma Etching of SiO_2 with Temperature** Hee-Tae Kwon, Ji-Hwan Kim, In-Young Bang, Sun-Hee Lee, Jae-Hyun Kim, Gi-Won Shin, Woo-Jae Kim, and Gi-Chung Kwon *Department of Electrical and Biological Physics, Kwangwoon University*

TP1-039	**Effective Wet Cleaning for Removal of Redeposited Materials on Dry-etched Copper Thin Films** Geum Bin Baek, Seung Hyun Kim, Yoon Jae Cho, and Chee Won Chung *Department of Chemical Engineering, Inha University*
TP1-040	**Etching Mechanism of Amorphous Hydrogenated Silicon Nitride Using Hydrogen Fluoride** Khabib Khumaini[1,2], Yewon Kim[1], Tanzia Chowdhury[1], Hye-Lee Kim[3], and Won-Jun Lee[1,3] *[1]Department of Nanotechnology and Advanced Materials Engineering, Sejong University, [2]Universitas Pertamina, [3]Metal-organic Compounds Materials Research Center, Sejong University*

H. Display and Imaging Technologies

심사위원: 박동욱 교수(서울시립대학교), 안지훈 교수(한양대학교)

TP1-041	**Electrovibration Tactile Layer for Stretchable Touch Display** Beom Hee Park and Yei Hwan Jung *Department of Electronic Engineering, Hanyang University*
TP1-042	**Transfer Printing Technology on 3D Curved Surface Using PVA Stamp** Jun Hee Lee and Yei Hwan Jung *Department of Semiconductor Display Technology, Hanyang University*
TP1-043	**Efficient and Stable InP Quantum Dot Light-Emitting Diode via Hole Transport Material Mixed Emissive Layer** Ganghyun Park[1,2,3] and Jeonghun Kwak[1,2,3] *[1]Department of Electrical and Computer Engineering, Seoul National University, [2]Inter-university Semiconductor Research Center, Seoul National University, [3]Soft Foundry Institute, Seoul National University*
TP1-044	**A Comparative Study of Zr Precursor for Application to High-k Gate Insulator of the Next Generation Thin Film Transistor Using Atomic Layer Deposition** Min Kyeong Nam[1,2], Aejin Lee[1,2], Dong Hee Han[1,2], Seungwoo Lee[1,2], and Woojin Jeon[1,2] *[1]Department of Advanced Materials Engineering for Information and Electronics, Kyung Hee University, [2]Integrated Education Program for Frontier Science and Technology (BK21 Four), Kyung Hee University*
TP1-045	**Solution Processed High Performance ZnO/Quantum Dots Phototransistor via ZrO_2 Additional Layer for Visible Light Color Selective Image Sensor** Jun Hyung Jeong[1,2], Seong Jae Kang[1,2], and Seong Jun Kang[1,2] *[1]Department of Advanced Materials Engineering for Information and Electronics, Kyung Hee University, [2]Integrated Education Program for Frontier Science and Technology (BK21 Four), Kyung Hee University*
TP1-046	**Controllable CdSe/ZnS Thin Film through Layer-by-layer Deposition based on Spray Coating Method** Min Gye Kim[1,2], Jin Hyun Ma[1,2], Min Ho Park[1,2], and Seong Jun Kang[1,2] *[1]Department of Advanced Materials Engineering for Information and Electronics, Kyung Hee University, [2]Integrated Education Program for Frontier Science and Technology (BK21 Four), Kyung Hee University*
TP1-047	**Resistance Modulation of Surfactant-Modified PEDOT:PSS by Selective Irradiation of Ultraviolet for Patterned Transparent Conductive Electrodes** Hwaeun Park[1,2], Sujin Jeong[1,2], Hyungsoo Yoon[1,2], Dahyun Kim[1,2], and Yongtaek Hong[1,2] *[1]Department of Electrical and Computer Engineering, Seoul National University, [2]Inter-university Semiconductor Research Center, Seoul National University*
TP1-048	**Evaluation of Contact Resistance Measurement Methods in Solution-Processed Carbon Nanotube Thin-Film Transistors** Min Kyun Kang[1,2], Hyunjun Yoo[1,2], and Yongtaek Hong[1,2] *[1]Department of Electrical and Computer Engineering, Seoul National University, [2]Inter-university Semiconductor Research Center, Seoul National University*

TP1-049	**Compensating Threshold Voltage Variation by a Ferroelectric Storage Capacitor without Compensating Circuit for Displays** Taewon Jin[1], Seong Ui An[1], Cheol Jun Kim[2], Jae-Hoon Han[3], and Younghyun Kim[1] *[1]Department of Photonics and Nanoelectronics, BK 21 FOUR ERICA-ACE Center, Hanyang University, [2]Department of Applied Physics, Center for Bionano Intelligence Education and Research, Hanyang University, [3]Center for Opto-Electronic Materials and Devices, KIST*
TP1-050	**이미지의 텍스처 특징을 활용한 스티칭 하드웨어 설계** Chang Yong Lee, So-Young Kwon, and Yong Hwan Lee *Kumoh National Institute of Technology*
TP1-051	**원단폭 측정 알고리즘 하드웨어 설계** So Young Kwon, Yong Hwan Lee, and Chang Yong Lee *Kumoh National Institute of Technology*
TP1-052	**Light Extraction Simulation in Cd-free QLEDs Using COMSOL Multiphysics** Minjun Kim[1,2] and Jeonghun Kwak[1,2,3] *[1]Department of Electrical and Computer Engineering, Seoul National University, [2]Inter-university Semiconductor Research Center, Seoul National University, [3]Soft Foundry Institute, Seoul National University*
TP1-053	**AC Characteristics of the Inverters based on Oxide Thin-Film Transistors** Jang Hoo Lee, Hyuck Su Lee, Seo Jin Kang, and Byung Seong Bae *School of Electronics and Display Engineering, Hoseo University*
TP1-054	**Sulfuric Acid Treated PEDOT:PSS Electrodes with High Work Function for CdSe/ZnS Quantum Dot Light Emitting Diodes** Jin Hyun Ma[1,2], Mingye Kim[1,2], Min Ho Park[1,2], and Seong Jun Kang[1,2] *[1]Department of Advanced Materials Engineering for Information and Electronics, Kyung Hee University, [2]Integrated Education Institute for Frontier Science and Technology (BK21 Four), Kyung Hee University*
TP1-055	**Impact of Channel Length Scaling Below 100 nm for Vertical-Channel Thin Film Transistors Using Composition-Modified In-Ga-Zn-O Channels** Chae-Eun Oh[1], Hyun-Min Ahn[1], Young-Ha Kwon[2], Nak-Jin Seong[2], Kyu-Jeong Choi[2], Chi-Sun Hwang[3], and Sung-Min Yoon[1] *[1]Kyung Hee University, [2]NCD Co., Ltd., [3]ETRI*
TP1-056	**High Sensitivity Repeater Detection with Optical Wafer Inspection Using Image Stack Algorithm** Soonjae Kwon and Kyuyoung Kim *R&D, SK Hynix*
TP1-057	**2540-ppi Flexible-TFT-on-OLEDs Driven by 0.5-V Supply-voltage Solid-electrolyte-gated Carbon Nanotube TFTs** Haksoon Jung[1], Taesu Choi[1], Insang You[1], Seongmin Heo[1], Gwon Byeon[1], Mingyu Kim[1], Jimin Kwon[2], and Yong-Young Noh[1] *[1]Department of Chemical Engineering, POSTECH, [2]Department of Electrical Engineering, UNIST*

TP1-058	**Design of Facile Doping Process Using ALD-derived Gate-Stack Structures for High-Performance Self-Aligned Coplanar IGZO Thin Film Transistors** Seo-Hyun Moon[1], Young-Ha Kwon[2], Nak-Jin Seong[2], Kyu-Jeong Choi[2], and Sung-Min Yoon[1] *[1]Kyung Hee University, [2]NCD Co., Ltd.*
TP1-059	**Leakage Prevention Scan Driver Using Double-Gate Structure of Oxide TFT** Eunho Kim, Hwarim Im, and Yong-Sang Kim *Department of Electrical and Computer Engineering, Sungkyunkwan University*
TP1-060	**A New Pixel Circuit with a Low-Temperature Polycrystalline Oxide Thin-Film Transistor for Portable Displays** Yan Li, Eun Kyo Jung, Hwarim Im, and Yong-Sang Kim *Department of Electrical and Computer Engineering, Sungkyunkwan University*
TP1-061	**MXene-Derived 2D V_2O_5 Nanosheet for High Performance Multicolor Electrochromic Device** Jin Kim[1], Kyo Haeng Lee[1,3], Sukki Lee[2], Seoungyoung Park[1], Haomin Chen[2], Soonmin Yim[1], Wooseok Song[1], Sun Sook Lee[1], Dae Ho Yoon[3], Seokwoo Jeon[2], and Ki-Seok An[1] *[1]KRICT, [2]KAIST, [3]Sungkyunkwan University*
TP1-062	**Radiation Robust Oxide-TFT-Based Complementary Logic Circuits** Hyun-Ah Lee[1], Kie Yatsu[1], Chae-Eun Oh[1], Ick-Joon Park[2], and Hyuck-In Kwon[1] *[1]Chung-Ang University, [2]Joongbu University*
TP1-063	**Implementation of Ambipolar Tin Oxide Thin-Film Transistors Using Hydrogen Plasma Treatment** Seung-Hyun Lim[1], Kang-Hwan Bae[1], Jong-Sang Oh[1], Ick-Joon Park[2], and Hyuck-In Kwon[1] *[1]Chung-Ang University, [2]Joongbu University*
TP1-064	**Effects of Rapid Thermal Annealing Temperature on p-type NO_2 Gas Sensing Properties of RF Sputtered Tin Oxide Thin Films** Seung-Hyun Lim[1], Jong-Sang Oh[1], Ick-Joon Park[2], and Hyuck-In Kwon[1] *[1]Chung-Ang University, [2]Joongbu University*
TP1-065	**Controllable Performance on Nano-laminated (InOx)n(GaZnOy)m TFT via PEALD** Gyeong-min Jeong, Won-Bum Lee, and Jin Seong Park *Division of Materials Science and Engineering, Hanyang University*
TP1-066	**Determination of Interface and Bulk Trap Densities in TG-SA Coplanar IGZO TFTs Using Low-Frequency C-V and SCLC Techniques** Dong-Ho Lee, Chae-Eun Oh, Su-Hyeon Lee, Yeong-Gil Kim, Ye-Lim Han, and Hyuck-In Kwon *School of Electrical and Electronics Engineering, Chung-Ang University*

TP1-067	**DPP-DTT Channel Organic Thin-Film Transistors Fabricated on a Parylene-C Substrate** Yoojeong Ko, Hyo-Won Jang, KyungMin Kim, Dong-Wook Park, and Hyeok Kim *School of Electrical and Computer Engineering, University of Seoul*
TP1-068	**Thin-film Encapsulation for Top-emission Polymer Light-emitting Diodes with Solution-processed Encapsulation** Dahyun Kim[1,2], Sujin Jeong[1,2], Hyungsoo Yoon[1,2], and Yongtaek Hong[1,2] *[1]Department of Electrical and Computer Engineering, Seoul National University, [2]Inter-university Semiconductor Research Center, Seoul National University*
TP1-069	**MLD Thin Film with Surface Modification and Hydrogen Permeability Control through Plasma Treatment** Gi-Beom Park, Tae-yeon Kim, GeonHo Baek, and Jin-Seong Park *Division of Materials Science and Engineering, Hanyang University*
TP1-070	**Achieving of Ultra-Low Power InGaZnO Thin-Film Transistor by Using Triple-Layer Stacked of High-k Dielectrics** Cheol Hee Choi, Seong Hun Yoon, Sang Won Chung, and Jae Kyeong Jeong *Department of Electronic Engineering, Hanyang University*
TP1-071	**TiO_x Insertion Effects on Reliable Resistive Switching for IGZO/ZrO_2 Bilayered Resistive Random Access Memory (RRAM) Device** Ajit Kumar, Myoung Seok Lee, Yoonhee Kim, and Sung Hun Jin *Department of Electronic Engineering, Incheon National University*

I. MEMS & Sensors Systems

심사위원: 박윤석 교수(경희대학교), 심교승 교수(UNIST)

TP1-072	**폴리에틸렌이민 기능화를 이용한 단일벽 탄소 나노튜브 기반 일산화질소 가스센서의 감도 향상 연구** June-Heang Choi, Jong Il Park, and Young Tae Byun *Sensor System Research Center, KIST*
TP1-073	**Charge Trap Based Threshold Modulative Artificial GABAergic Nociceptor** Geunyoung Kim and Kyung Min Kim *Department of Materials Science and Engineering, KAIST*
TP1-074	**Micro-heater Designs for Wireless Electronic Devices** Sangho Park and Gunchul Shin *School of Materials Science and Engineering, University of Ulsan*
TP1-075	**FET-type Chemiresistive Hydrogen Sensor Using Single Walled Carbon Nanotubes** Tae-Yong Lee, Dong Jun Jang, Woo Jin Jo, Ryu-Hyong Jeon, and Min-Woo Kwon *Department of Electric Engineering, Gangneung-Wonju National University*
TP1-076	**A Highly Sensitive Biosensor Modified with Optimized Nanostructures for Alzheimer's Disease Biomarker Detection in Human Samples** Ariadna Schuck, Hyo Eun Kim, and Yong-Sang Kim *Department of Electrical and Computer Engineering, Sungkyunkwan University*
TP1-077	**Gasistor Array-Based Intelligent NO Gas Monitoring System** Myoungsu Chae and Hee-Dong Kim *Department of Electrical Engineering and Convergence Engineering for Intelligent Drone, Sejong University*
TP1-078	**Self-Sensitivity Programmable pH Sensor Platform based on Multi-Functional Charge-Trap-Flash-Type Ion-Sensitive-Field-Effect-Transistor** Yeong-Ung Kim and Won-Ju Cho *Department of Electronic Materials Engineering, Kwangwoon University*
TP1-079	**High Performance Humidity Sensor based on Biomaterial** Maryam Khan and Woo Young Kim *Department of Electronic Engineering, Jeju National University*

TP1-080	**ZnO/Graphene Hybrid Thin Film for CO2 Gas Sensing Application** June Soo Kim, Soon Yeol Kwon, Seung Deok Kim, Jae Yong Lee, Maeum Han, Da Ye Kim, Hyunjun Kim, Noah Jang, and Seong Ho Kong *School of Electronic and Electrical Engineering, Kyungpook National University*
TP1-081	**Modulation of p-SnO Thin-Film Transistor Electrical Characteristics by Controlling the Al_2O_3 Interfacial Layer Annealing Temperature** Sahng Ik Mun[1,2], Yong Hee Lee[1,2], Suk In Kang[1,2], Jin Heon Choi[1,2], Sun Jin Lee[1,2], and Cheol Seong Hwang[1,2] *[1]Department of Materials Science and Engineering, Seoul National University, [2]Inter-university Semiconductor Research Center, Seoul National University*
TP1-082	**Detecting Binding Affinity of Mismatch DNA Using Microparticles Observed in DEP System** Gyeong Jun Min, Kang In Yeo, and Sang Woo Lee *Department of Biomedical Engineering, Yonsei University*
TP1-083	**High-Performance Dopamine-Sensitive Biosensor Platform based on Extended Gate Field-Effect Transistor with Dual-Gate Structure on SOI Substrate** Tae-Hwan Hyun and Won-Ju Cho *Department of Electronic Materials Engineering, Kwangwoon University*
TP1-084	**실리콘 나노와이어 기반 초소형 소프트 압력센서 공정 개발** 김태엽[1,3,4], 박정현[2,3,4], 조동일[1,2,3,4] *[1]서울대학교 전기정보공학부, [2]서울대학교 바이오엔지니어링, [3]서울대학교 자동화시스템 공동연구소, [4]서울대학교 반도체공동연구소*
TP1-085	**Improvement of Tesla Valve Performance Using Obstacle for Fixed-Valve Application** Hyunjun Kim, Maeum Han, Soon Yeol Kwon, Jae Yong Lee, Seung Deok Kim, June Soo Kim, Noah Jang, Jiajie Wang, Da Ye Kim, and Seong Ho Kong *School of Electronic and Electrical Engineering, Kyungpook National University*
TP1-086	**High-Throughput Multi-channel Microfluidic Resistive Pulse Sensing for Micron Analysis** Da Ye Kim, Soon Yeol Kwon, Seung Deok Kim, Jae Yong Lee, June Soo Kim, Maeum Han, Hyunjun Kim, Noah Jang, Adeeba Mansoor, and Seong Ho Kong *School of Electronic and Electrical Engineering, Kyungpook National University*
TP1-088	**Effects of Annealing Conditions on NO_2 Gas Response and Optimal Operating Temperature in Resistor-Type Gas Sensors** Hunhee Shin[1,2], Gyuweon Jung[1,2], Seongbin Hong[1,2], Yujeong Jeong[1,2], Wonjun Shin[1,2], Jinwoo Park[1,2], Donghee Kim[1,2], Kangwook Choi[1,2], Jae-Joon Kim[1,2], and Jong-Ho Lee[1,2] *[1]Department of Electrical and Computer Engineering, Seoul National University, [2]Inter-university Semiconductor Research Center, Seoul National University*
TP1-089	**NO_2 Gas Sensing Properties of FET-type Gas Sensor with Poly-Si Used as an Embedded Micro-heater and Control-gate** Jinwoo Park[1,2], Seongbin Hong[1,2], Yujeong Jeong[1,2], Gyuweon Jung[1,2], Wonjun Shin[1,2], Chayoung Lee[1,2], Donghee Kim[1,2], Kangwook Choi[1,2], Hunhee Shin[1,2], Jae-Joon Kim[1,2], and Jong–Ho Lee[1,2] *[1]Department of Electrical and Computer Engineering, Seoul National University, [2]Inter-university Semiconductor Research Center, Seoul National University*

TP1-090	**DNN Assisted Epidermal Piezoresistive Sensor for Multimodal Sensing and Inference** Jihwan Kim, Jeong Woo Chae, Byeong Woon Lee, and Sang Min Won *Sungkyunkwan University*
TP1-091	**Machine Learning Enhanced Predictive Gas Sensor for Identifying Specific Analytes from Mixed Environment** Garam Bae, Wooseok Song, and Ki-Seok An *Thin Film Materials Research Center, KRICT*
TP1-092	**Junctionless Field Effect Transistor Based CO_2 Gas Sensor** Inkyum Kim[1,2] and Daewon Kim[2,3] *[1]Department of Electronics and Information Convergence Engineering, Kyung Hee University, [2]Institute for Wearable Convergence Electronics, Kyung Hee University, [3]Department of Electronic Engineering, Kyung Hee University*
TP1-093	**Ultra-flexible Organic Photoplethysmography (PPG) Sensors Integrated with Optical Waveguide for Real-time Monitoring of Driver's Health Condition** Jaehyun Kim and Sungjun Park *Department of Electrical and Computer Engineering, Ajou University*
TP1-094	**코르티졸 센싱을 위한 Parylene-C 기반 압타머 전극 개발** Soo Kyeong Kim, Hyungjun Choi, Jae-won Park, and Dong-Wook Park *School of Electrical and Computer Engineering, University of Seoul*
TP1-095	**TCAD Simulation of a Single-unit Rectifying Triboelectric Tactile Sensor** Hyunwoo Cho[1,3] and Daewon Kim[2,3] *[1]Department of Electronics and Information Convergence Engineering, Kyung Hee University, [2]Department of Electronic Engineering, Kyung Hee University, [3]Institute for Wearable Convergence Electronics, Kyung Hee University*
TP1-096	**Multifunctional Optoelectronic Logic Gate by Using Layered Perovskite Photodiode** Woochul Kim[1], Hyeonghun Kim[2], and Yusin Pak[1] *[1]Sensor System Research Center, KIST, [2]Ceramic Total Solution Center, KICET*
TP1-097	**A Flexible and Stretchable Capacitive Micromachined Ultrasonic Transducer with Wafer-scaled Trench Fabrication** Hae Youn Kim[1], Dong-Hyun Kang[1], ShinYong Shim[1], Butrus T. Khuri-Yakub[2], and Byung Chul Lee[1] *[1]Bioinics Research Center, KIST, [2]Department of Electrical Engineering, Stanford University*
TP1-098	**Investigation of Electrical Performance of Transistor with Additional Dielectric Layer for Trapped Triboelectric Charges** Jonghyeon Yun[1] and Daewon Kim[2] *[1]Department of Electronics and Information Convergence Engineering, Kyung Hee University, [2]Department of Electronic Engineering, Kyung Hee University*

TP1-099	**Performance Enhancement ZnO Pressure Sensor Stacking Ferroelectric Layer** Do Yeon Lee, Woon San Go, Ki Nam Kim, Jun Ho Byun, Eun Gi Kim, Eun A Koo, So Yeon Gwon, and Ga Won Lee *Chungnam National University*
TP1-100	**하이브리드 Schottky-Ohmic 후면전극을 통한 실리콘 모래시계 나노선 포토다이오드의 광검출 특성 향상 연구** 오세인[1], 김현규[1], 윤봉노[1], 남은서[2], 배학열[1,2], 김기현[1,2] *[1]전북대학교 전자정보공학부, [2]전북대학교 전자공학부*
TP1-101	**온도 변화에 따른 특성 보정을 위한 단일 칩 온도 센서** Je Hyeok Yu and Jung-Hoon Chun *Department of Semiconductor and Display Engineering, Sungkyunkwan University*
TP1-102	**Real-Time Volumetric Ultrasound Imaging Using Annular Capacitive Micro-Machined Ultrasonic Transducer** Young Seok Kwon[1,2], Hae Youn Kim[1], Dong-Hyun Kang[1], Dong Hun Kim[1], Seonghun Cho[1,2], Keun Young Huh[1,3], Jae-Woong Jeong[2], and Byung Chul Lee[1] *[1]Bionics Research Center, KIST, [2]School of Electrical Engineering, KAIST, [3]School of Electrical Engineering, Korea University*
TP1-103	**Wearable Ear Canal Wireless Pulse Oximeter for Sleep Monitoring** Joon-Woo Kim, Hyejun Kim, and Jeonghyun Kim *Department of Electronic Convergence Engineering, Kwangwoon University*

N. VLSI CAD

심사위원: 송대건 교수(경북대학교), 강석형 교수(POSTECH)

TP1-104	**Full-swing Ternary Circuit Design Methodology based on Inkjet-printed Anti-Ambipolar Transistors (AAT) and PMOS** Jongbeom Kim[2] and Taigon Song[1,2] *[1]School of Electronics Engineering, Kyungpook National University, [2]School of Electronic and Electrical Engineering, Kyungpook National University*
TP1-105	**T-CMOS 기반 회로의 성능 개선을 위한 추가적인 경로 설정** Jonghyun Ko[1] and Taigon Song[1,2] *[1]School of Electronic and Electrical Engineering, Kyungpook National University, [2]School of Electronics Engineering, Kyungpook National University*
TP1-106	**PPA Structure for Effective Implementation of Multiply-Accumulator Unit** Si Eun Lee and Jeong Beom Kim *Kangwon National University*
TP1-107	**Design of Depletion-type MOSFET Based Ternary Logic in 32nm Node** Hyundong Lee and Taigon Song *School of Electronic and Electrical Engineering, Kyungpook National University*
TP1-109	**Machine Learning Based Gate Size Adjustment for Crosstalk Fault Tolerant in 3D-IC** Myeong-Woo Jin, In-Hye Kye, Seok-Byum Kim, and Juho Kim *Sogang University*
TP1-110	**회로 면적 감소를 위한 스탠다드 셀의 렉틸리니어 형태 재설계** 이유진, 김경창, 현대준 *청주대학교 전자공학과*
TP1-111	**다양한 테이블 크기로 구성된 스탠다드 셀 타이밍 라이브러리** 정민지, Manikanta Prahlad Manda, 현대준 *청주대학교 전자공학과*
TP1-112	**Netlist의 Graph Structure를 활용한 Routing Congestion 예측** Seongbin Kwon, Kyungjun Min, and Seokhyeong Kang *Department of Electrical Engineering, POSTECH*

TP1-113	**Routing Congestion Estimation Using Machine Learning** Hyunah Yu, Seungeun Lee, Jakang Lee, and Seokhyeong Kang *POSTECH*
TP1-114	**강화학습을 이용한 배치 적법화** Soonhyun Kwon, Sehyeon Kim, Chanhee Lee, Sung-Yun Lee, and Seokhyeong Kang *POSTECH*

R. Semiconductor Software

심사위원: 권세진 교수(강원대학교), 김영재 교수(서강대학교)

TP1-115	**Flexible Physical Memory Allocator for TLB Coalescing in System on Chip** Dai Duong Tran[1], Yung-Cheol Byun[2], and Jae Young Hur[1] *[1]Department of Electronic Engineering, Jeju National University, [2]Department of Computer Engineering, Jeju National University*
TP1-116	**Two-layer Prediction Model for Efficient Cache Uses in Cloud Computing** Jaehyun Kim and Eui-Young Chung *Department of Electrical and Electronic Engineering, Yonsei University*
TP1-117	**BEPA: Bulk Erase based on Process Awareness for Cloud SSD Caches** Sang Jin Kim, Gi Lee, Byoung Jin Kim, and Eui-Young Chung *School of Electrical and Electronic Engineering, Yonsei University*
TP1-118	**OSD 하드웨어 성능에 따른 Ceph 성능 분석** Cheolhyeon Kwon and Donghyun Kang *Changwon National University*
TP1-119	**MinIO 오브젝트 스토리지의 업로드 성능 분석** Jaeha Shin[1], Seongryong Ryu[2], Muhyeon Kim[2], and Donghyun Kang[1] *[1]Changwon National University, [2]Ingkle*
TP1-120	**드론 원격센싱에서 효율적인 데이터 전송을 위한 압축 기반 연산 오프로딩** 장두혁, 김성진, 정병현, 박진용, 허준영 *한성대학교 컴퓨터공학부*
TP1-122	**딥러닝 기반 Hot/Cold 분류를 이용한 SSD 쓰기 증폭 개선** 최성찬, Ganchuluun Narantsatsralt, Ariunbold Odgerel, 윤성준, 안성용 *Pusan National University*
TP1-123	**ZNS SSD를 위한 리눅스 컨테이너별 Zone 할당 정책 구현** 이석준, 최영인, 임경민, 안성용 *Pusan National University*

S. Chip Design Contest

심사위원: 심재윤 교수(POSTECH), 양병도 교수(충북대학교), 이규호 교수(UNIST), 이영주 교수(POSTECH), 이정협 교수(DGIST), 이종열 교수(전북대학교), 채영철 교수(연세대학교)

TP1-124	**전기생체신호처리용 재구성 가능한 SAR – SS ADC 설계** 강민성, 양제이, 오성광, 문철우, 윤광섭 *인하대학교*
TP1-125	**An Energy-Scalable and Low-Power CNN Inference Model with Hybrid Processing-In-Memory Architecture** Sangwoo Jung, Jaehyun Lee, Huiseong Noh, Jong-Hyeok Yoon, and Jaeha Kung *DGIST*
TP1-126	**A CMOS Optoelectronic IC with Low-Cost Test Setup for LiDAR Sensors** Ji-Eun Joo[1,2], Yu Hu[1,2], Xinyue Zhang[1,2], Myung-Jae Lee[3], Ji-Hoon Kim[1,2], and Sung Min Park[1,2] *[1]Department of Electronic and Electrical Engineering, Ewha Womans University, [2]Graduate Program in Smart Factory, Ewha Womans University, [3]Post-Silicon Semiconductor Institute, KIST*
TP1-127	**A CMOS Optoelectronic Receiver for LiDAR Sensors** Yu Hu[1,2], Ji-Eun Joo[1,2], Xinyue Zhang[1,2], Ji-Hoon Kim[1,2], and Sung Min Park[1,2] *[1]Department of Electronic and Electrical Engineering, Ewha Womans University, [2]Graduate Program in Smart Factory, Ewha Womans University*
TP1-128	**High-Speed, Low Compliance Voltage Pulse Frequency Modulation Based Stimulator for a Subretinal Implant** Yeon Ji Oh[1], Jong Gi Hong[2], and Jung Suk Kim[2] *[1]Korea University, [2]Gachon University*
TP1-129	**A Charge-Sharing Based 8T SRAM In-Memory Computing for Edge DNN Acceleration** Hyeyeong Lee, Kyeongho Lee, and Jongsun Park *Department of Electrical Engineering, Korea University*
TP1-130	**High-Performance Receiver for High-Impact Accelerometers** Song-I Cheon and Minkyu Je *School of Electrical Engineering, KAIST*
TP1-131	**Logic-Compatible E-Flash Computing-in-Memory Macro Using Dual Slope Computation** Jongyoon Choi, Injun Choi, and Minkyu Je *School of Electrical Engineering, KAIST*

TP1-132	**An 8-26 Gb/s Single Loop Reference-less CDR with Unrestricted Frequency Acquisition** Hyung-Wook Lee, Kyeong-Min Ko, and Jin-Ku Kang *School of Electrical and Computer Engineering, Inha University*
TP1-133	**Reconfigurable Multi-Output Regulating Switched-Capacitor DC-DC Converter for Wireless Power Transfer** Unbong Lee and Minkyu Je *School of Electrical Engineering, KAIST*
TP1-134	**An Intra-Body Power Transfer System Achieving 136μW Power Delivered to the Load at 1.8V DC Output with Continuous Maximum Resonant Power Tracking** Hyungjoo Cho[1], Ji-Hoon Suh[1], Gichan Yun[1], Sohmyung Ha[2], and Minkyu Je[1] *[1]KAIST, [2]New York University Abu Dhabi*
TP1-135	**A Front-end ASIC with Sub-array Beamforming for Ring-type CMUT-Based Endoscopic Ultrasound Imaging System** Gichan Yun, Kyeongwon Jeong, and Minkyu Je *School of Electrical Engineering, KAIST*
TP1-136	**Neural Network-Based Real-time Super-Resolution Processor** Hong Keun Ahn and Seong-Ook Jung *Yonsei University*
TP1-137	**Split WL 6T SRAM Based Bit Serial Computing-in-Memory Macro** Young Kyu Lee, Dong Han Ko, Seokhee Cho, Minjune Yeo, and Seong-Ook Jung *School of Electrical Engineering, Yonsei University*
TP1-138	**Wireless Implantable Glucose Monitoring Micro-Device Using a Fluorescent Hydrogel Sensor** Hyeonkeon Lee[1], Honghyeon Park[2], Mi Song Nam[3], Taein Kim[3], Yun Jung Heo[3], and Sanghoek Kim[3] *[1]LIG Nex[1] Co., Ltd., [2]Silicon Mitus, Inc., [3]Kyung Hee University*
TP1-139	**Fully Digital 2T1C Embedded DRAM Based Compute-in-Memory Macro** In-Jun Jung, Young Kyu Lee, Do Han Kim, Dong Han Ko, and Seong-Ook Jung *School of Electrical Engineering, Yonsei University*
TP1-140	**Analog Synapse-Based Neuromorphic System for Deep Neural Network Process** Minseong Um[1], Minil Kang[2], and Hyung-Min Lee[1] *[1]School of Electrical Engineering, Korea University, [2]Department of Semiconductor System Engineering, Korea University*

TP1-141	**삼진 입력 연산이 가능한 6T SRAM 기반 인-메모리 컴퓨팅 어레이** Hyunmyung Oh[1], Nameun Kang[1], and Jae-Joon Kim[2] *[1]POSTECH, [2]Seoul National University*
TP1-142	**엣지 디바이스를 위한 고효율 인-메모리 음성인식 시스템** Jihoon Park[1], Hyunmyung Oh[2], and Jae-Joon Kim[1] *[1]Seoul National University, [2]POSTECH*
TP1-143	**A 2.4-GHz ADPLL with Coarse and Fine TDCs** Dong-Seob Shin and Young-Chan Jang *Electronic Engineering, Kumoh National Institute of Technology*
TP1-144	**Design of Low-power Discrete-time Delta-sigma ADC for Sensor Applications** Seo-Jin Kim, Hye-rin Cho, Sung-joo Lee, Byeong-seok Kang, Seong-min Jang, and Young-sik Kim *Handong Global University*
TP1-145	**In-Vehicle Network Processor Supporting CAN-FD and LIN** Kwang Hyun Go, Do Young Choi, Jeong Eun Kim, and Seung Eun Lee *Seoul National University of Science and Technology*
TP1-146	**A Fully Integrated Circuit for High Current Multiple-Output** Jeongmyeong Kim and Wanyeong Jung *KAIST*
TP1-147	**넓은 파워 범위와 스위칭 주파수 최소화 기법을 사용한 고효율 시간 기반 MPPT 회로** Van-Thai Dang, Myeong-Gyu Yang, Chung-Hee Jang, Yong-Shim, and Kwang-Hyun Baek *Chung-Ang University*
TP1-148	**디지털 기반 시간 도메인 이중모드 비교기를 사용한 0.5V 10-bit 3-MS/s 비동기 2-then-1b/cycle 변환 저전력 10비트 축차 비교형 레지스터 아날로그-디지털 변환기** Dong-Kyu Jung, Kiho Seong, Jae-Soub Han, Jee-Taeck Seo, Yong Shim, and Kwang-Hyun Baek *Chung-Ang University*
TP1-149	**낮은 복잡도를 갖는 하이브리드 비교기-charge 컨트롤을 이용한 SIMO DC-DC 컨버터** Myeong-Gyu Yang, Ngoc-Son Pham, Seong-Wook Choi, Keun-Yong Chung, Dong-Hyun Shin, Kwang-Hyun Baek, and Yong Shim *Chung-Ang University*

TP1-150	**A 1GHz RF Energy Harvester with -36dBm Input Power Sensitivity** Yoomi Park and Sangjin Byun *Division of Electronics and Electrical Engineering, Dongguk University*
TP1-151	**다중 신호용 수신기를 위한 저면적 On-the-Fly 코드 생성기 구현** 김민수, 황지우, 황용택, 유호영 *충남대학교 전자공학과*
TP1-152	**Low-noise Biopotential Sensor and Neural Stimulator** Geunchang Seong, Dongyeol Seok, Minjae Kim, and Chul Kim *KAIST*
TP1-153	**Nearest Neighbor Search Using Nanoelectromechanical (NEM) Memory Switch-Based Content-Addressable Memory** Jin Wook Lee[1,2], Jae Seong Lee[3], and Woo Young Choi[1,2] *[1]Department of Electrical and Computer Engineering, Seoul National University, [2]Inter-university Semiconductor Research Center, Seoul National University, [3]Department of Electronic Engineering, Sogang University*
TP1-154	**전력 합성을 위한 수평 AMC 구조 H-plane 확장 도파관 칩 패키징** 김준성, 조준녕 *Department of Electrical Engineering, Korea University*
TP1-155	**A 4x Time-Interleaved 4-GS/s 7-Bit SAR ADC with 2-Then-1-Bit/Cycle Conversion** Jihyun Baek and Hyungil Chae *Konkuk University*
TP1-156	**A 10Gbps, All-Digital True Random Number Generator Using Middle Square Method** Jonghyun Kim and Hyungil Chae *Konkuk University*
TP1-157	**Ternary Content-Addressable Memory (TCAM) Using Nanoelectromechanical (NEM) Memory Switches** Geun Tae Park[1,2], Jae Seong Lee[3], and Woo Young Choi[1,2] *[1]Department of Electrical and Computer Engineering, Seoul National University, [2]Inter-university Semiconductor Research Center, Seoul National University, [3]Department of Electronic Engineering, Sogang University*
TP1-158	**High Precision Current Sensor Chip for Battery Management System of Electric Vehicles** Sang Bo Park, Min Gu Kim, Go Eun Woo, and Hyung Won Kim *Chungbuk National University*

TP1-159	**Scalable CNN Accelerator SoC with Integrated RISC-V Processor Core** DongYeong Lee, Hayot, Ali, Junaid, GiTae Park, SangBo Park, Wajahot, and HyungWon Kim *Chungbuk National University*
TP1-160	**인체 통신 시스템에서 인간 상호 작용 감지를 위한 노이즈 내성 강화 커패시턴스 판독 회로** Seong-Wook Choi, Kiho Seong, Jong-Hyeon Seo, Kwang-Hyun Baek, and Yong Shim *Chung-Ang University*
TP1-161	**Design of a High Efficiency Buck Converter with Type-Ⅲ Compensation** Yuna Ju and Byong-Deok Choi *Department of Electronic Engineering, Hanyang University*
TP1-162	**16Gbps Half–rate Reference–less CDR with Sub-sampling Phase Detection** Gwangmyeong An, Jongchan An, and Junyoung Song *Department of Electronics Engineering, Incheon National University*
TP1-163	**A High-Efficiency Dual Path Buck-Boost Converter with Wide Input Range** Mun-Jung Cho, Seung-Ju Lee, Jong-Hun Kim, and Se-Un Shin *UNIST*
TP1-164	**Design of Precision-Scalable DNN Training Accelerator** Seock-Hwan Noh, Jahyun Koo, and Jaeha Kung *DGIST*
TP1-165	**Integrated Circuit of Digital Active EMI Filter with Function of AC Power-line Noise Detection** Sangyeong Jeong[1,2], Junghoon Cho[2], and Jingook Kim[1,2] *[1]UNIST, [2]EMcoretech Co., Ltd.*
TP1-166	**A Local Interconnect Network Communication Processor based on Cortex-M0 for Automotive Devices** Kwonneung Cho, Jeong Eun Kim, Hyun Woo Oh, Seong Mo Ahn, and Seung Eun Lee *Department of Electronic Engineering, Seoul National University of Science and Technology*
TP1-167	**Ultra-Low Power Analog CNN Accelerator SoC based on Nano-amp Current Multiplier and Max Pooling Circuit** Malik Summair Asghar, Syed Asmat Ali, Saad Arslan, M. Junaid, T. Thaising, and HyungWon Kim *Department of Electronic Engineering, Chungbuk National University*

TP1-168	**명령어 수준 메모리 격리 및 RoT 지원 보안 칩** Jong Uk Park, Jun Ho Lee, and Ho Won Kim *Department of Electronic Computer Engineering, Pusan National University*
TP1-169	**Neural ADC with Communication for Long-term Monitoring System** Jaeouk Cho and Chul Kim *KAIST*
TP1-170	**A Design of 45V – 20mA Implantable Electrical Vagus Nerve Stimulation** Kim-Hoang Nguyen, Woojin Ahn, and Minkyu Je *School of Electrical Engineering, KAIST*
TP1-171	**Ka-Band CMOS LNA with ESD Protection for 5G Communication** Jaehyun Kwon and Changkun Park *Department of Electronic Engineering, Soongsil University*
TP1-172	**Ka-Band CMOS Variable Gain Amplifier with Wide Gain Control Range** Dongin Min and Changkun Park *Department of Electronic Engineering, Soongsil University*
TP1-173	**A Wide Power Dynamic Range CMOS RF-DC Converter for RF Energy Harvesting** Jung-Yeon Oh and Ickjin Kwon *Department of Electrical and Computer Engineering, College of Information Technology, Ajou University*
TP1-174	**SAR-Based Temperature Sensor Using Direct Temperature-Voltage Comparison** Jooeun Kim, Jeongmyeong Kim, Changjoo Park, Minkyu Yang, and Wanyeong Jung *KAIST*
TP1-175	**A 60GHz 2-stage Power Amplifier in 65nm CMOS Technology** In Cheol Yoo, Dong Ouk Cho, and Chul Woo Byeon *Department of Electronic Engineering, Wonkwang University*
TP1-176	**A Fully Integrated Wireless Stimulator SoC for Addressable Cortical Microimplant** Chae-Eun Lee[1], Joonyoung Lim[2], and Yoon-kyu Song[2] *[1]Department of Transdisciplinary Studies, Seoul National University, [2]Department of Applied Bioengineering, Seoul National University*

TP1-177	**CMOS Low Noise Amplifier With Variable Gain for Narrow Band - Internet of Things** Wang Qi and Yongchae Jeong *Division of Electronic and Information Engineering, Jeonbuk National University*
TP1-178	**A 4-GS/s 6b Time-Interleaved SAR ADC with Triming Skew Calibration** In-Kwon Pack, Jin-Yeop Jang, Sung-Hyun Park, Jae-Hyeon Nam, and Sang-Gyu Park *Department of Electronic Engineering, Hanyang University*
TP1-179	**지능형 디지털 컨트롤러가 장착된 5.8GHz 전용 단거리 통신 웨이크업 수신기** Ju Hyoung Kim and Kang-Yoon Lee *Department of Electrical and Computer Engineering, Sungkyunkwan University*
TP1-180	**Analogue Implementation of Spike Neural Networks and Unsupervised Learning Based Spike-timing-dependent Plasticity** Ju-Won Oh and Kang-Yoon Lee *Department of Electrical and Computer Engineering, Sungkyunkwan University*
TP1-181	**RISC-V를 이용한 Triple Core Lock Step 기능이 탑재된 안전에 신뢰할 수 있는 프로세서** Ji-Woong Choi, Seong-Hyeun Yang, and Seong-Soo Lee *School of Electronic Engineering, Soongsil University*
TP1-182	**Automatic Duty Cycle Corrector for Frequency Synthesizer** Jeong-su Mok[1] and In-Chul Hwang[2] *Kangwon National University*
TP1-183	**노이즈와 PVT 변화에 내성을 가진 빛 오류 주입 공격 감지기법** Dong Won Lee, Jong Tack Kim, and Byung Do Yang *Department of Electronics Engineering, Chungbuk National University*
TP1-185	**A Non-Linear Logarithmic Amplifier Design for Neural Signal Recording** Joonyoung Lim, Chieun Choi, Tae-Hwan Park, and Yoon-Kyu Song *Graduate School of Convergence Science and Technology, Seoul National University*
TP1-186	**High-Efficiency DC-DC Buck Converter Using NMOS-NMOS Power Switch** Heesoo Na, Dongju Kim, Iljun Kim, and Heesauk Jhon *Mokpo National University*

TP1-187	**PVT 자가보정회로를 사용한 고정밀 아날로그 Spiking Neural Network 회로** Jong-Tack Kim, Dong-Won Lee, and Byung-Do Yang *Department of Electronics Engineering, Chungbuk National University*
TP1-188	**저전압 에너지 하베스팅을 위한 Charge Pump 기반 DC-DC 부스트 컨버터** Sungha Jeong and Ickjin Kwon *Department of Electrical and Computer Engineering, College of Information Technology, Ajou University*
TP1-189	**A Bias Voltage Control of CMOS Pseudo-resistors to Reduce Saturation Recovery Time in Bio-amplifiers** Joonyoung Lim, Chieun Choi, Tae-Hwan Park, and Yoon-Kyu Song *Graduate School of Convergence Science and Technology, Seoul National University*
TP1-190	**New Precharge-free Matchline Structure with Continuous Search for Low-power Content-Addressable Memory System** 이상현, 김영민 *홍익대학교 전자전기공학부*

2023년 2월 15일(수), 14:00-15:45
하이원 그랜드호텔(컨벤션타워), 컨벤션홀 및 메인로비 (5층)

[WP1] 포스터 세션 2

C. Material Growth & Characterization

심사위원: 백승협 책임연구원(KIST), 최우석 교수 (성균관대학교)

WP1-001	**Ex-situ Strain Profiling of AlGaN/GaN HEMTs Using Surface-plasmon Enhanced Raman Spectroscopy** Jae Sang Kang[1], Jae Sun Kim[1], Jung Ki Park[1], Gyeong Eun Choi[1], Gyu Hwi Jeong[1], Young Boo Moon[2], Deok Gyu Bae[3], and Jung Hoon Song[1] *[1]Department of Physics, Kongju National University, [2]UJL Inc., [3]Hexasolution Co., Ltd.*
WP1-002	**Improved Performance of 620nm-Light Emitting Diodes based on InGaN MQWs for Micro-LED Display** Jae Sun Kim[1], Jae Sang Kang[1], Gyeong Eun Choi[1], Jung Ki Park[1], Gyu Hwi Jeong[1], Sung Min Hwang[2], In Sung Jo[2], Won Taek Lim[2], and Jung Hoon Song[1] *[1]Department of Physics, Kongju National University, [2]Soft-EPi Inc.*
WP1-003	**Low-temperature MOCVD-grown Wafer-scale $SnSe_2$ Thin Films and $SnSe_2$-to-SnSe Phase Transition** Sungyeon Kim[1], Hoyeon Cho[1], Wookhee Lee[1], Seonhwa Jeon[1], Kyungmin Ko[1], Jaewon Kim[1], Sungkyu Kim[2], Feng Ding[1], and Joonki Suh[1,3] *[1]Department of Materials Science and Engineering, UNIST, [2]Department of Nanotechnology and Advanced Materials Engineering, Sejong University, [3]Graduate School of Semiconductor Materials and Devices Engineering, UNIST*
WP1-004	**Chemisorption Inhibition Control for Molybdenum Disulfide Thin Film by Atomic Layer Deposition** Soo Min Yoo[1,2], Dong Hee Han[1,2], Min Kyeong Nam[1,2], Seungwoo Lee[1,2], Yewon Kim[1,2], and Woojin Jeon[1,2] *[1]Department of Advanced Materials Engineering for Information and Electronics, Kyung Hee University, [2]Integrated Education Program for Frontier Science and Technology (BK21 Four), Kyung Hee University*
WP1-005	**Characterization and Control of Thru-Holes in Reduced Graphene Oxide and Directly Grown Graphene as a Mask for Thru-Hole Epitaxy** Hyunkyu Lee[1], Gyuseock Ko[2], Jae Hun Kim[2], Jong Woo Ha[2], Hyung Beom Kim[2], Hyeonoh Jo[2], Hansol Kim[3], Jieun Yang[3], and Chinkyo Kim[1,2] *[1]Department of Information Display, Kyung Hee University, [2]Department of Physics, Kyung Hee University, [3]Department of Chemistry, Kyung Hee University*
WP1-006	**Study on Diode Characteristics and Solar Cell Application of N-$Nb_xTi_{1-x}O_2$ on P-Si** Woo Il Jeong and Jong Hyun Song *Department of Physics, Chungnam National University*

WP1-007	**EUV 리소그래피 응용을 위한 VAD 공법 활용 Ti-doped 석영 잉곳 제조** U Sik Kim, Sang Yeol Shin, Seung Ho Lee, Jaesun Kim, and Sung Koog Oh *Taihan Fiberoptics Co., Ltd.*
WP1-008	**Self-poled Flexible Piezoelectric Thin Film for Energy Harvesting** Hwan Min Kim[1,2], Do Hyeon Woo[1,2,3], Hyoung-Su Han[4], Chang Won Ahn[1,2], Jong Hoon Jung[5], Tae Heon Kim[1,2], and Ill Won Kim[1,2] *[1]Department of Physics, University of Ulsan, [2]Energy Harvest-Storage Research Center, University of Ulsan, [3]Quintess Co., Ltd., [4]School of Materials Science and Engineering, University of Ulsan, [5]Department of Physics, Inha University*
WP1-009	**Dislocation-driven Pinching of Hysteretic Characteristics in $Bi_{1/2}Na_{1/2}TiO_3$-Based Ferroelectric Thin Films** Yong Jin Jo[1,2], Muhammad Sheeraz[1,2], Viet-Dung Tran[2], Gyehyeon Kim[3], Changhee Sohn[3], Ill Won Kim[1,2], Chang Won Ahn[1,2], Young-Han Shin[2], and Tae Heon Kim[1,2] *[1]Energy Harvest-Storage Research Center, University of Ulsan, [2]Department of Physics, University of Ulsan, [3]Department of Physics, UNIST*
WP1-010	**Highly Conformal Ultrathin Sb_2Te_3 Films by Suppressed Growth in Atomic Layer Deposition** Wonho Choi[1,2], Chanyoung Yoo[1,2], Jeong Woo Jeon[1,2], Byongwoo Park[1,2], Gwangsik Jeon[1,2], Sangmin Jeon[1,2], and Cheol Seong Hwang[1,2] *[1]Department of Materials Science and Engineering, Seoul National University, [2]Inter-university Semiconductor Research Center, Seoul National University*
WP1-011	**Morphological Properties of HfS_2 Affected by Ar Flow Rate during Synthesis in Chemical Vapor Deposition** Juchan Hwang and Kwangwook Park *Jeonbuk National University*
WP1-012	**Formation of Ferroelectric Phase in HZO by the 2-Step Process of PLD and RTA for Negative Capacitance FET** Hyun Yeol Rho, Hae Won Cho, Yongin Cho, and Sunkook Kim *Multifunctional Nano Bio Electronics Lab, School of Advanced Materials Science and Engineering, Sungkyunkwan University*
WP1-013	**Reduction of Threshold Voltage of MoS_2-Based FET via Interface Hydroxylation during CVD** Hwi Yoon[1], Jisang Yoo[1], Jaehyeok Kim[1], Yunyong Nam[2], Jun Hyung Lim[2], Seung-min Chung[1], and Hyunjun Kim[1] *[1]School of Electrical and Electronic Engineering, Yonsei University, [2]Samsung Display Co., Ltd.*
WP1-014	**Spectroscopic Ellipsometry Analysis of the Optical Bandgap and Defect State in Amorphous Silicon Nitride Film** Hyun Don Kim[1,2], Minseon Gu[1,2], Xuan Au Nguyen[3], Tae Jung Kim[3], Young Dong Kim[3], Moonsup Han[1,2], E.J. Choi[1,2], and Young Jun Chang[1,2] *[1]Department of Physics, University of Seoul, [2]Department of Smart City, University of Seoul, [3]Kyung Hee University*
WP1-015	**Investigation of Defect States in Silicon Nitrides Using Electron and Optical Spectroscopy** Minseon Gu[1], Hyun Don Kim[1,2], Kyu-Myung Lee[3], Yongsup Park[3], Moonsup Han[1], E.J. Choi[1], and Young Jun Chang[1,2] *[1]Department of Physics, University of Seoul, [2]Department of Smart Cities, University of Seoul, [3]Department of Physics, Kyung Hee University*

WP1-016	**Rotating of Whole Crystals and Structural Characterization of Homoepitaxial β-Ga_2O_3 Epilayers Grown by MOCVD** Raouf Hayyak[1], Taswar Iqbal[1], Trong Si Ngo[1], Nguyen Quoc Vuong[1], Byung Ju Lee[1], Soon-Ku Hong[1], Dae-Woo Jeon[2], and Ji-Hyeon Park[2] *[1]Department of Materials Science and Engineering, Chungnam National University, [2]KICET*
WP1-017	**Homoepitaxial MBE Growth and Characterization of Si doped Ga_2O_3 Epilayers on (001) and (010) β-Ga_2O_3 Substrates** Nguyen Quoc Vuong, Trong Si Ngo, Taswar Iqbal, Raouf Hayyak, Byung Ju Lee, and Soon-Ku Hong *Department of Materials Science and Engineering, Chungnam National University*
WP1-018	**HfO_2 Epitaxy on Si-wafer for Ferroelectric Gate Oxide by Combining Sputtering and Annealing Process** Sung-Jin Jung[1], Hyung-Jin Choi[1], Jun Young Lee[1], Soo Young Jung[1], Min seok Kim[1], Seong Keun Kim[1], and Seung Hyub Baek[1,2,3] *[1]KIST, [2]Yonsei University, [3]Korea University of Science and Technology*
WP1-019	**Defects in PAMBE Grown Homoepitaxial (001) β-Ga_2O_3 Films and Effects of Ga Pre-exposure Prior to Growth** Trong Si Ngo, Taswar Iqbal, Raouf Hayyak, Nguyen Quoc Vuong, Byung Ju Lee, and Soon-Ku Hong *Department of Materials Science and Engineering, Chungnam National University*
WP1-020	**The Study of Intrinsic Piezoelectricity in Sm Doped PMN-PZT Thin Films with Morphotropic Phase Boundary Using In-situ XRD Diffraction Using Synchrotron** Jun Young Lee[1], Min-Seok Kim[1], Ruiguang Ning[1], Soo Young Jung[1], Hyung-Jin Choi[1], Sung-Jin Jung[1], Su Yong Lee[2], and Seung-Hyub Baek[1] *[1]Electronic Materials Research Center, KIST, [2]Pohang Accelerator Laboratory*
WP1-021	**Reduction of Threading Dislocation Density on the Ultra-thin GaAs Buffer on GaP/Si Substrate by Molecular Beam Epitaxy** Tsimafei Laryn[1,2], Rafael Jumar Chu[1,2], and Daehwan Jung[1,2] *[1]Center for Opto-Electronic Materials and Devices, KIST, [2]Division of Nanoscience and Technology, KIST School, University of Science and Technology (UST)*
WP1-022	**Hetero-epitaxial Piezoelectric Film for Fingerprint and Vein Recognition System** Soo Young Jung[1,2], Jin Soo Park[3,4], Byeong-hyeon Lee[5], Sung-Ok Won[5], Byung Chul Lee[3], Ho Won Jang[2], and Seung-Hyub Baek[1,6] *[1]Electronic Materials Research Center, KIST, [2]Department of Materials Science and Engineering, Research Institute of Advanced Materials, Seoul National University, [3]Bionics Research Center, KIST, [4]Department of Electrical Engineering, Korea University, [5]Advanced Analysis Center, KIST, [6]Nanomaterials Science and Engineering, KIST School, University of Science and Technology (UST)*
WP1-023	**Multiphysics Simulation of Growing Processes for CaF_2 Single Crystals Using Double-crucible Czochralski Method** Hae-Jin Jeon[1,2], Yun-Ji Shin[1], Si-Young Bae[1], Won-Jae Lee[2], and Seong-Min Jeong[1] *[1]KICET, [2]Dong-Eui University*
WP1-024	**Anomalous Domain Switching in Ferroelectric Si-doped HfO_2 Thin Film Capacitors** Yoon Ki Kim, Hyo Bin Yoo, and Sang Mo Yang *Sogang University*

WP1-025	**Graphene Capping Effect on InAs/GaAs Quantum Dot Photoluminescence and Its Carrier Transfer Mechanism** Quang Nhat Dang Lung[1,2], Rafael Jumar Chu[1,2], Tsimafei Laryn[1,2], Yeonhwa Kim[1,3], May Angelu Madarang[1,2], and Daehwan Jung[1,2] *[1]Center for Opto-Electronic Materials and Devices, KIST, [2]Division of Nano and Information Technology, KIST School, University of Science and Technology (UST), [3]Department of Materials Science and Engineering, Korea University*
WP1-026	**The Growth Behaviors and Electrical Properties of TiO_2 Thin Films Using Discrete Feeding Method Atomic Layer Deposition** Jonghyun Kim[1], Daeun Lim[2], Yeji Lee[1], Hyeong Jun Kim[1], Yumi Wang[3], Hongseok Jang[3], Suhyong Yun[3], Eun A Kim[1], Seong-Yong Cho[1], and Woongkyu Lee[2] *[1]Myongji University, [2]Soongsil University, [3]Oceanbridge Co., Ltd.*
WP1-027	**Physical Surface Reaction Modeling Using Monte-Carlo Simulation in Atomic Layer Deposition** 구본욱, Chi Thang Nguyen, Trinh Ngoc Le, 이한보람 *인천대학교 신소재공학과*
WP1-028	**Growth of Gallium Oxide Thin Films on c-, a-, m-, r-Plane Sapphire Substrates Using Mist Chemical Vapor Deposition** Gi-Ryeo Seong[1,2], Seong-Ho Cho[1,2], Kyoung-Ho Kim[1,2], Yun-Ji Shin[1], Seong-Min Jeong[1], Tae-Gyu Kim[2], and Si-Young Bae[1] *[1]KICET, [2]Pusan National University*
WP1-029	**Investigation of Dislocation in (100) β-Ga_2O_3 Single Crystal Grown by EFG Method** Mee-Hi Choi[1], Woon-Hyeon Jeong[1,2], Seong-Ho Cho[1,2], Seong-Min Jeong[1], Yun-Ji Shin[1], and Si-Young Bae[1] *[1]KICET, [2]Pusan National University*
WP1-030	**Heteroepitaxial Growth of κ-$(Al_xGa_{1-x})_2O_3$ Alloy Films on 4H-SiC Substrates Using Mist Chemical Vapor Deposition** Seong-Ho Cho[1,2], Yun-Ji Shin[1], Seong-Min Jeong[1], Se-Hun Kwon[2], and Si-Young Bae[1] *[1]KICET, [2]Pusan National University*
WP1-031	**Non-Solution Predeposition Process for Enhancing Two-dimensional Growth of Transition Metal Dichalcogenides** Minkyun Son[1,2], Minsu Kim[1], Dong-Bum Seo[1], Jin Kim[1], Moonjeong Jang[1], Dong In Kim[1], Seunghun Lee[1], Soonmin Yim[1], Wooseok Song[1], Sung Myung[1], Jung-Woo Yoo[2], Sun Sook Lee[1], and Ki-Seok An[1] *[1]KRICT, [2]UNIST*
WP1-032	**Laser Crystallization of Ge Layers Grown on MgO Substrates** Jonghwa Baek, Jongyeon Baek, Manh-Cuong Nguyen, An Hoang-Thuy Nguyen, Anh-Duy Nguyen, and Rino Choi *3D Convergence Center and Department of Materials Science and Engineering, Inha University*
WP1-033	**Epitaxial Growth of Ga_2O_3 Films with Different Ligand Structures by Mist Chemical Vapor Deposition** Jang Hyeok Park and You Seung Rim *Department of Intelligent Mechatronics Engineering and Convergence Engineering for Intelligent Drone, Sejong University*

WP1-034	**Meniscus Control of Ga_2O_3 Single Crystal Growth in EFG Method** Woon-Hyeon Jeong[1,2], A-Ran Shin[1,2], Tae-Hun Gu[1,2], Se-Hun Kwon[2], Yun-Ji Shin[1], Seong-Min Jeong[1], and Si-Young Bae[1] *[1]KICET, [2]Pusan National University*
WP1-035	**Characteristics of p-NiO/n-Ga_2O_3 Heterojunction Thin Film Grown by Mist Chemical Vapor Deposition** Min-Seong Kong[1,2], Seong-Ho Cho[1], Kyoung-Ho Kim[1], Min-Su Park[2], and Si-Young Bae[1] *[1]KICET, [2]Department of Electronics Engineering, Dong-A University*
WP1-036	**Improvement of Electrical Properties of Sn-doped α-Ga_2O_3 Thin Film Using Heat-Treated Buffer Layers** Kyoung-Ho Kim[1,2], Heesoo Lee[2], Yun-Ji Shin[1], Seong-Min Jeong[1], and Si-Young Bae[1] *[1]KICET, [2]Pusan National University*
WP1-037	**Stabilization of Memristive Switching based on Highly Polycrystalline Two-dimensional Molybdenum Ditelluride** Jihoon Yang[1,2], Aram Yoon[1,2,3], Donghyun Lee[1,2], Il-John Jung[1,2], Dong-Hyeok Lim[1,2], Hongsik Jeong[1,2], Zonghoon Lee[1,2,3], and Soon-Yong Kwon[1,2] *[1]Department of Materials Science and Engineering, UNIST, [2]Graduate School of Semiconductor Materials and Devices Engineering, UNIST, [3]Center for Multidimensional Carbon Materials, IBS*
WP1-038	**Defect Characterizations of β-Ga_2O_3 Single Crystals Using X-ray Topography** Tae-Hun Gu[1,2], Woon-Hyeon Jeong[1,2], A-Ran Shin[1,2], Sung Sik Lee[2], Yun-Ji Shin[1], Seong-Min Jeong[1], and Si-Young Bae[1] *[1]KICET, [2]Pusan National University*
WP1-039	**High Rate and Large Capacity Supercapacitors by Three-dimensional Shape Engineering, Interfacial Gelation of Reduced Graphene Oxide** S. J. Cha, U. N. Maiti, and S. O. Kim *KAIST*
WP1-040	**Material Properties of Ga_2O_3 Single Crystal Properties depending on Powder Purity** A-Ran Shin[1,2], Tae-Hun Gu[1,2], Woon-Hyeon Jeong[1,2], Heesoo Lee[2], Yun-Ji Shin[1], Seong-Min Jeong[1], and Si-Young Bae[1] *[1]KICET, [2]Pusan National University*
WP1-041	**Pre-Treatment Effect on the InAs Nanowire Growth on Si(111) and Ge(111) Substrates** Chang-Hun Song[1,2], Hyunchul Jang[1], Keun Man Song[1], Yongsu Choi[1], Donghyun Kim[1], Dae-Hong Ko[2], and Chan-Soo Shin[1] *[1]KANC, [2]Yonsei University*
WP1-042	**Ultra-thin Ge Single-junction Solar Cells Transferred onto a Flexible Substrate for Thin-film InGaP/(In)GaAs/Ge Tandem Solar Cells** Sunghyun Moon[1], Yeojun Yun[1], Sujong Kim[1], Doyoung Yuk[1], Younghan Yook[1], Sangwon Yoon[1], Haoyan Rong[1], Ho Kwan Kang[2], Kyung-Ho Park[2], and Jaejin Lee[1] *[1]Department of Electrical and Computer Engineering, Ajou University, [2]KANC*

WP1-043	**Optimization of MOCVD Epitaxy Process for the High Quality InP HEMT Devices** Hyunchul Jang[1], Jaephil Shim[1], Chang-Hun Song[1,2], Keun Man Song[1], Yongsu Choi[1], Donghyun Kim[1], and Chan-Soo Shin[1] *[1]KANC, [2]Yonsei University*
WP1-044	**Epitaxial Growth of HfO_2-Based Thin Films by Sputtering for Ferroelectric Devices** Hyung-Jin Choi[1], Sung-Jin Jung[1], Jun Young Lee[1], Haneul Choi[2], Byeong-hyeon Lee[2], Sung Ok Won[2], Hye Jung Chang[2], and Seung-Hyub Baek[1,3,4,5] *[1]Electronic Materials Research Center, KIST, [2]Advanced Analysis Center, KIST, [3]Division of Nano and Information Technology, KIST School, University of Science and Technology (UST), [4]Department of Materials Science and Engineering, Yonsei University, [5]Yonsei-KIST Convergence Research Institute, KIST*
WP1-045	**Large-sized Diamond with Ensemble NV Center Using Nitrogen In-situ Doping for Wide-field Quantum Sensor** Seongmin Kang[1], Taemyong Kwak[1], Seolyoung Oh[1], Sanghun Han[1], Seongwoo Kim[2], and Okhyun Nam[1] *[1]Department of Nano-Semiconductor Engineering, Tech University of Korea, [2]Orbray Co., Ltd.*
WP1-046	**양방향 사전 인장 기술을 적용한 신축성 구리 전극의 제작 및 인장 특성 분석** Jonghyun Jeong, Jinyeong Lee, and Jaewook Jeong *School of Information and Communication Engineering, Chungbuk National University*
WP1-047	**Ferroelectricity in Epitaxial $Zn_{1-x}Mg_xO$ Thin Films** Dong Hun Han[1,2], Hyung Jin Choi[1], Jun Young Lee[1], Soo Young Jung[1,2], Min Seok Kim[1,2], Ho Won Jang[2], and Seung Hyub Baek[1,3,4,5] *[1]Electronic Materials Research Center, KIST, [2]Department of Materials Science and Engineering, Research Institute of Advanced Materials, Seoul National University, [3]Division of Nano and Information Technology, KIST School, University of Science and Technology (UST), [4]Department of Materials Science and Engineering, Yonsei University, [5]Yonsei-KIST Convergence Research Institute, KIST*
WP1-048	**Heteroepitaxy of Twin-free Single Crystal (111) Diamond on a Sapphire Substrate** Hyeonu Kang[1], Uiho Choi[1], Jongbeom Lee[1], Yeonghwa Kwon[1], Taemyung Kwak[1], Joocheol Jeong[1], Geunho Yoo[1], Seong-Woo Kim[2], and Okhyun Nam[1] *[1]Department of Nano and Semiconductor, Tech University of Korea, [2]Orbray Co., Ltd.*
WP1-049	**Studies of Nitrogen Delta-doped CVD Diamond Using UVH-MPCVD for Quantum Sensor** Seolyoung Oh, Taemyong Kwak, Seongmin Kang, Sanghun Han, and Okhyun Nam *Convergence Center for Advanced Nano Semiconductor, Department of Nano-Semiconductor, Tech University of Korea*
WP1-050	**Kinetic Modeling of Atomic Layer Deposition of HfO_2 Using Tris(Dimethylamino) Cyclopentadienyl Hafnium as the Hf Source** Nhat-Minh Phung[1,2], Min-Seong Kong[1,3], Si-Young Bae[1], Soonil Lee[2], and Seong-Min Jeong[1] *[1]KICET, [2]Changwon National University, [3]Dong-A University*

WP1-051	**Quality Improvement of Heteroepitaxial Diamond Using Silicon-on-Insulator Substrate** Jongbeom Lee[1], Uiho Choi[1], Hyeonu Kang[1], Yeonghwa Kwon[1], Taemyung Kwak[1], Joocheol Jeong[1], Geunho Yoo[1], Seong-Woo Kim[2], and Okhyun Nam[1] *[1]Department of Nano and Semiconductor Engineering, Tech University of Korea, [2]Orbray Co., Ltd.*
WP1-052	**Evolution of Temperature Distribution at the Growth Front of Ga_2O_3 Single Crystal via Edge-defined Film-fed Growth** Su-Min Lim[1], Nhat-Minh Phung[1,2], Yu-Ji Shin[1], Si-Young Bae[1], and Seong-Min Jeong[1] *[1]KICET, [2]Changwon National University*
WP1-053	**Evaluation of SiC Residual Sources after Growing SiC Single Crystals via Physical Vapor Transport Method** Seong-Min Jeong[1], Jae-Hyeon Park[1,2], Ju-Hyeong Sun[1], Si-Young Bae[1], Yun-Ji Shin[1], Chang-Min Kim[3], and Won-Jae Lee[4] *[1]KICET, [2]Pusan National Univeristy, [3]Hana Materials Inc., [4]Dong-Eui University*
WP1-054	**Rapid Physical Vapor Transport Growth of SiC Single Crystal from CVD-SiC Blocks as the Source** Seong-Min Jeong[1], Ju-Hyeong Sun[1], Jae-Hyeon Park[1,2], Yong-Hyeon Kim[1], Si-Young Bae[1], Yun-Ji Shin[1], Chang-Min Kim[3], and Won-Jae Lee[4] *[1]KICET, [2]Pusan National University, [3]Hana Materials Inc., [4]Dong-Eui University*
WP1-055	**P-type Diamond Metal Semiconductor Field Effect Transistor with Highly Boron-doped Contact Layer on Heteroepitaxial Diamond Substrate** Uiho Choi[1], Hyeonu Kang[1], Jongbeom Lee[1], Yeonghwa Kwon[1], Taemyung Kwak[1], Geunho Yoo[1], Seong-Woo Kim[2], and Okhyun Nam[1] *[1]Department of Nano and Semiconductor Engineering, Tech University of Korea, [2]Orbray Co., Ltd.*
WP1-056	**Growth of Quantum Dots with C-Band(1550nm) Emission on GaAs Substrates** Suk In Park and Jin Dong Song *KIST*
WP1-057	**Heteroepitaxial Diamond Grown on Compliant Substrate Using Silicon or Sapphire-Based Air-Void Structure** Yeonghwa Kwon[1], Uiho Choi[1], Hyeonu Kang[1], Jongbeom Lee[1], Taemyung Kwak[1], Joocheol Jeong[1], Geunho Yoo[1], Seong-Woo Kim[2], and Okhyun Nam[1] *[1]Department of Nano and Semiconductor Engineering, Tech University of Korea, [2]Orbray Co., Ltd.*
WP1-058	**Growth of InAs/GaAsSb Type II Super-Lattice on InAs Substrate by Molecular Beam Epitaxy** Sung-Yul L. Park[1,2] and Jin Dong Song[1] *[1]Center for Opto-Electronics Materials and Devices, KIST, [2]Division of Nano and Information Technology, KIST School, University of Science and Technology (UST)*
WP1-059	**Characteristics of Layered Perovskite Structure Nanosheets Film through Layer Control** So-Yeon Yoo[1,2], Haena Yim[1], Sahn Nahm[2], and Ji-Won Choi[1,3] *[1]Electronic Materials Research Center, KIST, [2]Department of Materials Science and Engineering, Korea University, [3]Division of Nano and Information Technology, KIST School, University of Science and Technology (UST)*

D. Thin Film Process Technology

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WP1-060	**Phase-Shift Controller for Analog Circuit Application Using 2-D Material** Seokheon Kong, June Hyeong Kim, Huiwon Kim, and Seul Ki Hong *Seoul National University of Science and Technology*
WP1-061	**Engineering the Linear Conductance Characteristics in PVP Polymer Based Neuromorphic Device for Physical Transient Healthcare Application** Shaikh Mohammad Tauquir A.S. and You Seung Rim *Department of Intelligent Mechatronics Engineering and Convergence Engineering for Intelligent Drone, Sejong University*
WP1-062	**Biocompatible Agarose-Based Resistive Random Access Memory for Transient Electronics** Tan Hoang Vu Nguyen and You Seung Rim *Department of Intelligent Mechatronics Engineering and Convergence Engineering for Intelligent Drone, Sejong University*
WP1-063	**Characteristics of Amorphous Ga_2O_3 Thin Film Growth on Ti Substrates at Low Temperatures Using MOCVD** Nam Jun Ahn, Jang Beom An, Kyoung Hwa Kim, Hyung Soo Ahn, and Min Yang *Nano Semiconductor Engineering, Korea Maritime and Ocean University*
WP1-064	**Forming Gas Annealing에 의한 Ru/W Interface에서의 산소 거동 연구** 김성준[1], 김선용[2], 박인성[3], 박영욱[2], 안진호[1,2] *[1]한양대학교 나노반도체공학과, [2]한양대학교 신소재공학과, [3]한양대학교 나노과학기술연구소*
WP1-065	**Ultralow-Power Transistor with Super-Steep Slope Switching via Graphene-Based Contact Engineering** Seyoung Oh[1,2] and Byungjin Cho[1,2] *[1]Department of Urban, Energy, and Environmental Engineering, Chungbuk National University,* *[2]Department of Advanced Materials Engineering, Chungbuk National University*
WP1-066	**2D NbS_2/MoS_2/p-Si Heterostructured Photodetector Enabling High Photoresponsivity in Visible Wavelength** Hyun Young Seo[1] and Byungjin Cho[1,2] *[1]Department of Urban, Energy, and Environmental Engineering, Chungbuk National University,* *[2]Department of Advanced Materials Engineering, Chungbuk National University*
WP1-068	**A New Synthetic Method of Organic-Inorganic Hybrid Materials for Electrochemical Energy Storage** Jiwoong Ham and Nari Jeon *Department of Materials Science and Engineering, Chungnam National University*

WP1-069	**Reduction of SiO_x Interface Layer Utilizing the Remote Scavenging Effect of Ti Layer on Ferroelectric (Hf, Zr)O_2 Thin Film** Hyun Woo Jeong[1,2], Se Hyun Kim[1,2], Kun Yang[1,2], Younghwan Lee[1,2], and Min Hyuk Park[1,2] *[1]Department of Materials Science and Engineering, Seoul National University, [2]Inter-university Semiconductor Research Center, Seoul National University*
WP1-070	**Effect of Hydrogen Plasma Treatment on Electrical Synaptic Properties of Oxide Transistors** Min A Park[1] and Jung Wook Lim[1,2] *[1]ETRI, [2]University of Science and Technology (UST)*
WP1-071	**Selective Passivation of 2D TMD Surface Defects by Atomic Layer Deposited Al_2O_3 for Enhancement of Recovery Properties of Gas Sensor** Raeyoung Lee[1], Inkyu Sohn[1], Sungjoo Wi[1], Youngjun Kim[1], Myoungsub Kim[1,2], Hwi Yoon[1], Dain Shin[1], Jaehyeok Kim[1], Jeongwoo Seo[1], Seung-min Jung[1], and Hyungjun Kim[1] *[1]School of Electrical and Electronic Engineering, Yonsei University, [2]SK Hynix*
WP1-072	**Surface-Dominated HfO_2 Nanorod-Based Memristor Exhibiting Highly Linear and Symmetrical Conductance Modulation for High-Precision Neuromorphic Computing** Jae Uk Kwon[1,2], Young Geun Song[1], Ji Eun Kim[1,2], Suk Yeop Chun[1,3], Gu Hyun Kim[4], Gichang Noh[5], Joon Young Kwak[5], Sunghoon Hur[1], Chong-Yun Kang[1,3], Doo Seok Jeong[4], Soong Ju Oh[2], and Jung Ho Yoon[1] *[1]Electronic Materials Research Center, KIST, [2]Department of Materials Science and Engineering, Korea University, [3]KU-KIST Graduate School of Converging Science and Technology, Korea University, [4]Division of Materials Science and Engineering, Hanyang University, [5]Center for Neuromorphic Engineering, KIST*
WP1-073	**Top Gate a-ITGZO 박막트랜지스터에서 Al_2O_3 Buffer Layer의 Channel Passivation 효과 연구** 강민구[1], 조경아[1], 공희성[1], 김재범[2], 임준형[2], 김상식[1] *[1]고려대학교 전기전자공학과, [2]삼성디스플레이*
WP1-074	**Control Se Vacancy of 2D $MoSe_2$ Thin Films Deposited by Plasma Enhanced Atomic Layer Deposition** Ji-Min Lee, Jeong-Hun Choi, Dong Geun Kim, and Ji-Hoon Ahn *Department of Materials Science and Chemical Engineering, Hanyang University*
WP1-075	**Comparative Study of Nitrogen Incorporation and O_3 Treatment of Al_2O_3 Passivation Layer between ZrO_2/Ge** Byoung-Jun Won, Sung-Min Park, Young-Jin Lim, Seoung-Il Kim, and Il-Kwon Oh *Department of Electrical and Computer Engineering, Ajou University*
WP1-076	**SiO_2 Nanorods-Based Threshold Switching Device with High Speed for True Random Number Generator** Keun Ho Soh[1,2], Ji Eun Kim[1,2], Jae Uk Kwon[1,2], Suk Yeop Chun[1,3], Chong-Yun Kang[1,3], Soo Young Kim[2], and Jung Ho Yoon[1] *[1]Electronic Materials Research Center, KIST, [2]Department of Materials Science and Engineering, Korea University, [3]KU-KIST Graduate School of Converging Science and Technology, Korea University*

WP1-077	**Atomic Layer Deposited Mono-Elemental 2D Tellurium** Changhwan Kim[1], Namwook Hur[1], Jiho Yang[3], Saeyoung Oh[2], Hu Young Jeong[2], Bonggeun Shong[3], and Joonki Suh[1,2] *[1]Department of Materials Science and Engineering, UNIST, [2]Graduate School of Semiconductor Materials and Devices Engineering, UNIST, [3]Department of Chemical Engineering, Hongik University*
WP1-078	**Vertical MoS_2 Field-Effect Transistors with Sub-nm Ultimate Body Scaling** Hui Min Lee[1], Jae Won Kim[2], Byungchul Jang[3], and Joonki Suh[1,2] *[1]Graduate School of Semiconductor Materials and Engineering, UNIST, [2]Department of Materials Science and Engineering, UNIST, [3]School of Electronics Engineering, Kyungpook National University*
WP1-079	**Suppression of Interfacial Layer Formation in ZrO_2-Based Capacitors with TiN Electrode by Adopting MgO Thin Films as an Oxygen Diffusion Barrier** Seungwoo Lee[1,2], Dong Hee Han[1,2], Hyeon Ho Seol[1,2], Min Kyeong Nam[1,2], Daeyeong Kim[3], Hansol Oh[3], Hanbyul Kim[3], Yongjoo Park[3], and Woojin Jeon[1,2] *[1]Department of Advanced Materials Engineering for Information and Electronics, Kyung Hee University, [2]Integrated Education Program for Frontier Science and Technology (BK21 Four), Kyung Hee University, [3]Advanced Research Development Team, SK Trichem*
WP1-080	**Volatile Resistance Switching Behavior in Interface Engineered Hafnia Based Ferroelectric Thin Film** Joonbong Lee, Hojin Lee, Hyewon Lee, and Taekjib Choi *Hybrid Materials Research Center and Department of Nanotechnology and Advanced Materials Engineering, Sejong University*
WP1-083	**InGaZnO Field Effect Transistor with Buried-gate Structure Enabling Highly Stable Device** Do Hyeong Kim[1,2] and Byungjin Cho[1,2] *[1]Department of Urban, Energy, and Environmental Engineering, Chungbuk National University, [2]Department of Advanced Materials Engineering, Chungbuk National University*
WP1-084	**Deposition Characteristics of Molybdenum Thin Film Deposited by Thermal ALD** Baek-Ju Lee, Min-Ho Cheon, Kyu-Beom Lee, Hui-Seong Ru, Dong-Won Seo, and Jae-Wook Choi *Hanwha Corporation*
WP1-085	**The Effect of Thermal Conduction in Electrical Properties on InGaZnO Thin Film Transistor** Hyeonmin Bong[1,2], Jinsik Choe[1], Yeong Jae Kim[1], M. –H. Cho[2], and Sungjin Park[1] *[1]Icheon Branch, KICET, [2]Institute of Physics and Applied Physics, Yonsei University*
WP1-086	**Solution-Processed Carbon Nanotube Thin Film Transistor with Self-Aligned Channel Using UV-Curing Resin** Chea-Young Lee[1,2], Jinsu Yoon[1,2], and Yongtaek Hong[1,2] *[1]Department of Electrical and Computer Engineering, Seoul National University, [2]Inter-university Semiconductor Research Center, Seoul National University*
WP1-087	**Design of Thermally Induced Wrinkled Thin-Film Transistor for Stretchable Display** Jeong Eun Oh and Jae Kyeong Jeong *Department of Electronic Engineering, Hanyang University*

WP1-088	**Influence of Post UV-Ozone Treatment on Electrical Characteristics of Solution Processed Copper Oxide Films for Thin Film Transistors** Hyeonju Lee, Bokyung Kim, Dongwook Kim, and Jaehoon Park *Hallym University*
WP1-089	**Heterogeneous-Filament Switching Responsible for Neuromorphic Computing in HfOx-Based Memristors** Min-Gu Jang, Han-Chan Song, and Kyung-Min Kim *KAIST*
WP1-090	**Improving Electrical Properties by Employing the Stacked Structure of Y-doped HfO_2 / ZrO_2 for the Dynamic Random Access Memory Application** YoungUk Ryu[1,2], Hansol Oh[3], Inchun Hwang[3], Yongjoo Park[3], and Woojin Jeon[1,2] *[1]Department of Advanced Materials Engineering for Information and Electronics, Kyung Hee University, [2]Integrated Education Program for Frontier Science and Technology (BK21 Four), Kyung Hee University, [3]Advanced Research Development Team, SK Trichem*
WP1-091	**Development of Hybrid Dual-Channel Flexible Field-Effect Phototransistors Array by TeNWs/Te Film to Achieve High Uniformity and Photoresponsivity** Joo-On Oh, Muhammad Naqi, and Sunkook Kim *School of Advanced Materials Science and Engineering, Sungkyunkwan University*
WP1-092	**Solution $Hf_{0.5}Zr_{0.5}O_2$ Thin Films for MoS_2 Negative Capacitance Field-Effect Transistors** Uisik Jeong, Hawon Cho, Pavan Pujar, and Sun Kook Kim *Sungkyunkwan University*
WP1-093	**Phase Transition of BeO Thin Films by Heavily Doping MgO Layers Grown via Atomic Layer Deposition Dynamic Random-access Memory Devices** Haewon Song, Bowen Wang, Yukyung Park, Daeson Kwon, and Cheol Seong Hwang *Department of Materials Science and Engineering, Seoul National University*
WP1-094	**Atomic Layer Deposition of Ge_xS_{1-x} for High-performance Ovonic Threshold Switch** Byongwoo Park[1,2], Sangmin Jeon[1,2], Chanyoung Yoo[1,2], Jeong Woo Jeon[1,2], Wonho Choi[1,2], Gwang Sik Jeon[1,2], and Cheol Seong Hwang[1,2] *[1]Department of Materials Science and Engineering, Seoul National University, [2]Inter-university Semiconductor Research Center, Seoul National University*
WP1-095	**순차적 침투 합성법을 사용한 유무기 복합 박막 제작 시 유기 공반응물의 영향** 고민경[1], 김형우[2], 전나리[1] *[1]충남대학교, [2]한국기계연구원*
WP1-096	**Improved Properties of the $SrRuO_3$ Electrode by Controlling Annealing Conditions and Adopting Al-doping** Junil Lim[1,2], Dae Seon Kwon[1,2], Haengha Seo[1,2], Tae Kyun Kim[1,2], Heewon Paik[1,2], Haewon Song[1,2], Jong Hoon Shin[1,2], and Cheol Seong Hwang[1,2] *[1]Department of Materials Science and Engineering, Seoul National University, [2]Inter-university Semiconductor Research Center, Seoul National University*

WP1-097	**Dielectric Engineered Synaptic Device based on MoS_2 for Monolithic 3D Integration** Sanggeun Bae, Jungyeop Oh, Mingu Kang, Seohak Park, Wonbae Ahn, Sejin Lee, and Sung-Yool Choi *KAIST*
WP1-099	**Enhanced Crystallization Behavior by GeO_x Layer Insertion in $Ru/SrTiO_3/RuO_2$ Capacitor for DRAM** Heewon Paik, Dae Seon Kwon, Junil Lim, Haengha Seo, Tae Kyun Kim, and Cheol Seong Hwang *Department of Materials Science and Engineering, Seoul National University*
WP1-100	**Effect of Yttrium Feeding Time Change on Electric and Structural Property of Y-doped TiO_2 Films for DRAM Capacitor Applications** Tae Kyun Kim[1,2], Dae Seon Kwon[1,2], Junil Lim[1,2], Haengha Seo[1,2], Heewon Paik[1,2], Jonghun Shin[1,2], and Cheol Seong Hwang[1,2] *[1]Department of Materials Science and Engineering, Seoul National University, [2]Inter-university Semiconductor Research Center, Seoul National University*
WP1-101	**Enhanced Atomic Layer Deposition of Antimony Telluride by Ammonia Co-injection** Sangmin Jeon[1,2], Chanyoung Yoo[1,2], Jeong Woo Jeon[1,2], Wonho Choi[1,2], Byongwoo Park[1,2], Gwangsik Jeon[1,2], and Cheol Seong Hwang[1,2] *[1]Department of Materials Science and Engineering, Seoul National University, [2]Inter-university Semiconductor Research Center, Seoul National University*
WP1-102	**Multi-Stack Ferroelectric Capacitor based on Fluorite Structure Materials for Neuromorphic Computing** Hyo-Bae Kim and Ji-Hoon Ahn *Department of Materials Science and Chemical Engineering, Hanyang University*
WP1-103	**Semiconductor Gas Sensor for Hydrogen Detection Using Change of Work Function between Palladium and Graphene** Ji Hun Sim and Woo Jong Yu *Department of Electrical and Computer Engineering, Sungkyunkwan University*
WP1-104	**IGZO 박막 반도체 소자에 끼치는 RF 스퍼터링 기반 TiO_2 보호층 적용 효과** Sang-Hyung Kim[1,2], Byeong-Kwon Ju[2], and Sung-Hwan Choi[1] *[1]KITECH, [2]School of Electrical and Electronic Engineering, Korea University*
WP1-106	**고도로 정렬된 공액 고분자 나노 와이어 기반 박막 트랜지스터의 전류 제어 연구** Chae Won Kim, Keon Joo Park, Seongbeom Kim, Jinseok Yoon, Nakhee Kang, Kyoung Hwa Kim, Hyung Soo Ahn, Sam Nyung Yi, and Young Tea Chun *[1]Division of Electronics and Electrical Information Engineering, Korea Maritime and Ocean University*
WP1-107	**Phototransistors Using Modern Semiconducting Materials for Next Generation Photodetectors and Photonics Applications** Gergely Tarsoly[1], Jae-Yun Lee[1], Anvar Tukhtaev[1], Zhao Han Lin[1], Berdiev Jonibek Elmurodovich[1], Wang Xiao Lin[1], Seungmoon Pyo[2], and Sung-Jin Kim[1] *[1]College of Electrical and Computer Engineering, Chungbuk National University, [2]Department of Chemistry, Konkuk University*

WP1-108	**Low-Roughness Silver Thin Film for Plasmonic Devices by Pulsed DC Sputtering** Namhoon Kim, Haeri Park, Seunghwi Koo, and Donghee Park *KIST*
WP1-109	**Growth of Rutile TiO_2 with Sn Doping and SnO_2 Seed Layer Using Atomic Layer Deposition** Min Ji Jeong, Seung Won Lee, and Ji-Hoon Ahn *Department of Materials Science and Chemical Engineering, Hanyang University*
WP1-110	**Study of Optical Properties of Vanadium Oxide Thin Films by Reactive Sputtering on Au** Seunghwi Koo, Haeri Park, Namhoon Kim, and Donghee Park *Center for Opto-Electronic Materials and Devices, Post-Silicon Semiconductor Institute, KIST*
WP1-111	**Memristor-type Gas Sensors for Hydrogen Detection Using TiO_2 Nanorods** Suk Yeop Chun[1,2], Young Geun Song[2], Chong-Yun Kang[1,2], and Jung Ho Yoon[2] *[1]KU-KIST Graduate School of Converging Science and Technology, Korea University, [2]Electronic Materials Research Center, KIST*
WP1-112	**Temperature and Time Dependence of Fe-FET Characteristics** Tae Gyu Yang, Seung Hee Cha, Taikyu Kim, Se Eun Kim, and Jae Kyeong Jeong *Department of Electronic Engineering, Hanyang University*
WP1-113	**Effects of Y Doping on Ferroelectric and Electrical Properties of As-deposited $Hf_{1-x}Zr_xO_2$ Thin Films via Atomic Layer Deposition** Youkyoung Oh, Hyo-Bae Kim, and Ji-Hoon Ahn *Department of Materials Science and Chemical Engineering, Hanyang University*
WP1-114	**Multifunctional Organic Neuromorphic Transistors by Controlling the Ferroelectricity of P(VDF-TrFE) via Photocrosslinking** Young-Seok Song[1], Myeongjae Lee[2], Bong Soo Kim[2], and Tae-Wook Kim[1] *[1]Department of Flexible and Printable Electronics, LANL-JBNU Engineering Institute-Korea, Jeonbuk National University, [2]Department of Chemistry, UNIST, [3]Graduated School of Semiconductor Materials and Device Engineering, UNIST*
WP1-115	**Self-gating Diode with Near Unity Ideality Factor Enabled by Drain-Gate Connected Graphene/h-BN/TMD van der Waals Heterostructure** Mihyang Park and Woojong Yu *Department of Electrical and Computer Engineering, Sungkyunkwan University*
WP1-116	**Highly Stable Ambipolar Tungsten Diselenide Field Effect Transistor with Nanoscale Al-supported Al_2O_3 Passivation** Younghyun Ju, Haewon Cho, and Sunkook Kim *Department of Advanced Materials Science and Engineering, Sungkyunkwan University*

WP1-117	**Improvement Contact Resistance of Amorphous IGZO Thin Film Transistor by Inserting Carrier Rich Interlayer** Joo Hee Jeong and Jae Kyeong Jeong *Department of Electronic Engineering, Hanyang University*
WP1-118	**The Effect on Annealing Process of $ZrO_2/Al_2O_3/ZrO_2$ Grown by Atomic Layer Deposition** Jin-Seok Hwang, Min-Jeong Rhee, Shin-So Yeon, and Il-Kwon Oh *Department of Electrical and Computer Engineering, Ajou University*
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WP1-120	**Ni-doped $CuCrO_2$/n-Si Heterojunction-Based Broadband Photodetectors and Their Application to Optoelectrical Logic** Yunchae Jeon[1], Taehyun Park[2], and Hocheon Yoo[1] *[1]Department of Electronic Engineering, Gachon University, [2]Department of Chemical and Biological Engineering, Gachon University*
WP1-121	**Amidoxime-Containing Ti Precursors for Atomic Layer Deposition of TiN Thin Films with Suppressed Columnar Microstructure** Ga Yeon Lee[1], Seungmin Yeo[1], Bo Keun Park[1,2], Taeyong Eom[1], and Taek-Mo Chung[1,2] *[1]Thin Film Materials Research Center, KRICT, [2]Department of Chemical Convergence Materials, University of Science and Technology (UST)*
WP1-122	**Area-Selective Atomic Layer Deposition of High-k Dielectrics by Vapor-Dosed Phosphonic Acid Inhibitors Combined with Selective Lift-Off** Jeong-Min Lee and Woo-Hee Kim *Department of Materials Science and Chemical Engineering, Hanyang University*
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WP1-129	**Effect of UVO Treatment on Threshold Voltage Shift in Sol-Gel IGZO TFTs** Wonsik Kim[1], Won-June Lee[2], Taehyun Kwak[1], Seokhyeon Baek[1], Seung-Hoon Lee[3], and Sungjun Park[1] *[1]Department of Electrical and Computer Engineering, Ajou University, [2]School of Materials Science and Engineering, GIST, [3]Division of Advanced Materials, KRICT*
WP1-131	**Synthesis and Properties of Antimony(Ⅲ) Precursor for Thin Film Transistors** Ji-Seoung Jeong[1,2], Bo Keun Park[1], Seong Uk Son[2], and Ji Yeon Ryu[1] *[1]Thin Film Materials Research Center, KRICT, [2]Department of Chemistry, Sungkyunkwan University*
WP1-132	**Steep Subthreshold Swing of 2D/2D Tunneling Field-effect Transistor Using Ion-Gel Dielectric** Guenhyung Oh[1], Jin Gi Ahn[1], Sang-il Kim[2], Jae Cheol Shin[3], Jonghoo Park[4], and Tae Wan Kim[1] *[1]Jeonbuk National University, [2]University of Seoul, [3]Dongguk University, [4]Kyungpook National University*
WP1-133	**Characterization of ZnO Thin-Film Transistors with Different Active Layer Structures Exposed to Different Energies of Proton Radiation** Yu-Mi Kim[1], Woon-San Ko[2], Ki-Nam Kim[2], and Ga-Won Lee[2] *[1]KAERI, [2]Chungnam National University*
WP1-134	**Enhancement Mode MoS_2 FET Engineering via O_2 Plasma Treatment with Al_2O_3 Barrier Layer** Inseong Lee, Hyeongjin Lim, Kiseong Song, Yunjae Choi, Hyeonji Lee, and Sung-Yool Choi *KAIST*
WP1-135	**Effects of Al Doping on Film Properties of $SrTiO_3$ Dielectrics Grown by Atomic Layer Deposition for DRAM Capacitor** Yeji Lee[1], Jonghyun Kim[1], Daeun Lim[2], Woo Suk Kim[1], Chanwoo Park[3], Bo Keun Park[3], Taek-Mo Chung[3], Eun A Kim[4], Seong-Yong Cho[4], and Woongkyu Lee[2] *[1]Department of Electrical Engineering, Myongji University, [2]Department of Organic Materials and Fiber Engineering, Soongsil University, [3]Thin Film Materials Research Center, KRICT, [4]Department of Materials Science and Engineering, Myongji University*
WP1-136	**Area Selective Deposition of W Using W Precursor Inhibitor** Mingyu Lee, Chi Thang Nguyen, Trinh Ngoc Le, Bonwook Gu, and Han-Bo-Ram Lee *Department of Materials Science and Engineering, Incheon National University*

WP1-137	**Self-Powered Multimodal Sensors based on Two-Dimensional Layered SnSe** Moonjeong Jang, Wooseok Song, Da Som Song, and Ki-Seok An *KRICT*
WP1-139	**Encapsulation을 이용한 P형 Tellurium TFT의 히스테리시스 특성 개선** 김민재[1,2], 이용수[1,2], 권희진[1,2], 김승모[1,2], 이해원[1,2], 전재현[1,2], 황현준[1,2], 백승훈[3], 이병훈[1,2] *[1]Center for Semiconductor Technology Convergence, POSTECH, [2]Department of Electrical Engineering, POSTECH, [3]RIST*
WP1-140	**N형 영미분전도 소자의 노이즈 특성에 관한 연구** 이해원[1,2], 김승모[1,2], 김소영[1,2], 김민재[1,2], 이호인[1,2], 이용수[1,2], 전재현[1,2], 황현준[1,2], 이병훈[1,2] *[1]Center for Semiconductor Technology Convergence, POSTECH, [2]Department of Electrical Engineering, POSTECH*
WP1-141	**고성능 델타전도 스위칭 소자 기반의 재구성 가능한 논리소자** 전재현, 이용수, 김기영, 이호인, 권희진, 김민재, 이해원, 황현준, 이병훈 *Department of Electrical Engineering, POSTECH*
WP1-142	**매우 얇은 두께를 갖는 HZO/Al_2O_3 강유전층 기반 강유전성 전계 효과 반도체소자 (FeFET) 연구** Hye-in Lee[1,2], Byeong-Kwon Ju[2], and Sung-Hwan Choi[1] *[1]KITECH, [2]Department of Micro/Nanosystems Engineering, Korea University*
WP1-143	**Effect of Post Annealing Temperature on Dual Active Layer (DAL) IZO/IGZO TFT by Solution Process** Nur Syifa Salim[1], Jeong Hyun Ahn[2], Tae Eun Ha[2], Eun Kyung Jo[2], HwaRim Im[2], and Yong-Sang Kim[2] *[1]Interdisciplinary Program in Energy Systems Engineering, Sungkyunkwan University, [2]Department of Electrical and Computer Engineering, Sungkyunkwan University*
WP1-144	**ALD of IGZO Thin Films for Next Generation DRAM Devices** Ae Rim Choi, Yi Ji Jeong, and Il-Kwon Oh *Department of Electrical and Computer Engineering, Ajou University*
WP1-145	**Mechanism of Atomic Layer Deposition of Hafnium Oxide Using Ozone** Soo Hyun Lee and Bonggeun Shong *Department of Chemical Engineering, Hongik University*
WP1-146	**Surface Chemical Analysis of Chlorodisilanes as Precursor for Atomic Layer Deposition of Silicon Nitride** Jiwon Kim, Minju Kang, and Bonggeun Shong *Department of Chemical Engineering, Hongik University*

WP1-147	**Performance of ZnO-Based Flexible Memristor with Different Bending Radius** Ye Bin Weon and Byung Joon Choi *Department of Materials Science and Engineering, Seoul National University of Science and Technology*
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WP1-149	**친환경 고성능 유기 박막 트랜지스터를 위한 Water-processed Dielectric Layer 연구** 이미리내, 이용주, Swarup Biswas, 김혁 *서울시립대학교 전자전기컴퓨터공학부*
WP1-150	**Dissociative Adsorption of Trimethylaluminum on Transition Metal Surfaces** Hyobin Eom, Sungmin Lee, Yo Han Choi, and Bonggeun Shong *Department of Chemical Engineering, Hongik University*
WP1-151	**RTA 열처리 공정을 통한 IGZO 기반 NAND Flash Memory 소자 연구** Han-Seul Jung[1,2], Kang-Min Lee[1,2], Byeong-Kwon Ju[2], and Sung-Hwan Choi[1] *[1]KITECH, [2]School of Electrical and Electronic Engineering, Korea University*
WP1-152	**ALD In_2O_3 TFT with HfO_2 for BEOL Transistor** Sum Bum Kim, Jin Ho Park, Se Hyeon Choi, Ji Hyeon Sim, Chan Seul Lee, and Changhwan Choi *Division of Materials Science and Engineering, Hanyang University*
WP1-153	**용액형 N형 반도체 기반 근적외선 양극성 유기 포토트랜지스터** 노화평, 이용주, 이미리내, Swarup Biswas, 김혁 *서울시립대학교 전자전기컴퓨터공학부*
WP1-154	**Lowering Forming Voltages of Pt/$(NiO)_x(La_2O_3)_{1-x}$/TiN RRAM Cell Prepared by Atomic Layer Deposition** Changho Yoon, Jeongwoo Lee, Jaeyeon Kim, Eunsoo Shim, and Hyunchul Sohn *Department of Materials Science and Engineering, Yonsei University*
WP1-155	**Impact of Atomic-Layer-Deposited Mo(C,N) Bottom Electrode on the Ferroelectric Properties of Hf-Zr-O Capacitors** Hyeonhui Jo, Ji Sang Ahn, Jina Kim, Hee Won Jang, and Jeong Hwan Han *Department of Materials Science and Engineering, Seoul National University of Science and Technology*

WP1-156	**Effects of Zr Doping on Threshold Switching Characteristics of Poly-crystalline ZnTe Thin Fims** Wansun Kim, Jaeyeon Kim, Ju-Young Jeong, Yoogeun Han, and Hyunchul Sohn *Department of Materials Science and Engineering, Yonsei University*
WP1-157	**패터닝 방법을 이용한 유·무기 TFT 기반의 논리 응용 회로 시연** 이용수[1,2], 권희진[1,2], 김민재[1,2], 김승모[1,2], 전재현[1,2], 이해원[1,2], 황현준[1,2], 이병훈[1,2] *[1]Center for Semiconductor Technology Convergence, POSTECH, [2]Department of Electrical Engineering, POSTECH*
WP1-158	**Atomic Layer Deposition of Two-Dimensional Bismuth Oxyselenide** Hyeonbin Park[1,2], Kibum Kang[2], Taeyong Eom[1], and Taek-Mo Chung[1] *[1]Division of Advanced Materials, KRICT, [2]Department of Materials Science and Engineering, KAIST*
WP1-159	**Al_2O_3/AlF_3 Multilayer Anti-Reflection Optical Coating Deposited by Atomic Layer Deposition Method** Seunghun Lee[1,2], Dong In Kim[1], Minsu Kim[1], Minkyun Son[1], Soonmin Yim[1], and Ki-seok An[1] *[1]Thin Film Materials Research Center, KRICT, [2]Department of Advanced Materials Science and Engineering, Sungkyunkwan University*
WP1-160	**1S1R Device with MAC Operation for Neuromorphic Computing Application** Su Yeon Lee, Hyun Kyu Seo, and Min Kyu Yang *Sahmyook University*
WP1-161	**Bias Stress Instability of Solution-processed Amorphous InGaZnO Thin-film Transistors by Rapid Thermal Annealing Process** Jaehyun Ahn and Jaewook Jeong *School of Information and Communication Engineering, Chungbuk National University*
WP1-162	**Self-rectifying Resistive Memory with Reliable Multiply-and-Accumulation Operation in Crossbar Array** Hyun Kyu Seo, Su Yeon Lee, and Min Kyu Yang *Sahmyook University*
WP1-163	**Resistive Switching Characteristics of $La_xNi_{1-x}O_y$ Thin Film Deposited by RF Sputtering** Jeongwoo Lee, Jaeyoung Joo, and Hyunchul Sohn *Department of Materials Science and Engineering, Yonsei University*
WP1-164	**Role of a Cyclopentadienyl Ligand in Hf Precursors in Atomic Layer Deposition by Comparing TEMAH and $CpHf(NMe_2)_3$** Seo-Hyeon Jeong[1], Yeon-Je Yu[1], Geun-Ha Oh[1], Ja-Yong Kim[2], Dohee Kim[2], and Il-Kwon Oh[1] *[1]Department of Electrical and Computer Engineering, Ajou University, [2]Revolutionary Technology Center, R&D Division, SK Hynix*

WP1-165	**Optimization of the Offset Ratio in a-IGZO TFTs with Drain Offset Structure for High-Voltage Electronics Applications** Jungha Lee and Hongki Kang *Department of Electrical Engineering and Computer Science, DGIST*
WP1-166	**Metal Interlayer in $Hf_{0.5}Zr_{0.5}O_2$ to Improve Ferroelectricity** Si-un Song, Anh-Duy Nguyen, Ye-eun Hong, and Rino Choi *Department of Material Science and Engineering, Inha University*
WP1-167	**A Comparative Study of Atomic Layer Deposited SnO_2 Using H_2O and O_3 as Oxygen Sources** Yi Ji Jeong[1], Ae Rim Choi[1], Dong Hyun Lim[1], Dohee Kim[2], Seung Wook Ryu[2], Seiyon Kim[2], Youngbae Ahn[2], and Il Kwon Oh[1] *Department of Electrical and Computer Engineering, Ajou University*
WP1-168	**Area-Selective Atomic Layer Deposition of Cobalt Metal Layer Using Self-Assembled Monolayer (SAM)** Chae Won Kim, Moon Suk Choi, Ji Hyeon Sim, Hyeong Jun Kim, and Changhwan Choi *Division of Materials Science and Engineering, Hanyang University*
WP1-169	**Growth Mechanism of Ge-Sb-Te Thin Films by Supercycles of ALD GeTe and Sb_2Te_3** Okhyeon Kim[1], Yewon Kim[1], Hyunmin Han[1], Hye-Lee Kim[2], Chang Yup Park[3], Dong Geon Koo[3], Dong-Ho Ahn[3], Bong Jin Kuh[3], and Won-Jun Lee[1,2] *[1]Department of Nanotechnology and Advanced Materials Engineering, Sejong University, [2]Metal-organic Compounds Materials Research Center, Sejong University, [3]Samsung Electronics Co., Ltd.*
WP1-170	**Enhanced Ferroelectric Switching Properties in Si FeFETs by Engineering of Oxygen Sources in $HfZrO_x$ Atomic Layer Deposition** Jihoon Jeon[1,2], Song-hyeon Kuk[3], Sang Hyeon Kim[3], Seung-Hyub Baek[2], and Seong Keun Kim[1,2] *[1]KU-KIST Graduate School of Converging Science and Technology, Korea University, [2]Electronic Materials Research Center, KIST, [3]School of Electrical Engineering, KAIST*
WP1-171	**A Study on the Oxidation State for Oxide Semiconductors with Relative Quantification** Min-Yeong Choi[1,2], Yong-Eun Kwon[1], Young-Min Kim[2], and Jae Hyuck Jang[1,3] *[1]Center for Electron Microscopy Research, KBSI, [2]Department of Energy Science, Sungkyunkwan University, [3]Graduate School of Analytical Science and Technology*
WP1-172	**Reaction Mechanism of Thermal Atomic Layer Deposition of Silicon Carbonitride Thin Films** Tanzia Chowdhury[1], Hye-Lee Kim[2], Khabib Khumaini[1,3], Romel Hidayat[1], Jeong Woo Han[4], Jae Seok An[4], Jang-Hyeon Seok[4], Jung Woo Park[4], and Won-Jun Lee[1,2] *[1]Department of Nanotechnology and Advanced Materials Engineering, Sejong University, [2]Metal-organic Compounds Materials Research Center, Sejong University, [3]Universitas Pertamina, [4]Hansol Chemical Co., LTD*

WP1-173	**Surface Reaction of Novel Zirconium Precursor for Atomic Layer Deposition of Zirconium Oxide: A Density Functional Theory Study** Romel Hidayat[1], Hye-Lee Kim[2], Sang-Ick Lee[3], and Won-Jun Lee[1,2] *[1]Department of Nanotechnology and Advanced Materials Engineering, Sejong University, [2]Metal-organic Compounds Materials Research Center, Sejong University, [3]DNF Co., Ltd.*
WP1-174	**Growth of h-BN by Adjusting Growth Conditions in CVD and Measurement of Crossbar Array Device Characteristics** Do Kyeong Yun and Woo Jong Yu *Department of Electrical and Computer Engineering, Sungkyunkwan University*
WP1-175	**Influence of Metal Doping in Ferroelectric and Ferromagnetic Properties of PFN Thin Films** Ahrom Ryu[1,2], Haena Yim[1], Sahn Nahm[2], and Ji-Won Choi[1,3] *[1]Center for Electronic Materials, KIST, [2]Department of Material Science and Engineering, Korea University, [3]Nanomaterials Science and Engineering, University of Science and Technology (UST)*
WP1-176	**Ideal Photodetector Using WSe_2/MoS_2 Heterostructure with Controlled Doping** Sung Hyun Kim and Woo Jong Yu *Department of Electrical and Computer Engineering, Sungkyunkwan University*
WP1-177	**High Photoresponsivity Photodetector by MoS_2/WSe_2 Heterostructure for Photodetector** Seok Won Choi and Woo Jong Yu *Department of Electrical and Computer Engineering, Sungkyunkwan University*

E. Compound Semiconductors

심사위원: 김동현 박사(KANC), 민병규 박사(ETRI)

WP1-178	**DC Characterizations of AlGaN/GaN FinFETs Dependent on Fin Widths** Ki-Sik Im, Yong-Goo Kim, and Byoung Man Bang *Department of Green Semiconductor System, Daegu Campus, Korea Polytechnics*
WP1-179	**Electrical Properties of Pt/p-$CuAlO_2$/β-Ga_2O_3 Heterojunction with a Copper Aluminum Oxide Interlayer** Chowdam Venkata Prasad and You Seung Rim *Department of Intelligent Mechatronics Engineering and Convergence Engineering for Intelligent Drone, Sejong University*
WP1-180	**Compared to AlGaN/GaN HEMTs' Electrical Characteristics with and without a SiCN Cap Layer** Yeo Jin Choi, Seung Mun Back, and Sung Jin An *Kumoh National Institute of Technology*
WP1-181	**Fabrication Process Dependence of Proton Irradiation Damage on GaN Electronics** Young Jun Yoon[1], Jae Hwa Seo[2], and Dong-Seok Kim[1] *[1]Korea Multi-purpose Accelerator Complex, KAERI, [2]Advanced Semiconductor Research Center, KERI*
WP1-182	**Analysis for the Electrical Characteristic of Recessed-Gate AlGaN/GaN MOSFET with Stepped Gate Oxide** Ga Eon Kang, Sang Ho Lee, Jin Park, Geon Uk Kim, Jun Hyeok Heo, So Ra Jeon, and In Man Kang *School of Electronic and Electrical Engineering, Kyungpook National University*
WP1-183	**틸트 이온주입을 적용한 1.2 kV 급 SiC Trench MOSFET의 차단모드 특성 개선을 위한 설계** 박영은, 윤효원, 김채윤, 김광재, 강규혁, 석오균 *금오공과대학교 전자공학부*
WP1-184	**Effects of Pulse I-V Stress on Normally-on AlGaN/GaN HEMT Devices** Sakhone Pharkphoumy[1], Hyeon Cheol Kim[1], Vallivedu Janardhanam[1], Tae-Hoon Jang[2], Chel-Jong Choi[1], and Kyu-Hwan Shim[1,2] *[1]School of Semiconductor and Chemical Engineering, Semiconductor Physics Research Center, Jeonbuk National University, [2]R&D Center, Sigetronics, Inc.*
WP1-185	**Enhanced Electrical Performance β-Ga_2O_3(100) MOSFET with Hafnium Oxide Passivation Layer** Seung Yoon Oh, Jeong Yong Yang, SangHee Kim, Gyuhyung Lee, and Geonwook Yoo *School of Electronic Engineering, Soongsil University*

WP1-186	**A Hybrid Schottky-Ohmic Drain Electrode for β-Ga_2O_3 Field-Effect Transistors** SangHee Kim, Yeong Je Jeong, Seung Yoon Oh, Gyuhyung Lee, and Geonwook Yoo *School of Electronic Engineering, Soongsil University*
WP1-187	**Growth of Si-on-SiC Using Mixed-Source Hydride Vapor Epitaxy** Seonwoo Park[1], Kyoung Hwa Kim[1], Suhyun Mun[1], Hyung Soo Ahn[1], Jae Hak Lee[1,2], Min Yang[1], Young Tea Chun[1], Sam Nyung Yi[1], Won Jae Lee[3], Sang-Mo Koo[4], and Suck-Whan Kim[5] *[1]Korea Maritime and Ocean University, [2]LNBS Co., Ltd., [3]Dong-Eui University, [4]Kwangwoon University, [5]Andong National University*
WP1-188	**β-Ga_2O_3 기반 쇼트키배리어다이오드의 오믹 접합 특성 향상 연구** Won Jin Song and You Seung Rim *Department of Intelligent Mechatronics Engineering and Convergence Engineering for Intelligent Drone, Sejong University*
WP1-189	**Elastic Stiffness Constants of $(Al_xGa_{1-x})_2O_3$ from First-principles Calculations** Hyo Kyung Lim and Byoung Don Kong *Department of Electrical Engineering, POSTECH*
WP1-190	**Thin-AlGaN/GaN MIS Gate HFET with ALD AlN Film** Won-Ho Jang, Jun-Hyeok Yim, and Ho-Young Cha *School of Electrical and Electronic Engineering, Hongik University*
WP1-191	**Investigation on the Effects of Defect Density of β-Ga_2O_3 Epitaxial Layer by Comparing Breakdown Voltage of Vertical Schottky Barrier Diode** Hyeon-Cheol Kim[1], Sakhone Pharkphoumy[1], Tae-Hoon Jang[2], Chel-Jong Choi[1], and Kyu-Hwan Shim[1,2] *[1]Jeonbuk National University, [2]R&D Division, Sigetronics, Inc.*
WP1-192	**Trench MIS 구조를 갖는 수직형 GaN PIN 다이오드의 구조 최적화** Sung-Hoon Lee[1], Jeongjin Kim[1], Cholho Kwak[2], Ho-Young Cha[1,2] *[1]School of Electronic and Electrical Engineering, Hongik University, [2]ChipsK Corp.*
WP1-193	**The Current Monitored p-GaN Etch Process for E-mode AlGaN/GaN HEMTs** Yumin Koh[1,2], Jiseon Lee[1], Arim Choi[1], Myungsoo Park[1], Yun-hee Shin[1], Dong-Hyun Kim[1], Sangwook Nam[2], and Kwang-Seok Seo[1] *[1]KANC, [2]Seoul National University*
WP1-194	**Analysis on Defect States of $FA_{1-x}MA_xPbI_3$ Perovskite Single Crystals Grown by Inverse Temperature Crystallization** Kyoung Su Lee[1], Dae Young Park[2], Mun Seok Jeong[2], and Eun Kyu Kim[1] *[1]Department of Physics and Research Institute of Natural Sciences, Hanyang University, [2]Department of Physics and Department of Energy Engineering, Hanyang University*

WP1-195	**SPDT MMIC 설계를 위한 GaN HEMT 스위치 소자 소신호 모델링** 김성일, 이상흥, 노윤섭, 장성재, 정현욱, 최일규, 안호균, 임종원 *한국전자통신연구원 DMC융합연구단*
WP1-196	**Process Optimization for Highly Uniform $In_{0.53}Ga_{0.47}As$ Channeled InP HEMT Devices on 3-inches-diameter InP(100) Substrate** Jaephil Shim[1], Hyunchul Jang[1], Chang-Hun Song[1,2], Donghyun Kim[1], and Chan-Soo Shin[1] *[1]KANC, [2]Yonsei University*
WP1-197	**Study of Vertical PiN Structure Using Intrinsic AlGaN Drift Layer** Yunseok Heo, Joocheol Jeong, Minho Kim, Shyam Mohan, Keono Kim, Jooyong Park, Joonhyuk Lee, and Okhyun Nam *Convergence Center for Advanced Nano Semiconductor (CANS), Department of Nano-Semiconductor Engineering, Tech University of Korea*
WP1-198	**Interfacial Layer Thickness Effect for Ferroelectric $Hf_xZr_{1-x}O_2$ on InGaAs** Kyul Ko[1,2], Dae-Hwan Ahn[1], Byeong-Kwon Ju[2], and Jae-Hoon Han[1] *[1]KIST, [2]Korea University*
WP1-199	**Fabrication of AlGaN/GaN Heterostructure FET Using Multi-Step Ohmic Annealing Process** Zin-Sig Kim, Hyung-Seok Lee, and Sung-Bum Bae *ICT Materials & Components & Research Laboratory, ETRI*
WP1-200	**High Conduction Band Offset of ALD BeO Films on β-Ga_2O_3 Substrates** Dohwan Jung[1], Yoonseo Jang[1], Prakash R. Sultane[2], Christopher W. Bielawski[2,3], and Jungwoo Oh[1] *[1]School of Integrated Technology, Yonsei University, [2]Center for Multidimensional Carbon Material, IBS, [3]Department of Chemistry, UNIST*
WP1-201	**Design and Growth of Normally-off p-GaN Gate AlN-Buffer HEMTs** Joonhyuk Lee, Minho Kim, Joocheol Jeong, Keono Kim, Yunseok Heo, Jooyong Park, and Okhyun Nam *Convergence Center for Advanced Nano Semiconductor, Department of Nano-Semiconductor, Tech University of Korea*
WP1-202	**Fabrication and Characterization of Vertical GaN Schottky Barrier Diodes** Minwoo Park[1], Gyeong-hun Jung[1], Kyoung-Kook Kim[1], Jongseob Kim[2], and Jaehee Cho[3] *[1]Tech University of Korea, [2]Samsung Advanced Institute of Technology, Samsung Electronics Co., Ltd., [3]School of Semiconductor and Chemical Engineering, Jeonbuk National University*
WP1-203	**GaSb LED Structures Grown on GaP-Si with AlSb Defect Filter Layer** Eung-Beom Yeon[1,2], Seungwan Woo[2,3], Rafael Jumar Chu[2], Tae Soo Kim[2,4], In-Hwan Lee[1], Daehwan Jung[2], and Won Jun Choi[2] *[1]Department of Materials Science and Engineering, Korea University, [2]Center for Opto-Electronic Materials and Devices, KIST, [3]Department of Materials Science and Engineering, Seoul National University, [4]School of Electrical and Electronic Engineering, Yonsei University*

WP1-204	**Analytical Model for Source Resistance in $In_xGa_{1-x}As$ Quantum-well High-electron-mobility Transistors** Ji-Hoon Yoo, In-Geun Lee, Jae-Hak Lee, and Dae-Hyun Kim *School of Electronic and Electrical Engineering, Kyungpook National University*
WP1-205	**A New Technique to Extract Saturation Velocity of $In_{0.53}Ga_{0.47}As/In_{0.52}Al_{0.48}As$ Quantum-Well** Hyo-Jin Kim, In-Geun Lee, Jae-Hack Lee, and Dae-Hyun Kim *School of Electronic and Electrical Engineering, Kyungpook National University*
WP1-206	**Annealing Method Dependent Thermistor Properties for Cu_2CoSnS_4 Films on Glass via Direct Spin-coating Process** Hyeon Bin Jo, Mokurala Krishnaiah, Soo Hyun Kim, Seo Young Jo, Su Hyun Cho, Minseob Kim, and Sung Hun Jin *Department of Electronic Engineering, Incheon National University*
WP1-207	**An Experimental Study of Tantalum Nitride Thin Film Resistor based on Dielectric Assisted Lift-off Process for the High Power GaN MMIC Platform** E-San Jang, Jong Yul Park, Hong Gu Ji, Byoung-Gue Min, and Dong Min Kang *RF/Power Components Research Section, ETRI*
WP1-208	**Effect of p-type Li-doped NiO_x/n-Ga_2O_3 Power Diode** Ji Young Min[1], Taehyun Kim[2], Young-Kyun Jung[2], Taeho Jeong[2], and You Seung Rim[1] *[1]Department of Intelligent Mechatronics Engineering, and Convergence Engineering for Intelligent Drone, Sejong University, [2]Electronic Devices Research Team, Research and Development Division, Hyundai Motor Group*

F. Silicon and Group-IV Devices and Integration Technology

심사위원: 김명수 교수(UNIST), 권지민 교수(UNIST)

WP1-210	**A Comparative Study of the Annealing Effects of Nitrogen and Deuterium on Planar MOSFETs** Ja-Yun Ku, Dae-Han Jung, Dong-Hyun Wang, Khwang-Sun Lee, Sung-Su Yoon, Jae-Hun Kim, Tae-Hyun Kil, and Jun-Young Park *Chungbuk National University*
WP1-211	**Analysis of High Temperature Operating Characteristics of Double Gate Feedback Field Effect Transistor** Myeongho Park, Kichan Kim, Seungyeon Oh, and Il Hwan Cho *Department of Electronic Engineering, Myongji University*
WP1-212	**염기성 용액 내 용존 산소 농도에 따른 Si 표면 상 파티클 제거 및 Si 식각 거동** 이준우, 임상우 *Department of Chemical and Biomolecular Engineering, Yonsei University*
WP1-213	**H_3PO_4 내 CO_2 생성을 통한 3D NAND 구조의 선택적 Si_3N_4 식각 및 산화물 재성장 억제** 김태현, 임상우 *Department of Chemical and Biomolecular Engineering, Yonsei University*
WP1-214	**Epoxy 및 Vinyl 계열 첨가제를 포함한 인산 용액 중 3D NAND 구조 내 Poly-Si의 식각 억제** 박태건, 임상우 *Department of Chemical and Biomolecular Engineering, Yonsei University*
WP1-215	**Dark Characteristic Improvement via Pixel Design and Implantation Modification for CMOS Image Sensor** Hyun Yoo, Suhye Park, Nam Yoon Kim, Hyo Sik Kim, Young-Ju Lee, Chang Ki Lee, Jun Ho Won, Keun Hyuk Lim, and Won Ho Lee *R&D Division, SK Hynix System IC*
WP1-216	**Self-Aligned Asymmetric Double-Gate (SA-ADG) Synaptic Transistors for Neuromorphic Systems** Bosung Jeon[1,2], Taejin Jang[1,2], Junsu Yu[1,2], and Woo Young Choi[1,2] *[1]Department of Electrical and Computer Engineering, Seoul National University, [2]Inter-university Semiconductor Research Center, Seoul National University*
WP1-217	**Junctionless Ferroelectric-Metal Field-Effect Transistors (JL FeMFETs)** Dong-Oh Kim[1,2,3], Changha Kim[1,2], Hyun-Min Kim[1,2], and Woo Young Choi[1,2] *[1]Department of Electrical and Computer Engineering, Seoul National University, [2]Inter-university Semiconductor Research Center, Seoul National University, [3]Semiconductor R&D Center, Samsung Electronics Co., Ltd.*

WP1-219	**피드백 전계효과 트랜지스터 기반 3진 인버터 동작 특성 연구** 손재민, 조경아, 김상식 *고려대학교 전기전자공학과*
WP1-220	**The Effect of Leakage Distribution Improvement according to Zener Diode Structure in 0.18um BCD Technology** Maeng Lee, Jung Kyu Yoon, Kyung Wook Kwon, Sun Goo Kim, Myung Hee Nam, and Jeong Soo Park *SK Hynix System IC*
WP1-221	**피드백 전계효과 트랜지스터 기반 Exclusive NOR 로직 동작 특성 연구** 신연우, 손재민, 조경아, 김상식 *고려대학교 전기전자공학과*
WP1-222	**Effect of Ge Mole Fraction on the Ambipolar Behavior of $Si_{1-x}Ge_x$ Tunnel Field-Effect Transistors** Min Jeong Ryu[1,2] and Woo Young Choi[1,2] *[1]Department of Electrical and Computer Engineering, Seoul National University, [2]Inter-university Semiconductor Research Center, Seoul National University*
WP1-223	**GAA-FET 제작을 위한 Si계 물질의 고선택 습식 식각** 이승효, 임상우 *Department of Chemical and Biomolecular Engineering, Yonsei University*
WP1-224	**오메가 게이트 구조를 갖는 실리콘 나노선 피드백 전계효과 트랜지스터의 전기적 특성 연구** 류승호[1], 손재민[2], 조경아[2], 김상식[1,2] *[1]고려대학교 반도체시스템공학과, [2]고려대학교 전기전자공학과*
WP1-225	**삼중 게이트 피드백 전계효과 트랜지스터의 메모리 특성 연구** 한종성[1], 전주희[2], 조경아[2], 김상식[1,2] *[1]고려대학교 반도체시스템공학과, [2]고려대학교 전기전자공학과*
WP1-226	**Improving the Contact Resistivity of $TiSi_2$ through a Ta Interlayer** Min-Su Kim[1], Seong-Hyun Hwang[1], Sungjoo Song[1], and Hyun-Yong Yu[2] *[1]Department of Semiconductor Systems Engineering, Korea University, [2]School of Electrical Engineering, Korea University*
WP1-227	**양자점을 이용한 플래시 메모리 기반 뉴로모픽 시냅스 모방 소자 연구** Ji Soo Choi[1], Jeong Mok Yang[1], So Yeon Jung[1], Jae Min Kim[1], Ye Eun Kim[1], Da Hyun Kang[1], Seok Gyu Kim[1], and Moon Gyu Jang[1,2] *[1]School of Nano Convergence Technology, Hallym University, [2]Center of Nano Convergence Technology, Hallym University*

WP1-228	**나노-초 레이저를 통한 저마늄에서의 인 (Phosphorus) 활성화** 백승훈, 권혁진, 이지은, 임형태, 박근태, 양규원, 권혁준 *대구경북과학기술원 전기전자컴퓨터공학과*
WP1-229	**Analysis of Self-Heating Effect according to Drain Contact Structure in SOI FinFET** Do Gyun An and Jang Hyun Kim *School of Electrical Engineering, Pukyong National University*
WP1-230	**수소 플라즈마 처리와 향상된 플라즈마 델타 도핑 공정을 이용한 저마늄 내부의 균일한 고농도 인 도핑** 정희재[1], 김윤상[2], 장봉호[1], 김준일[3,4], 송총명[1], 김세희[1], 권혁준[1] *[1]대구경북과학기술원 전기전자컴퓨터공학과, [2](주)세메스, [3]대구경북과학기술원 정보통신융합연구소, [4]대구경북과학기술원 후각융합연구센터*
WP1-231	**A Study on the Electrical Properties of a Neuromorphic Device with a Metal/Insulator/Metal/Insulator Stack Structure** Jeongmok Yang[1], Jisoo Choi[1], Soyeon Jung[1], Jaemin Kim[1], Yeeun Kim[1], Dahyun Kang[1], Seokgyu Kim[1], and Moongyu Jang[1,2] *[1]School of Nano Convergence Technology, Hallym University, [2]Center of Nano Convergence Technology, Hallym University*
WP1-232	**Enhancement of High Voltage Transistor Gate Oxide Reliability by Fluorine Implantation in 28nm HKMG Technology** Muhyun Jin, Il-Hwan Hwang, Dong-Il Park, Youngmok Kim, Kyunglyong Kang, Jun-gu Kang, Byung-hun Kim, Yeonkwang Lee, Injae Jeong, Junghwan Yum, and Yongsang Jeong *Foundry Division, Samsung Electronics Co., Ltd.*
WP1-233	**Tunnel Field-Effect Transistor-Based Charge Trapping Memory for In-Memory Computing** Chang Heon Park[1,2] and Woo Young Choi[1,2] *[1]Department of Electrical and Computer Engineering, Seoul National University, [2]Inter-university Semiconductor Research Center, Seoul National University*
WP1-234	**낮은 Rs를 갖는 RF 수신기 보호용 고전압 PIN Limiter 다이오드** 원종일, 정동윤, 조두형, 장현규, 박건식 *ETRI ICT창의연구소 반도체소부장기술센터*
WP1-235	**Effect of Cell Position in Cell Strings on the Performance of Neural Networks Using NAND Flash Memory** Gyuho Yeom, Jae-Joon Kim, and Jong-Ho Lee *Department of Electrical and Computer Engineering, Seoul National University*
WP1-236	**Synaptic Devices based on 3D-Semicircular NAND Flash Memory** Seongbin Oh[1,2], Woo Young Choi[1,2], and Jong-Ho Lee[1,2,3] *[1]Department of Electrical and Computer Engineering, Seoul National University, [2]Inter-university Semiconductor Research Center, Seoul National University, [3]Ministry of Science and Technology Information and Communication*

WP1-237	**Investigation of the Effects on Random Dopant Fluctuation and Work-Function Variation of Monolithic 3D Inverter Stacked with MOSFETs** Geun Jae Lee and Yun Seop Yu *Major of ICT & Robotics Engineering, Hankyong National University*
WP1-238	**Investigation of Electrical Coupling of Monolithic 3-Dimensional Inverting Logic-in-Memory Cell Consisting of the Feedback Field-Effect Transistor** Jong Hyeok Oh and Yun Seop Yu *Major of ICT & Robotics Engineering, Hankyong National University*
WP1-239	**Reliability Analysis by Corner Rounding of 3nm mNS-FET** Jae Won Lim and Jong Wook Jeon *Department of Electrical and Electronics Engineering, Konkuk University*
WP1-240	**Evaluation of Ultra-low Power Logic Device and Circuit Characteristics by Applying Various PTMs in the Latest Technical Node** Hanggyo Jung and Jongwook Jeon *Department of Electrical and Electronics Engineering, Konkuk University*
WP1-241	**Self-heating SPICE Modeling of 3nm Multi-Stacked Nanosheet FET** Woo Kyung Kwon, Chang Hyun Yoo, and Jong Wook Jeon *Department of Electrical and Electronics Engineering, Konkuk University*
WP1-242	**Analysis of Circuit Characteristics in Various Architectures of Sub-2nm Node Oriented MoS_2-FET** Jihun Park and JongWook Jeon *Department of Electrical and Electronics Engineering, Konkuk University*
WP1-243	**Green Laser를 이용한 ALD-HZO 강유전체 특성 구현 연구** 김승모[1], 김기성[1], 추형석[2], 김민재[1], 이해원[1], 황현준[1], 이병훈[1] *[1]Department of Electrical Engineering, POSTECH, [2]Department of Electrical and Computer Engineering, Sungkyunkwan University*
WP1-244	**T-CMOS Inverter Operation and Variation Analysis** Young-Eun Choi[1], Woo-Seok Kim[1], Myoung Kim[1], Min Woo Ryu[1,2], and Kyung Rok Kim[1,2] *[1]Department of Electrical Engineering, UNIST, [2]Ternell Corp.*
WP1-245	**V_{DD} Scaling of T-CMOS with Ion Implantation Process Condition** Young-Eun Choi[1], Woo-Seok Kim[1], Myoung Kim[1], Min Woo Ryu[1,2], and Kyung Rok Kim[1,2] *[1]Department of Electrical Engineering, UNIST, [2]Ternell Corp.*

WP1-246	**Frequency Doubler with Tunnel Field-Effect Transistor Using Line-Tunneling Layer** Ju Hong Min and Jang Hyun Kim *School of Electrical Engineering, Pukyong National University*
WP1-247	**Highly Scalable and Energy Efficient Ternary-CMOS Technology** Woo-Seok Kim[1], Young-Eun Choi[1], Myoung Kim[1], Min Woo Ryu[1,2], and Kyung Rok Kim[1,2] *[1]Department of Electrical Engineering, UNIST, [2]Ternell Corp.*
WP1-248	**모오스 구동 싸이리스터를 적용한 반도체 릴레이** 정동윤[1], 박건식[1], 김상인[2], 조두형[1], 장현규[1], 원종일[1], 임종원[1] *[1]한국전자통신연구원, [2]갑승파워시스템*
WP1-249	**Implementation of Neuromorphic Circuits Using Floating Body Effect** Heejune Cho[1], Il Hwan Cho[2], and Garam Kim[2] *[1]Department of Semiconductor Equipment Engineering, Myongji University, [2]Department of Electronic Engineering, Myongji University*
WP1-250	**Value-Maximized 17nm FinFET Technology beyond 200M Pixel CMOS Image Sensor** Kyungtaek Lee, B. C. Park, D. R. Chang, S. Hwang, S. Wi, K. Choi, S. Her, J. Choi, H. Park, Y. Lee, H. Choi, J. Lee, S. Kim, S. Kim, I. Kim, S. Park, Y. Park, C. J. Lee, M. K. Park, J. C. Kim, S. Maeda, J. H. Lee, and Gitae Jeong *Foundry Division, Samsung Electronics Co., Ltd.*
WP1-251	**Cathode 최적화를 통한 Single-Photon Avalanche Diode 성능 개선** 육세영[1,2], 엄도윤[1], 이명재[1] *[1]한국과학기술연구원 차세대반도체연구소 광전소재연구, [2]숙명여자대학교 ICT융합공학부 전자공학전공*
WP1-252	**CMOS 공정 기반 후면 조사 SPAD의 수광 효율 평가** Eunsung Park[1,2], Woo-Young Choi[1], and Myung-Jae Lee[2] *[1]Department of Electrical and Electronic Engineering, Yonsei University, [2]Post-Silicon Semiconductor Institute, KIST*
WP1-253	**TCAD-Based Analysis of Random Dopant Fluctuation Induced Variability in Ternary-CMOS** Woo-Seok Kim[1], Young-Eun Choi[1], Myoung Kim[1], Min Woo Ryu[1,2], and Kyung Rok Kim[1,2] *[1]Department of Electrical Engineering, UNIST, [2]Ternell Corp.*
WP1-254	**High Responsivity Solar Blind Photodetector based on α-Ga_2O_3** DeokWon Seo, YoungHoon Kim, and JunSeok Heo *Electrical and Computer Engineering, Ajou University*

WP1-255	**Ternary SRAM-Based Processing-in-Memory Cell for Edge AI Devices** Myoung Kim[1], Young Eun Choi[1], Woo-seok Kim[1], Min Woo Ryu[1,2], and Kyung Rok Kim[1,2] *[1]Department of Electrical Engineering, UNIST, [2]Ternell Corp.*
WP1-256	**High-Speed THz Detector Design with Monolithic Trantenna** Sang Hyo Ahn[1], Minjae Kim[1], Myoung Kim[1], Yoo Bin Song[1], Min Woo Ryu[1,2], and Kyung Rok Kim[1,2] *[1]Department of Electrical Engineering, UNIST, [2]Ternell Corp.*
WP1-257	**CMOS SPAD 구조 및 Guard Ring 사이즈에 따른 Noise 특성 변화** Myeong-Hun Yu[1,2], Eunsung Park[1,3], and Myung-Jae Lee[1] *[1]Post-Silicon Semiconductor Institute, KIST, [2]Department of Electronic and Information Technology Media Engineering, Seoul National University of Science and Technology, [3]Department of Electrical and Electronic Engineering, Yonsei University*
WP1-258	**CMOS공정 기반 SPAD의 구조에 따른 Breakdown Voltage 검증 및 응용** Yun-Mi Moon[1,2], Eunsung Park[1,3], and Myung-Jae Lee[1] *[1]Post-Silicon Semiconductor Institute, KIST, [2]Department of Electronic and Information Technology Media Engineering, Seoul National University of Science and Technology, [3]Department of Electrical and Electronic Engineering, Yonsei University*
WP1-259	**Comparison of Current-Voltage Characteristics with Channel Length of Nanosheet FET and FinFET** Eunseo Ahn and Yun Seop Yu *Hankyung National University*
WP1-260	**SPAD Pixel 검증을 위한 전용회로 및 이를 적용한 측정 방법** Hyo-Sung Park[1,2], Woo-Young Choi[1], and Myung-Jae Lee[2] *[1]Department of Electrical and Electronic Engineering, Yonsei University, [2]Post-Silicon Semiconductor Institute, KIST*
WP1-261	**Terahertz Near-field Microscopy based on Trantenna with Aperture** Min Jae Kim[1], Sang Hyo Ahn[1], Yoo Bin Song[1], Min Woo Ryu[1,2], and Kyung Rok Kim[1,2] *[1]Department of Electrical Engineering, UNIST, [2]Ternell Corp.*
WP1-262	**Optimization of Double-Gate TFET with Vertical Channel Sandwiched by Lightly Doped Si** Hyunho Ahn[1], Seungwon Go[1], Dong Keun Lee[2], Jang Hyun Kim[3], and Sangwan Kim[1] *[1]Department of Electronic Engineering, Sogang University, [2]Department of Electrical and Computer Engineering, Ajou University, [3]School of Electrical Engineering, Pukyong National University*
WP1-263	**More Physics-Based Compact Modeling of a Synaptic Device for Large-Area Simulation of Advanced Computing Systems** Saurabh Suredra Joshi and Seongjae Cho *Department of Electronic Engineering, Gachon University*

WP1-264	**A Compact Leaky Integrate-and-Fire Neuron Circuit for Spiking Neural Network** Arati Kumari Shah and Seongjae Cho *Department of Electronic Engineering, Gachon University*
WP1-265	**Analysis of CP Current for Charge-pumping Conditions with TCAD** Yoo Bin Song, Sang Hyo Ahn, Min Jae Kim, Min Woo Ryu, and Kyung Rok Kim *Department of Electrical Engineering, UNIST*
WP1-266	**Statistical Study on Grain Size in the Post-Annealed Ultra-Thin Polycrystalline Si Thin Film** Gyuhoon Lee[1], Yongmin Kim[1], Yelin Yoo[1], Yujin An[1], Yongwoo Kwon[2], Kyung Song[3], and Seongjae Cho[1] *[1]Department of Electronic Engineering, Gachon University, [2]Department of Materials Science and Engineering, Hongik University, [3]Materials Modeling and Characterization Department, KIMS*
WP1-267	**생물체의 특이적 시각계 구조를 모방한 이미징 센서 시스템** 김민수, 김대형 *서울대학교 화학생물공학부*

G. Device & Process Modeling, Simulation and Reliability

심사위원: 백록현 교수(POSTECH), 나현철 상무(DB하이텍)

WP1-268	**Bio-Inspired Compliance Control Unit with Co-Integrated Neuromorphic Devices** Hery Shin, Ji-Man Yu, Joon-Kyu Han, and Yang-Kyu Choi *KAIST*
WP1-269	**Junction Depth Optimization in Nanosheet FETs Fabricated on Silicon-on-Insulator (SOI) Substrate** Sung-Su Yoon, Khwang-Sun Lee, Ja-Yun Ku, Dae-Han Jung, Dong-Hyun Wang, Jae-Hun Kim, Tae-Hyun Kil, and Jun-Young Park *Chungbuk National University*
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K. Memory (Design & Process Technology)

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WP1-435	**3차원 적층형 실리콘 나노와이어 더블 팁 저항 변화 메모리** 이원주[1], 구민석[2] *[1]서울시립대학교 전자전기컴퓨터공학과, [2]인천대학교 컴퓨터공학부*
WP1-436	**Dopant Optimization in DRAM Buried Contact for Reducing Radiation Failure** Heejae Choi, Hyewon Seo, Taiuk Rim, Kyosuk Chae, Sungsam Lee, Jeonghoon Oh, Hyodong Ban, and Jooyoung Lee *DRAM Product & Technology, Samsung Electronics Co., Ltd.*

WP1-437	**Synaptic Characteristics of SWNT-FET for Neuromorphic Computing Application** Jisoo Kim[1], Hyunjoo Hwang[1], Wonwoo Kho[1], Gyuil Park[1], Jisu Byun[1], Yoomi Kang[1], Minjeong Kang[1], and Seung-Eon Ahn[1,2] *[1]Department of IT · Semiconductor Convergence Engineering, Tech University of Korea, [2]Department of Nano and Semiconductor Engineering, Tech University of Korea*
WP1-438	**Effect of RF Power in the Sputter-deposition of Amorphous InGaZnO Film on the Synaptic Weight Update Characteristic of InGaZnO Memristors** Dong Hyeop Shin, Seung Joo Myoung, Donguk Kim, Jong-Ho Bae, Sung-Jin Choi, Dong Myong Kim, and Dae Hwan Kim *School of Electrical Engineering, Kookmin University*
WP1-439	**FINFET 구조의 SRAM에서의 읽기 동작 마진 분석** 이수지, 전정훈 *성균관대학교 전자전기컴퓨터공학과*
WP1-440	**$HfZrO_2$ Thin-film Transistor as Synaptic Device Using ALD Process for Advanced Neuromorphic Computing** Eun Seo Jo and You Seung Rim *Department of Intelligent Mechatronics Engineering and Convergence Engineering for Intelligent Drone, Sejong University*
WP1-441	**Demonstration of Binary Neural Network based on the Amorphous InGaZnO Memristor-Based 10×10 Crossbar Array for the 1T1M Integration** Seung Joo Myoung, Donguk Kim, Hee Jun Lee, Dong Hyeop Shin, Sung-Jin Choi, Jong-Ho Bae, Dong Myong Kim, and Dae Hwan Kim *School of Electrical Engineering, Kookmin University*
WP1-442	**Ternary Content Addressable Memory Modeling Using Non-volatile Ferroelectric Field Effect Transistors with Mono-layer WS_2** Juhwan Park, Changho Ra, and Jongwook Jeon *Department of Electrical and Electronics Engineering, Konkuk University*
WP1-443	**Emulating Synaptic Characteristics of Ferroelectric Aluminum Doped HfO_2 for Neuromorphic Engineering** Jihyung Kim, Doohyung Kim, Juri Kim, Hyojin So, Eunjin Lim, Dongyeol Ju, Gyutaek Oh, and Sungjun Kim *Department of Electronics and Electrical Engineering, Dongguk University*
WP1-444	**Full Adder Circuit Design Using Non-volatile Ferroelectric Field Effect Transistors with Mono-layer WS_2 Channel** Huijun Kim, Changho Ra, and Jongwook Jeon *Department of Electrical and Electronics Engineering, Konkuk University*
WP1-445	**Linear Transient Current Response of a Charge Trap Memristor** Younghyun Lee and Kyung Min Kim *Department of Materials Science and Engineering, KAIST*

WP1-446	**Analysis of Memory Characteristics of a-IGZO-Based 2T-DRAM** Seongwon Lee, Hyojin Yang, Sanghyuk Yun, Haesung Kim, Sung-Jin Choi, Dong Myong Kim, Dae Hwan Kim, and Jong-Ho Bae *School of Electrical Engineering, Kookmin University*
WP1-447	**Non-volatile Resistive Switching of Pt/HfO_2/TiN/HfO_2/TiN in 2F VRRAM** Seyeong Yang, Gyeongpyo Kim, Jungwoo Lee, Youngboo Cho, Seonghoon Kim, Subaek Lee, Hyeongseung Ji, and Sungjun Kim *Division of Electronics and Electrical Engineering, Dongguk University*
WP1-448	**Effect of IGZO/HfO_2 Ferroelectric Capacitor Structure on Polarization Switching** Sejun Park, Hyojin Yang, Haesung Kim, Sanghyuk Yun, Dong Myong Kim, Dae Hwan Kim, Sung-Jin Choi, and Jong-Ho Bae *School of Electrical Engineering, Kookmin University*
WP1-449	**IGZO Synaptic Thin-film Transistors with Bilayer Gated of $HfAlO_X$ and CeO_X** Beomki Jeon, Yunseok Lee, Yongjin Park, Seongmin Kim, Jungang Heo, Junwon Jang, Sangwoo Kang, and Sungjun Kim *Division of Electronics and Electrical Engineering, Dongguk University*
WP1-450	**Ionic-Gel Based Electric Double Layer Synaptic Transistor for Neuromorphic Computing** Kyong Jae Kim and You Seung Rim *Department of Intelligent Mechatronics Engineering, and Convergence Engineering for Intelligent Drone, Sejong University*
WP1-451	**Reservoir Optimization in Oxygen-Based Electrochemical Random-Access Memory for Improved Synaptic Characteristics** Seungkun Kim, Jeonghoon Son, and Seyoung Kim *Department of Materials Science and Engineering, POSTECH*
WP1-452	**High Performance Neural Network Inference with a 3D NAND-like Synaptic Weight Storage** Byoungwoo Lee, Min-Kyu Kim, Ik-Jyae Kim, Jang-Sik Lee, and Seyoung Kim *POSTECH*
WP1-453	**Analysis on Electric Field and Polarization Switching in Ferroelectric HfO_2 Amorphous $InGaZnO_x$ Thin-Film Transistor** Ha Neul Lee, Hyojin Yang, Haesung Kim, Sanghyuk Yun, Seongwon Lee, Sung-Jin Choi, Dong Myong Kim, Dae Hwan Kim, and Jong-Ho Bae *School of Electrical Engineering, Kookmin University*
WP1-454	**Threshold Voltage Control of Amorphous InGaZnO Thin-Film Transistor for Ferroelectric Memory Application** Sanghyuk Yun, Hyojin Yang, Sung-Jin Choi, Dong Myong Kim, Dae Hwan Kim, and Jong-Ho Bae *School of Electrical Engineering, Kookmin University*

WP1-455	**Multilevel Cell Nonvolatile Memory with Ferroelectric Modulated Antiferroelectric Superlattice Field Effect Transistors (FETs)** Yu Jeong Choi[1], Chulwon Chung[2], Boncheol Ku[1], Jin Ho Park[1], Se Jin Kim[1], and Changhwan Choi[1] *[1]Division of Materials Science and Engineering, Hanyang University, [2]Deparment of Energy Engineering, Hanyang University*
WP1-456	**저전압 동작을 위한 SRAM 읽기 보조 회로** Ju Hwan Seok and Jung-Hoon Chun *Department of Semiconductor and Display Engineering, Sungkyunkwan University*
WP1-457	**시냅스 소자의 Retention 특성이 Tiki-Taka 알고리즘 기반 뉴럴 네트워크 학습의 정확도에 미치는 영향에 관한 연구** Doyoon Kim and Seyoung Kim *Department of Materials Science and Engineering, POSTECH*
WP1-458	**Optimization of Memory Properties of 2T-DRAM Cell by a-IGZO TFT Engineering** Junseong Park, Haesung Kim, Hyojin Yang, Seongwon Lee, Sanghyuk Yun, Sejun Park, Haneul Lee, Sung-Jin Choi, Dae Hwan Kim, Dong Myong Kim, and Jong-Ho Bae *School of Electrical Engineering, Kookmin University*
WP1-459	**Influence of $Ge_2Sb_2Te_5$ Insertion for the Performance of ZrO_2 Resistive Switching Devices and Their Application toward Neuromorphic Systems** Bidyashakti Dash, Ajit Kumar, Hyo Seob Kim, Hye Yeon You, Chang Woo Seo, Hyeon Seok Yoo, Hyo Jeong Park, and Sung Hun Jin *Department of Electronic Engineering, Incheon National University*
WP1-460	**ZrO_2 Thickness Effects on Resistive Switching Behaviors for Fully Transparent Stacked IGZO/ZrO_x Resistive Memory** Geun Lee, Da Han Lee, Se Hun Jung, Seong Been Wi, Dong Hyun Kim, Jun Woo Jung, and Sung Hun Jin *Department of Electronic Engineering, Incheon National University*

L. Analog Design

심사위원: 엄지용 교수(금오공과대학교), 정영호 교수(대구대학교)

WP1-461	**Design Method of Split Capacitor Array in SAR ADC to Mitigate the Impact on Parasitic Capacitor** Han-Yeol Lee, Dong-Shin Kim, Hyo-Bin Ahn, Yoon-Young Park, and Sun-Ha Hwang *SK Hynix System IC*
WP1-462	**A 8 Bit 8 GS/s Time Interleaved Current Steering DAC in 28-nm CMOS Technology** Tae Wha Hong and Jung-Dong Park *Division of Electronics and Electrical Engineering, Dongguk University*
WP1-463	**A 8 Bit 16 GS/s Current Steering DAC in 28-nm CMOS Technology** Tae Wha Hong and Jung-Dong Park *Division of Electronics and Electrical Engineering, Dongguk University*
WP1-464	**Sense Amplifier 에서 Power Noise 와 Parasitic R&C 의 영향** Jin-Gon Oh and Kee-Won Kwon *Department of Semiconductor and Display Engineering, Sungkyunkwan University*
WP1-465	**Effects of Inverter Circuit Size on Analog Pulse-Width Modulation Circuit** Joon Hwang[1,2], Min-Kyu Park[1,2], Won-Mook Kang[1,2], Woo Young Choi[1,2], and Jong-Ho Lee[1,2] *[1]Department of Electrical and Computer Engineering, Seoul National University, [2]Inter-university Semiconductor Research Center, Seoul National University*
WP1-466	**A Ring Amplifier for Pre-amplifier of SAR ADC Comparator** 조영원, 김의근, 박종민, 양성훈, 정재훈, 조요셉, 채종혁, 범진욱 *Sogang University*
WP1-467	**FMCW LiDAR에서 높은 분해능으로 거리를 탐지하기 위한 12.5ps의 High Resolution Ring Oscillator Type TDC in 28-nm CMOS** 이승주, 김의근, 박종민, 양성훈, 정재훈, 조영원, 조요셉, 채종혁, 범진욱 *Sogang University*
WP1-468	**A VGA CMOS Image Sensor with Dual CDS and Column-parallel Two-step Single Slope ADC for High Frame Rate** Seonghun Yang, Jaehun Jung, Youngwon Cho, Jongmin Park, Seungju Lee, Euigeun Kim, Yosep Jo, Jongheok Chae, and Jinwook Burm *Department of Electronic Engineering, Sogang University*

WP1-469	**LSB Correction Logic이 적용된 5-Ms/s 12-bit R-C Hybrid SAR ADC in 28-nm CMOS** 정재훈, 양성훈, 조영원, 범진욱 *Sogang University*
WP1-470	**Design of Asynchronous Digital LDO with Coarse-Fine-Tuning and Burst-Mode Operation** Wooyoung Choi and Junyoung Song *Department of Electronics Engineering, Incheon National University*
WP1-471	**Energy-efficient Neuron Circuit with Minimized Shoot-through Current** Jong Hyun Ko[1,2], Jae-Joon Kim[1,2], and Jong Ho Lee[1,2] *[1]Department of Electrical and Computer Engineering, Seoul National University, [2]Inter-university Semiconductor Research Center, Seoul National University*
WP1-472	**CMOS Inverter 기반의 Variable Gm Cell을 이용한 Crystal Oscillator** Yeong-Ryul Yun, Jung-Hun Kim, and In-Chul Hwang *Department of Electrical and Medical Convergent Engineering, Kangwon National University*
WP1-473	**A PVT-Variation Tolerant 6-bit Capacitor-DAC-Based Constant-Slope Digital-to-Time Converter** Gyuchan Cho and Jintae Kim *Konkuk University*
WP1-474	**A 10-bit 50 MS/s Flash-SAR Combined Sub-ranging ADC** Min-Hyeong Son and Ji-Yong Um *Department of Medical IT Convergence Engineering, Kumoh National Institute of Technology*
WP1-475	**Time-domain Equalization을 이용하는 6-Gsymblol/s MIPI C-PHY 수신기** 조민준, 김시한, 송창민, 장영찬 *금오공과대학교 전자공학부*
WP1-476	**56Gb/s PAM4 수신기를 위한 트랜스컨덕턴스-트랜스임피던스 VGA 회로** Yun Kuk Park and Jung Hoon Chun *Sungkyunkwan University*
WP1-477	**Feedback Detection 구조 및 개선된 Transient 특성을 갖는 LDO 레귤레이터** Sang Wook Kwon, Jung Min Lee, Woo-yeol Seo, and Yong-Seo Koo *Department of Electronics and Electrical Engineering, Dankook University*

WP1-478	**기준 클락 없이 동작하는 순수 디지털 클럭 및 데이터 복원 회로 설계** 박민수, 전정훈 *Department of Electrical and Computer Engineering, Sungkyunkwan University*
WP1-479	**적응형 PWM Duty 보상 회로를 가진 고정밀 PWM LED Driver IC** Ha-Kyung Lee, Jong-Tack Kim, Seok-In Hong, Dong-Won Lee, and Byung-Do Yang *Department of Electronics Engineering, Chungbuk National University*
WP1-480	**넓은 출력 전압 범위를 가지는 재구성 가능한 스위치드 커패시터 전력 변환기** Seok-In Hong, Jong-Tack Kim, Ha-Kyung Lee, Dong Won Lee, and Byung-Do Yang *Department of Electronics Engineering, Chungbuk National University*
WP1-481	**역전도 제어기를 구비한 BCD기반 고효율 GaN Gate Driver IC** 김동훈, 이용승, 한결, 김종선 *홍익대학교 전자전기공학과*
WP1-482	**듀오바이너리 프리코더를 이용한 송신단 설계 비교 연구** 한슬기, 이원영 *서울과학기술대학교 전자 IT미디어공학과*

M. RF and Wireless Design

심사위원: 권구덕 교수(강원대학교), 한상욱 수석연구원(삼성전자)

WP1-483	**Feed-Forward Equalizer and Decision-Feedback Equalizer with Adaptive Coefficient Engines for ADC-Based Receiver** Kwangho Lee, Haram Ju, Yongchul Jung, and Sungho Lee *Convergence Signal – SoC Research Center, KETI*
WP1-484	**An Output Enhancement Technique of a Concurrent-Mode CMOS Detector for Millimeter-Wave Imaging** Ju-Hyeon Park, Ha-Neul Lee, Ji-In Jeong, Ui-Gyu Choi, and Jong-Ryul Yang *Department of Electronic Engineering, Yeungnam University*
WP1-485	**입력 데이터의 Duty Cycle 왜곡에 동작할 수 있는 2 Clock 주기 샘플링을 사용한 Extended Bang-Bang Phase and Frequency Detector(XBBPFD)** 박종민, 조요셉, 이승주, 양성훈, 조영원, 정재훈, 김의근, 채종혁, 범진욱 *Sogang University*
WP1-486	**22.5Gb/s Switched Capacitor Based Two Tap Half-Rate DFE** 조요셉, 박종민, 양성훈, 이승주, 김의근, 정재훈, 조영원, 채종혁, 범진욱 *Sogang University*
WP1-487	**A 26-43GHz Wideband High Linearity CMOS Low-Noise Amplifier** Hyojin Yoon and Changkun Park *Department of Electronic Engineering, Soongsil University*
WP1-488	**A Ka-Band Vector Sum Phase Shifter Using Active Balun** Jimin Lee and Changkun Park *Department of Electronic Engineering, Soongsil University*
WP1-489	**Ka-Band GaN-Based LNA MMIC for 5G FR2 Applications** Hyun Bae Ahn, Sung-Min Son, and Junghwan Han *Chungnam National University*
WP1-490	**2.4GHz Bluetooth Low Energy Receiver with Quadrature Local Oscillator Buffer** Sukju Yun and Kuduck Kwon *Department of Electronics Engineering, Kangwon National University*

WP1-491	**Multi-Phase Bang-Bang Phase Locked Loop for 4Gb/s NRZ Clock and Data Recovery in 0.18um CMOS** Min-Jeong Son and In-Chul Hwang *Kangwon National University*
WP1-492	**GaN HEMT 공정을 이용한 Ku 대역 위성통신용 SPDT 스위치 설계** 빈수현[1], 양영구[1,2] *[1]성균관대학교 정보통신대학 전자전기컴퓨터공학과, [2]㈜파라피에이*
WP1-493	**Ku 대역 위성통신용 5 W GaN MMIC 전력증폭기** 김성형[1], 배순철[1], 양영구[1,2] *[1]성균관대학교 정보통신대학 전자전기컴퓨터공학과, [2]para-PA Inc.*
WP1-494	**20 Watt Ku-band GaN Power Amplifier MMIC for SATCOM** Sooncheol Bae[1], Seonghyoung Kim[1], and Youngoo Yang[1,2] *[1]Department of Electrical and Computer Engineering, Sungkyunkwan University, [2]para-PA Inc.*
WP1-495	**Design of Single-/Dual-band Signal Generation Using Electro-Optic Frequency Comb and Field Programmable Photonic Gate Array** Youngseok Bae, Sungjun Yoo, Seungbae Ahn, Dawon Yang, and Sanghoon Jin *Agency for Defense Development*
WP1-496	**94 GHz 1Tx 4Rx FMCW Radar Transceiver Using 28-nm CMOS Technology** Jin Uk Shin, Seuk Won Kang, Dong Yeol Yang, and Byung-Sung Kim *RF Microelectronic Design Lab., Sungkyunkwan University*
WP1-497	**Robust Wireless Power Transfer System for Implantable Bioelectronics** Seungwon Yoo[1,2,3,4], Seonghyeon Nam[1,2,3,4], and Dae-Hyeong Kim[1,2,3,4] *[1]Interdisciplinary Program, Bioengineering Major, Graduate School, Seoul National University, [2]School of Chemical and Biological Engineering, Seoul National University, [3]Institute of Chemical Processes, Seoul National University, [4]Center for Nanoparticle Research, IBS*

O. System LSI Design

심사위원: 정준원 교수(숙명여자대학교), 심민섭 교수(경상대학교)

WP1-498	**Adaptive Image Size Padding for Memory Load Balancing** So Yeon Kim[1], Yung-Cheol Byun[2], and Jae Young Hur[1] *[1]Department of Electronic Engineering, Jeju National University, [2]Department of Computer Engineering, Jeju National University*
WP1-499	**Xilinx Spartan-3 계열용 범용 역공학 도구** 신성균, 최소연, 이은채, 유호영 *충남대학교 전자공학과*
WP1-500	**저면적 저전력 Multiply-Accumulate(MAC) 구현** 이유진, 임지환, 유호영 *충남대학교 전자공학과*
WP1-501	**FPGA 기반 딜레이 가변 링 오실레이터 TRNG 구조** 양희훈, 박지호, 이상원, 최소연, 유호영 *충남대학교 전자공학과*
WP1-502	**Separated Driving-node Sense Amplifier with Enhanced Sensing Margin for Low Voltage Applications** Dong-Yeong Kim and Myoung Jin Lee *Department of ICT Convergence System Engineering, Chonnam National University*
WP1-503	**Indirect Time-of-Flight 이미지 센서를 위한 On-Chip 실시간 거리 계산 회로 구현** Seung-Ah Park and Jung-Hoon Chun *Department of Electrical and Computer Engineering, Sungkyunkwan University*
WP1-504	**Design Exploration of AES-CCM Implementation for Bluetooth LE** Yujin Jeon[1,2], Eunkyung Ham[1,2], Jaeyun Lim[1,2], and Ji-Hoon Kim[1,2] *[1]Ewha Womans University, [2]Smart Factory Multidisciplinary Program*
WP1-505	**AMBA Monitoring Platform for SoC Architectural Exploration** Jaeyun Lim[1,2], Eunkyung Ham[1,2], Yujin Jeon[1,2], and Ji-Hoon Kim[1,2] *[1]Ewha Womans University, [2]Smart Factory Multidisciplinary Program*

P. Device for Energy (Solar Cell, Power Device, Battery, etc.)

심사위원: 박정웅 교수(가천대학교), 유상우 교수(경기대학교)

WP1-506	**Boron Nitride Nanotube-ZnO QDs Nanocomposites for Transparent Flexible Piezoelectric Nanogenerator** Dong Su Shin and Dong Ick Son *Institute of Advanced Composite Materials, KIST*
WP1-507	**Electric Field-Enhanced Electrochemical Performance in Flexible In-Plane Micro-Supercapacitors** Jihong Kim[1], Sung Min Wi[1], Yeonsu Park[1], Sangjun Son[1], Hee Young Lim[1], Suok Lee[1], A-Rang Jang[2], and Young-Woo Lee[1] *[1]Department of Energy Systems Engineering, Soonchunhyang University, [2]Division of Electrical, Electronic, and Control Engineering, Kongju National University*
WP1-508	**Fabrication and Performances of Recessed Gate AlGaN/GaN MOSFET Using Mg Ion Implantation** Jun Hyeok Heo[1], Sang Ho Lee[1], Jin Park[1], Geon Uk Kim[1], Ga Eon Kang[1], So Ra Jeon[1], Young Jun Yoon[2], and In Man Kang[1] *[1]School of Electronic and Electrical Engineering, Kyungpook National University, [2]Korea Multi-purpose Accelerator Complex, KAERI*
WP1-509	**High Performance Flexible Micro-Supercapacitor based on MnO_2 Electrode with Oxygen Vacancy Control** Sung Min Wi[1], Jihong Kim[1], HeeYoung Lim[1], Yeonsu Park[1], Sangjun Son[1], Suok Lee[1], A-Rang Jang[2], and Young-Woo Lee[1] *[1]Department of Energy Systems Engineering, Soonchunhyang University, [2]Division of Electrical, Electronic, and Control Engineering, Kongju National University*
WP1-510	**플라즈마 차징을 이용한 패시베이션 기술 개발** 강민구, 정경택, 송희은 *한국에너지기술연구원*
WP1-511	**Advanced Carrier Lifetime Analysis Method of Silicon Solar Cells for Industrial Applications** Sang Hee Lee[1], Kwan Hong Min[1], Sungjin Choi[1], Hee-eun Song[1], Min Gu Kang[1], Kyung Taek Jeong[1], Taejun Kim[2], and Sungeun Park[1] *[1]Photovoltaic Laboratory, KIER, [2]PV R&D Center, Hyundai Energy Solutions*
WP1-512	**기계적 에너지 수확을 위한 $BaZnF_4$의 합성 및 나노발전소자 응용** Venkata Siva Kavarthapu, Sontyana Adonijah Graham, Punnarao Manchi, Mandar Vasant Paranjape, and Jae Su Yu *Kyung Hee University*
WP1-513	**Bimetallic-metal Organic Framework-derived Co_9S_8-MoS_2 Nanohybrids as an Efficient Bifunctional Electrocatalyst towards Hydrogen and Oxygen Evolution Reaction** Suok Lee[1], Yeonsu-Park[1], Sangjun Son[1], Jihong Kim[1], Sung Min Wi[1], Jong Bea Park[2], A-Rang Jang[3], and Young-Woo Lee[1] *[1]Department of Energy Systems Engineering, Soonchunhyang University, [2]Jeonju Centre, KBSI, [3]Division of Electrical, Electronic and Control Engineering, Kongju National University*

WP1-514	**High Performance Self-Powered Ag_2O/β-Ga_2O_3 P-N Junction-Based Solar-Blind UV Photodetector** Sangbin Park[1], Hyungmin Kim[1], Sangmo Kim[2], Kyung Hwan Kim[1], and Jeongsoo Hong[1] *[1]Department of Electrical Engineering, Gachon University, [2]Department of Smart Device Engineering, Sejong University*
WP1-515	**Ferroelectric B-Site Modified Bismuth Lanthanum Titanate Thin Films for High-Efficiency PV Systems** Rui Tang, Rui He, Sangmo Kim, Vo Thi Muoi, and Chung Wung Bark *Gachon University*
WP1-516	**Enhancement of Thermoelectric Performances in P-type Bismuth Telluride Based Nanocomposites via Solution Phase Bi_2Te_3-Mxene Ink** Sun-Woo Kim, Jiyoung Park, and Jeong Min Baik *School of Advanced Materials Science and Engineering, Sungkyunkwan University*
WP1-517	**Enhancement of Perovskite Solar Cells Efficiency Using Cu_2O/ Reduced Graphene Oxide Nanocomposite as Hole Transport Material** Thi Muoi Vo, Thi My Huyen Nguyen, and Chung Wung Bark *Gachon University*
WP1-518	**Building Better Rechargeable Aluminum Batteries with High-power Capabilities** Yeong Hoon Heo, Jong Chan Hyun, Dong Hyuk Kang, Yeonhua Choi, Eunji Lee, and Young Soo Yun *KU-KIST Graduate School of Converging Science and Technology, Korea University*
WP1-519	**High Coulombic Efficiency Lithium Metal Anode for High-Voltage Lithium Metal Batteries** Minhyuck Park, Son Ha, Jimin Park, Ji Soo Kim, Hyun Soo Kim, Sion Kim, and Young Soo Yun *KU-KIST Graduate School of Converging Science and Technology, Korea University*
WP1-520	**Enhanced Output Power of Thermoelectric Generator with Ferroelectric Materials** Ji-Young Park, Sun-Woo Kim, and Jeong Min Baik *School of Advanced Materials Science and Engineering, Sungkyunkwan University*
WP1-521	**Revamping the Graphene Oxide into rGO by Hydrothermal Protocol with an Aid of Povidone to Fabricate the Energy Storage Device** Selvaraj David and Yung Ho Kahng *Department of Physics Education, Chonnam National University*
WP1-522	**Boosting Electron Transfer Induced by N-doped Graphene Quantum Dots/FeOOH in LaSrCoO/$MoSe_2$ for Efficient Bifunctional Electrocatalyst** Sang Heon Kim and Jeong Min Baik *School of Advanced Materials Science and Engineering, Sungkyunkwan University*

WP1-523	**RF 스퍼터링으로 증착한 NiO 박막의 급속 열처리에 따른 다양한 특성의 변화** 김형민[1], 박상빈[1], 김상모[2], 홍정수[1], 김경환[1] *[1]가천대학교 전기공학과, [2]세종대학교 지능기전공학부*
WP1-524	**Cu-Single Atoms Decorated N-doped Carbon Dots for Boosting Electrocatalytic CO_2–to–ethanol Production** Rahul Purbia, Sung Yeol Choi, and Jeong Min Baik *School of Advanced Materials Science and Engineering, Sungkyunkwan University*
WP1-525	**Salt Template Based Synthesis of Bi Nanoparticles and Their Electrochemical CO2RR Activity for Formic Acid Production** Sung Yeol Choi, Rahul Purbia, and Jeong Min Baik *Sungkyunkwan University*
WP1-526	**Ultra-Stretchable, Biodegradable Triboelectric Nanogenerator for Green/Biomedical Energy Systems** Heeseok Kang, Won Bae Han, Seung Min Yang, Gwan-Jin Ko, and Suk-Won Hwang *KU-KIST Graduate School of Converging Science and Technology, Korea University*
WP1-527	**Fabrication of Ga_2O_3 Power Semiconductor Devices for Extreme Environments Using Aerosol Deposition Method** Hyeon Ho Cho[1,2], Han Eol Jang[3], and Hak Ki Yu[1,2] *[1]Department of Energy Systems Research, Ajou University, [2]Department of Materials Science and Engineering, Ajou University, [3]School of Advanced Materials Science and Engineering, Sungkyunkwan University*
WP1-528	**Position Selective Growth of WO_3 Nanosheets for Room Temperature Toxic Gas Sensors** D. D. Megersa[1,2] and H. K. Yu[1,2] *[1]Department of Energy Systems Research, Ajou University, [2]Department of Materials Science and Engineering, Ajou University*
WP1-529	**Enhanced Performance Perovskite Photodetectors via Polymer Blend** Dante Ahn[1,2], Woochul Kim[1], and Yusin Pak[2] *[1]Sensor System Research Center, KIST, [2]KU-KIST Graduate School of Converging Science and Technology, Korea University*
WP1-530	**Nanoporous Carbon Materials for the Anode of Aluminum Metal Battery** Juhee Yoon[1], Geonhee Han[1], Jihyeon Kim[2], and Hyoung-Joon Jin[1,2] *[1]Program in Environmental and Polymer Engineering, Inha University, [2]Department of Polymer Science and Engineering, Inha University*
WP1-531	**Characteristic Dual-domain Composite Structure of Reduced Graphene Oxide and Its Application to Higher Specific Capacitance** Jun Beom Kim, Sung Hwan Koo, In Ho Kim, and Sang Ouk Kim *KAIST*

WP1-532	**Micro and Nano Barium Hexaferrite Particle for EMI Shielding Film** Mingi Lee[1,2], Seungsik Kim[1,2], and Hak Ki Yu[1,2] *[1]Department of Materials Science and Engineering, Ajou University, [2]Department of Energy Systems Research, Ajou University*
WP1-533	**경사각을 갖는 Gate Oxide (Tapered Gate Oxide)를 통한 1.2 kV SiC Buffered Gate Oxide MOSFET (BFOX-MOSFET)의 전계완화연구** Hyowon Yoon, Chaeyun Kim, Yeongeun Park, Gwangjae Kim, Sangyeob Kim, Gyuhyeok Kang, JinHun Kim, Gukhwa Jeon, Seonghyo Park, and Ogyun Seok *Kumoh National Institute of Technology*
WP1-534	**MgO Nano-gear for Anti-bacteria Applications** Yeongji Yu[1] and Hak Ki Yu[1,2] *[1]Department of Materials Science and Engineering, Ajou University, [2]Department of Energy Systems Research, Ajou University*
WP1-535	**Rolled-up Nickel Catalyst Promoted by MoO_3 for Sodium Borohydride ($NaBH_4$) Dehydrogenation** Hojun Shin[1,2], Sang Yeop Park[1], and Hak Ki Yu[1,2] *[1]Department of Energy Systems Research, Ajou University, [2]Department of Materials Science and Engineering, Ajou University*
WP1-536	**Sputtering to Reactive Gas Ratios-controlled Magnetron Sputtering Growth of MoO_3 Nanorods** G.T. Gudena[1,2] and H. K. Yu[1,2] *[1]Department of Energy Systems Research, Ajou University, [2]Department of Materials Science and Engineering, Ajou University*
WP1-537	**Ultra-high Porosity MgO Micro-particles for Various Application** Youngho Kim[1,2,3] and Hak Ki Yu[1,2] *[1]Department of Materials Science and Engineering, Ajou University, [2]Department of Energy Systems Research, Ajou University, [3]Department of Materials Science and Engineering, Korea University*
WP1-538	**실내 광원에서 상시 구동 가능한 대면적 유기 태양광 발전 연구** 한세림[1,2], 최효정[1], Swarup Biswas[1], 김혁[1] *[1]서울시립대학교 전자전기컴퓨터공학부, [2]한국생산기술연구원 융합기술연구소*
WP1-539	**Cu-Based Electrocatalysts for CO_2 Reduction Reaction** Seokwoo Choe and Youn Jeong Jang *Department of Chemical Engineering, Hanyang University*
WP1-540	**Layered Double Hydroxides Derived Nano-sized Nickel Catalyst for CO_x Free Hydrogen Production by Ammonia Decomposition** Sung Min Kim and Youn Jeong Jang *Department of Chemical Engineering, Hanyang University*

WP1-541	**Electrophoretically Deposited $Ti_3C_2T_x$ MXene Sheets as Efficient Catalysts for Electrochemical Nitrate Reduction Reaction to Ammonia** Yong Hyun Moon[1], Tae Hee Han[2], and Youn Jeong Jang[1] *[1]Department of Chemical Engineering, Hanyang University, [2]Department of Organic and Nano Engineering, Hanyang University*
WP1-542	**Interface Modification of NiO_x Hole Transport Layer with Organic Interlayer for High-Efficiency Perovskite Solar Cells** Jihye Young[1,2], Seok Woo Lee[3], Han Sol Park[1,2], Jihyeon Heo[1,2], Jae Won Chang[3], and Hui Joon Park[1,2] *[1]Department of Organic and Nano Engineering, Hanyang University, [2]Human-Tech Convergence Program, Hanyang University, [3]Department of Industrial Chemistry, Pukyong National University*
WP1-543	**Embellishment of $MnFeO_3$ Nanoparticles on WS_2 Nanoflakes for Solid-state Asymmetric Supercapacitor to Enhance Storage Properties** Zulfqar Ali Sheikh[1,2], Honggyun kim[1], Pranav K. Katkar[3], Muhammad Farooq Khan, and Deok-Kee Kim[1,2] *[1]Department of Electrical Engineering, Sejong University, [2]Electrical Engineering and Convergence Engineering for Intelligent Drone, Sejong University, [3]Department of Physics, Sejong University*
WP1-544	**1,200V Split Gate IGBT 전기적 특성 분석** Hyeong Seong Jo, Yu Rim Kim, Min Sang Kim, and Ey Goo kang *Department of Energy IT Engineering, Far East University*
WP1-545	**Facile Synthesis of WO_3/WS_2 Core@Shell Nanorods Using $WO_3 \cdot 0.33H_2O$ and Their Efficient Photoelectrochemical Reactivity** Dong-Bum Seo[1], Seungyoung Park[1], Jin Kim[1], Minsu Kim[1], Wooseok Song[1], Sun Sook Lee[1], Eui-Tae Kim[2], and Ki-Seok An[1] *[1]Thin Film Materials Research Center, KRICT, [2]Department of Materials Science and Engineering, Chungnam National University*
WP1-546	**TCAD Prediction of SJ MOSFET Size Dependent Failure in Reverse Recovery Condition** Jieun Lee[1], Jong Min Kim[1], Myeong Bum Pyun[2], Kwang Young Ko[2], Youngchul Kim[1], and Hyunchul Nah[1] *[1]Device Enabling Team, DB HiTek, [2]Device Development Team, DB HiTek*
WP1-547	**1700V Double Trench MOSFET 전기적 특성 최적화 연구** Yu Rim Kim, Ji Yeon Ryou, Jang Hyeon Lee, and Ey Goo Kang *Department of Energy IT Engineering, Far East University*
WP1-548	**Investigation of Triboelectricity-Based Back-gated Transistor towards Self-powered Systems** Jihyeon Park[1] and Daewon Kim[2] *[1]Department of Electronics and Information Convergence Engineering, Kyung Hee University, [2]Department of Electronic Engineering, Kyung Hee University*

WP1-549	**Self-heating 특성을 고려한 GaN HEMT 고주파 회로 모델링** 권경배, 최지웅, 정수윤, 전종욱 *건국대학교 전기전자공학부*
WP1-550	**P-type Ohmic Contact Formation on Bulk WSe_2 Using Semimetal $NiSe_2$ by Inhibiting Metal Induced Gap State** Ji Kwon Bae[1,2], Soheil Ghods[1], and Hak Ki Yu[1,2] *[1]Department of Energy Systems Research, Ajou University, [2]Department of Materials Science and Engineering, Ajou University*
WP1-551	**High-Output Power Thermoelectric Generator based on Cr-MgF_2/PMMA-carbon Light Absorber** Geonho Kwak[1], Yoo-Seok Jeong[2], Jeong Min Baik[2], and Hak Ki Yu[1] *[1]Department of Energy Systems Research, Ajou University, [2]School of Advanced Materials Science and Engineering, Sungkyunkwan University*
WP1-552	**Electrochromic $Li_4Ti_5O_{12}$ Thin Film as Anode for All-solid-state Lithium Ion Battery by Sputtering Method** Kwan-Young Oh[1,2], Haena Yim[1], and Ji-Won Choi[1,2] *[1]Electronic Materials Research Center, KIST, [2]Nanomaterials Science and Engineering, KIST School, University of Science and Technology (UST)*
WP1-553	**Developing a Face-shear Lead-free Piezoelectric Transducer through Anti-parallel Co-poling and Its Application to an Omnidirectional Piezoelectric Transducer Sensor** Jae-Min Eum[1], Sahn Nahm[2], and Ji-Won Choi[1,3] *[1]Center for Electronic Materials, KIST, [2]Department of Materials Science and Engineering, Korea University, [3]Nanomaterials Science and Engineering, University of Science and Technology (UST)*
WP1-554	**Laser-directed Synthesis of Strain-induced MoS_2 Structure for Improved Triboelectric Touch Sensors** Jiseul Park[1], Chang Kyu Jeong[2], and Ji-Won Choi[1,3] *[1]Electronic Materials Research Center, KIST, [2]Division of Advanced Materials Engineering, Jeonbuk National University, [3]Nanomaterials Science and Engineering, University of Science and Technology (UST)*
WP1-555	**Transparent Thin Film Battery with Ag-doped $SiO_{0.7}N$ Anode** Yaelim Hwang[1,2], Ho-Won Jang[2], and Ji-Won Choi[1,3] *[1]Electronic Materials Research Center, KIST, [2]Department of Material Science and Engineering, Research Institute of Advanced Materials, Seoul National University, [3]Nanomaterials Science and Engineering, University of Science and Technology (UST)*
WP1-556	**Perovskite Microcells Fabricated Using Swelling-induced Crack Propagation for Colored Solar Windows** Jinhong Park[1,2] and Dae-Hyeoung Kim[1,2,3] *[1]Center for Nanoparticle Research, IBS, [2]School of Chemical and Biological Engineering, Institute of Chemical Processes, Seoul National University, [3]Department of Materials Science and Engineering, Seoul National University*
WP1-700	**1200V 급 4H-SiC Trench MOSFET의 최적화의 관한 연구** Ji Yeon Ryou, Dong Hyeon Lee, Dong Hyeon Kim, and Ey Goo Kang *Department of Energy IT Engineering, Far East University*

WP1-702	**Two-dimensional Characteristics Analysis of Perovskite Solar Cells by Photoluminescence Imaging Measurement based on Particle Swarm Optimization Algorithm** Jae Sun Lee[1,2], Yong-Jin Kim[1], Sang Hee Lee[1], Soohyun Bae[1], Hee-eun Song[1], Min-Gu Kang[1], Yimhyun Jo[1], Min Jin Kim[1], Yun Ae Cho[1], Do Hyung Kim[1], Han Ul Min[1], Kyung Taek Jeong[1], Minseo Kim[1], Sungeun Park[1], Jae-Min Myoung[2] *[1]KIER, [2]Yonsei University*

Q. Metrology, Inspection, Analysis, and Yield Enhancement

심사위원: 강상우 소장(한국표준과학연구원), 정용우 TL(SK 하이닉스)

WP1-557	**3개의 Pitch를 이용한 Moire 효과 기반의 오버레이 Mark 설계** Hyun Chul Lee[1,3], Hyun Jin Chang[1], Ho Sung Woo[2], and Won Gyu Lee[3] *[1]AUROS Technology, Inc., [2]Korea National Open University, [3]Korea University*
WP1-558	**Electrical Property Measurement of 2D MoS_2/WS_2-Based Field-Effect Transistors for Physically Unclonable Function** Jaeseo Park[1,2], Jung Woo Leem[3], Minji Park[1], Zahyun Ku[4], Jun Oh Kim[1], Young L. Kim[3], and Sang Woo Kang[1,2] *[1]Advanced Instrumentation Institute, KRISS, [2]Precision Measurement, University of Science and Technology (UST), [3]Weldon School of Biomedical Engineering, Purdue University, [4]Materials and Manufacturing Directorate, Air Force Research Laboratory (AFRL)*
WP1-559	**Extraction Methods of Acceptor-Like State Distributions in Solution-Processed InZnO Semiconductor depending on In Molarity Ratio** Dongwook Kim, Hyunju Lee, Bokyoung Kim, and Jaehoon Park *Hallym University*
WP1-560	**EMC측정을 통한 고다층 보드 신뢰성 확보에 관한 특성 연구** 박진성[1], 유일근[2], 박진열[2], 박남선[3], 김기현[1], 김경민[1], 김성용[1] *[1]한국공학대학교, [2](주)에이티씨, [3](주)제4기한국*
WP1-561	**Model-less TSOM 기법 적용 Defect 분류 및 높이, 침투 깊이 측정 연구** 주지용, 박지원, 김도희, 이준호 *공주대학교 기하광학연구실*
WP1-562	**Highly Reliable Dynamic Spectroscopic Imaging Ellipsometer** Gukhyeon Hwang[1], Vamara Dembele[1], Sukhyun Choi[1], Saeid Kheiryzadehkhanghah[1], Inho Choi[1], Junbo Shim[1], Sungtae Kim[2], Sangjun Kim[2], and Daesuk Kim[1] *[1]Department of Mechanical System Engineering, Jeonbuk National University, [2]AUROS Technology, Inc.*
WP1-563	**Hierarchical C-MoS_2 Nanobranches Based Ppt-level Gas Detection Sensor** Jeongin Song[1,2], Jinwook Baek[1], Jinill Cho[3], Taesung Kim[3], Ha Sul Kim[2], Jihun Mun[1], and Sang-Woo Kang[1,4] *[1]Advanced Instrumentation Institute, KRISS, [2]Department of Physics, Chonnam National University, [3]School of Mechanical Engineering, Sungkyunkwan University, [4]Measurement Engineering, University of Science and Technology (UST)*
WP1-564	**Accuracy Analysis of Dynamic Spectroscopic Ellipsometry for System Design Optimization** Saeid Kheiryzadehkhanghah, Inho Choi, Gukhyeon Hwang, Sukhyun Choi, Junbo Shim, and Daesuk Kim *Department of Mechanical System Engineering, Jeonbuk National University*

WP1-566	**모델링을 통한 플렌옵틱 1.0과 2.0의 공간분해능 비교분석** 연하늘, 한석기, 주지용, 장관우, 이준호 *공주대학교 기하광학연구실*
WP1-567	**TSOM 적용 반도체 내부 이물 깊이 추정 시뮬레이션** 박지원, 주지용, 김도희, 장관우, 이준호 *공주대학교 기하광학연구실*
WP1-568	**고진공 펌프 핵심 성능 평가 플랫폼 개발** 민병현[1,2], 박재서[1,3], 문지훈[1], 신재수[2], 강상우[1,3] *[1]한국표준과학연구원 첨단측정장비연구소, [2]대전대학교 신소재공학과, [3]과학기술연합대학원대학교 측정과학전공*
WP1-569	**반도체 웨이퍼 결함 검사 장비용 대물렌즈 설계 연구** 김도희, 주석영, 주지용, 박지원, 이준호 *공주대학교 기하광학연구실*
WP1-570	**Thick Film Thickness Inline Monitoring Using Low Magnification Spectroscopic Reflectometry** Jin-Ho Kim *DRAM M14 Metrology and Inspection Team, SK Hynix*
WP1-571	**심층 학습을 이용한 In Cell 열화 Pattern 분류 방법** Sang-Chul Kim, Sang-Hyun Kim, and Eun-Jung Ko *R&D, SK Hynix*
WP1-572	**Pattern 상부 Remain Hard Mask의 비 파괴 방식 계측에 대한 연구** 최은혁, 임찬영, 문지영, 구나경, 서종현 *SK Hynix 미래기술연구원, R&D MI 팀*
WP1-573	**XRD, XPS를 이용한 Multi-layer AB_x의 개별 Atomic Concentration 계측 방법론** 최규진, 정근재, 최다연, 서종현 *SK Hynix 미래기술연구원, R&D MI 팀*
WP1-574	**Small Angle X-ray Scattering 기술을 이용한 Hole Profile 계측** 김상민, 임찬영, 이정덕, 서종현 *SK Hynix*

WP1-575	**Electrochemical Reaction-driven Transfer Printing of Electronics** Jung-Hyun Lee[1], Junoh Kim[2], Sang-Woo Kang[2], and Bongjoong Kim[1] *[1]Hongik University, [2]KRISS*
WP1-576	**Spatially Resolved End-Point Detection in Plasma Etching with Multi-Fiber Optical Emission Spectroscopy** Sang Hee Han[1], Sang Hun Lee[1], and Heeyeop Chae[1,2] *[1]Sungkyunkwan University, [2]SKKU Advanced Institute of Nanotechnology, Sungkyunkwan University*
WP1-577	**Semi-Supervised Layerwise Anomaly Detection in Manufacturing Multivariate Time Series** Yeonmo Kim, Jihwan Min, and Sangyeop Kim *RTM Co.*
WP1-578	**마이크로파 반사계를 이용한 플라즈마 밀도 측정** 김재현, 신기원, 김우재, 권희태, 김지환, 방인영, 이선희, 권기청 *광운대학교 자연과학대학 전자바이오물리학과*
WP1-579	**Real Time Particle Measurement and Cleaning Technologies for Ceramic Coating Parts Inside Plasma Chamber** Jongho So[1,2], Minjoong Kim[1,2], Hyuksung Kwon[1,3], SangWon Nam[1,4], SeonJeong Maeng[1], Chin-Wook Chung[2], and Ju-Young Yun[1,5] *[1]Vacuum Materials Measurement Team, KRISS, [2]Department of Electrical Engineering, Hanyang University, [3]Department of Advanced Materials Engineering, Daejeon University, [4]Department of Materials Engineering, Chungnam National University, [5]Nanoscience and Technology, University of Science and Technology (UST)*
WP1-580	**지속 가능한 미래를 위한 반도체에 필수인 수율 300%, 40년 전에 달성한 삼성반도체통신의 SoC KS5199의 수율증대의 비법** Benjamin P. Wilkerson[1,2,3] and K. D. Kang[4] *[1]Department of Electrical and Computer Engineering, Inha University, [2]PW Semiconductor Labs, Inc., [3]PW 반도체, [4]KDK Electronics*
WP1-581	**Improved Spatial Resolution of Dynamic Spectroscopic Imaging Ellipsometer** Suk Hyun Choi[1,2], Guk Hyeon Hwang[1], Saeid Kheiryzadehkhanghah[1], In Ho Choi[1], Jun Bo Shim[1], Yong Jai Cho[2], Won Chegal[2], and Dae Suk Kim[1] *[1]Jeonbuk National University, [2]KRISS*
WP1-582	**골리앗 같은 Bell Labs를 이긴 다윗 같은 ICS의 비밀 1000% 수율증대의 비법으로 만든 초저전력 Fast Ethernet PHYs** Benjamin P. Wilkerson[1,2,3] and K. D. Kang[4] *[1]Department of Electrical and Computer Engineering, Inha University, [2]PW Semiconductor Labs, Inc., [3]PW 반도체, [4]KDK Electronics*

WP1-583	**상대수율 1000% 올릴 수 있는 기술로 디지털통신의 한계를 극복한 비동기식 복조기 이론** Benjamin P. Wilkerson[1,2,3] and Kyungtak Chae[3] *[1]Department of Electrical and Computer Engineering, Inha University, [2]PW Semiconductor Labs, Inc., [3]PW 반도체*
WP1-584	**Graph Deep Neural Network-Based Fault Detection and Classification in Semiconductor Manufacturing** Hyun Jin Choi[1], Jong Sub Lee[1], Seung Jae Ha[1], and Byeong Tak Jeon[2] *[1]AIBIZ Co., Ltd., [2]DB HiTek*

T. AI

심사위원: 이상설 박사(KETI)

WP1-585	**Efficient Circuit Simulation of Artificial Neural Network (ANN) Device Compact Models in SPICE** Hyunseok Hwang, Myoungnyoun Kim, Wanki Lee, Yoonyoung Choi, Jinwook Shin, and Intae Jeong *Alsemy Inc.*
WP1-586	**Adaptive FSP: Adaptive Architecture Search with Filter Shape Pruning** Seungju Lee, Aeri Kim, Eunji Kwon, and Seokhyeong Kang *POSTECH*
WP1-587	**DS-ViT: Vision Transformer Using Diagonal Symmetric Filter** Seojeong Kim and Seokhyeong Kang *POSTECH*
WP1-588	**RRAM Based Compute-in-Memory Using Voltage Division with Iterative Write-Verifying Method** Seo-Yoon Lee and Kee-Won Kwon *Department of Semiconductor and Display Engineering, Sungkyunkwan University*
WP1-589	**Effects of Current Fluctuation of Synapse Devices on On-Chip Learning in Hardware Neural Networks** Seung Whan Kim[1,2], Ryunhan Koo[1,2], Jae-Joon Kim[1,2], and Jong-Ho Lee[1,2] *[1]Department of Electrical and Computer Engineering, Seoul National University, [2]Inter-university Semiconductor Research Center, Seoul National University*
WP1-590	**Weight Mapping Scheme Using Gate Voltage of NOR Flash Memory Array** In-Seok Lee[1,2], Jae-Joon Kim[1,2], and Jong-Ho Lee[1,2] *[1]Department of Electrical and Computer Engineering, Seoul National University, [2]Inter-university Semiconductor Research Center, Seoul National University*
WP1-591	**Optimal Decoupling Capacitor Design Method for PCB based on Target Impedance Control Algorithm** Kyomin Chae, Jaeyoung Shin, Kwangho Kim, Wonseok Hong, Wooshin Choi, Myoungbo Kwak, Youngdon Choi, Hyungjong Ko, and Jung-Hwan Choi *Advanced Design Team, Memory Business, Samsung Electronics Co., Ltd.*
WP1-592	**Efficient Lightweight Image Classifier for Mobile Devices** Akshay Kumar Sharma and Kyung Ki Kim *Department of Electronics Engineering, Daegu University*

U. Bio-Medical

심사위원: 박성윤 교수(부산대학교), 배준성 교수(강원대학교)

WP1-593	**Magnetically Controllable/Wirelessly Electrical Operating Soft Robotics** Sungkeun Han, Jeong-Woong Shin, Joong Hoon Lee, and Suk-Won Hwang *KU-KIST Graduate School of Converging Science and Technology, Korea University*
WP1-594	**Blood Leak Detection Sensor Integrated into a Stent for Monitoring Endoleak after Endovascular Aneurysm Repair (EVAR)** Sun-Young Park and Yei-Hwan Jung *Department of Electronic Engineering, Hanyang University*
WP1-595	**Ultra-fast and Highly Sensitive Detection of Iodide Ion in Artificial Urine Using Electrolyte-gated Thin-film Transistors** ChulJin Hwang[1], Taehyun Kwak[2], Chang-Hyun Kim[3], Joo Hee Kim[1], and Sungjun Park[2] *[1]College of Pharmacy, Ajou University, [2]Department of Electrical and Computer Engineering, Ajou University, [3]Department of Electronic Engineering, Gachon University*
WP1-596	**MoS_2 Nanoporous Biosensor for Ultrasensitive and Selective Detection of Cortisol** Junoh Shim, Heekyeong Park, Seungho Baek, Anamika Sen, and Sunkook Kim *Department of Advanced Materials Science and Engineering, Sungkyunkwan University*
WP1-597	**Interrelationship Analysis of Electrodes and Electrode Spacing of Impedance Biosensors Using NIH/3T3 Cells** Ye Eun Kim[1], Da Hyun Kang[1], Seok Gyu Kim[1], Ji Soo Choi[1], Jeong Mok Yang[1], So Yeon Jung[1], Jae Min Kim[1], and Moon Gyu Jang[1,2] *[1]School of Nano Convergence Technology, Hallym University, [2]Center of Nano Convergence Technology, Hallym University*
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WP1-690	**$SrRuO_3$ 및 MoO_3 희생층을 사용한 Si 멤브레인 제작** 허준성[1], 모성인[2], 이준영[3], 백승협[3], 오준호[2], 유상우[1] *[1]Department of Advanced Materials Engineering, Kyonggi University, [2]Ulsan Advanced Energy Technology R&D Center, KIER, [3]KIST*

WP1-691	**Atomic-Layer-Deposited SnO_2/In_2O_3 Electron Transport Layer for All-Perovskite Tandem Solar Cell** Pil Ju Youn[1], Mun Young Woo[2], Jeong Min Im[2], Jun Hong Noh[2], and Jeong Hwan Han[1] *[1]Department of Materials Science and Engineering, Seoul National University of Science and Technology, [2]School of Civil, Environmental and Architectural Engineering, Korea University*
WP1-692	**Fabrication of Atomic-Layer-Deposited MoO_2 Films for the Electrode of the DRAM Capacitor** Jae Hyeon Lee, Wangu Kang, and Jeong Hwan Han *Department of Materials Science and Engineering, Seoul National University of Science and Technology*
WP1-693	**Investigation of Ferroelectricity in (Hf, Zr)O_2 Thin Films Fabricated by Multi-steps Radio Frequency Sputtering** Sang Won An, Yoon Ki Kim, Seong Bin Bae, Jae Heon Lee, Sang Woo Lee, Tae Hyun Jung, Chang Yun Heo, Yu Bin Park, and Sang Mo Yang *Department of Physics, Sogang University*
WP1-694	**Performance Enhancement of Bilayer ZnO/HfO_2 RRAM with a Graphene Interlayer** So-Yeon Kwon, Woon-San Ko, Ki-Nam Kim, Jun-Ho Byun, Do-Yeon Lee, Eun-Gi Kim, Eun-A Koo, and Ga-Won Lee *Chungnam National University*
WP1-695	**Contact Resistance Effect on Temperature Coefficient of Resistance in Infrared Microbolometer** Eun-A Koo, Ki-Nam Kim, Woon-San Ko, Jun-Ho Byun, Eun-Gi Kim, So-Yeon Kwon, Do-Yeon Lee, and Ga-Won Lee *Chungnam National University*
WP1-696	**Investigation of Thickness-dependent Ferroelectric Properties in Hafnium Zirconium Oxide Thin Film Capacitors** Jae Heon Lee, Sang Won An, Tae Hyun Jung, Yu Bin Park, Yoon Ki Kim, Seong Bin Bae, Sang Woo Lee, Chang Yun Heo, and Sang Mo Yang *Department of Physics, Sogang University*
WP1-697	**Hardware-Based Spiking Neural Network with Optical Synaptic Thin Film Transistors** Go Eun Choi and You Seung Rim *Department of Intelligent Mechatronics Engineering, and Convergence Engineering for Intelligent Drone, Sejong University*
WP1-698	**WebRTC를 활용한 OTT 콘텐츠 식별과 캡처 기법** 이찬우, 김성진, 손유현, 허준영 *한성대학교 컴퓨터공학부*
WP1-699	**Effects of Pretreatment on SiO_2 Bonding for Hybrid Bonding Applications** Woo Kyung Lee[1], Siye Lee[1], In-joo Kim[2], Hyeok-Jin Chu[2], and Sungdong Kim[1] *[1]Department of Mechanical System Design Engineering, Seoul National University of Science and Technology, [2]Department of Mechanical Design and Robot Engineering, Seoul National University of Science and Technology*

WP1-701	**고속 XOR-XNOR 회로를 이용한 4-2 압축회로 설계** Min Gyu Kang, Chang Ki Hong, and Jeong Beom Kim *Kangwon National University*
WP1-565	**P-$MoS_{2(1-x)}Te_x$/n-$In_{0.53}Ga_{0.47}As$ Heterostructure for Low Schottky Barrier High Performance Photodetector** 양희권[1], 김태완[2], 오시덕[3], 오근형[2], 조현승[2], 신재철[1] *[1]동국대학교 전자전기공학부, [2]전북대학교 전기공학부, [3]한국생산기술연구원*