

## L. Analog Design 분과

## [TA1-L] Analog Circuits

좌장: 엄지용 교수(금오공과대학교), 정영호 교수(대구대학교)

초청발표 TA1-L-1 09:00-09:30	<b>2전극 측정을 위한 저 잡음 넓은 동적영역의 바이오 임피던스 판독회로</b> 손현우 경상국립대학교
TA1-L-2 09:30-09:45	<b>A Fully Differential LiDAR Receiver with On-chip APDs in 180-nm CMOS</b> Yejin Choi <sup>1,2</sup> , Yunji Song <sup>1,2</sup> , Juntong Li <sup>1,2</sup> , Yeojin Chon <sup>1,2</sup> , Shinhae Choi <sup>1,2</sup> , Xinyue Zhang <sup>1,2</sup> , and Sung Min Park <sup>1,2</sup> <sup>1</sup> Department of Electronic and Electrical Engineering, Ewha Womans University, <sup>2</sup> Graudate Program in Smart Factory, Ewha Womans University
TA1-L-3 09:45-10:00	<b>An 8x8 Optoelectronic Receiver Array in 180-nm CMOS for Elder-Care Short Range LiDAR Sensors</b> Shinhae Choi <sup>1,2</sup> , Yeojin Chon <sup>1,2</sup> , Yunji Song <sup>1,2</sup> , Yejin Choi <sup>1,2</sup> , and Sung Min Park <sup>1,2</sup> <sup>1</sup> Department of Electronic and Electrical Engineering, Ewha Womans University, <sup>2</sup> Graudate Program in Smart Factory, Ewha Womans University
TA1-L-4 10:00-10:15	<b>A Fully-Differential Optoelectronic Receiver in 180-nm CMOS</b> Yunji Song <sup>1,2</sup> , Yejin Choi <sup>1,2</sup> , Juntong Li <sup>1,2</sup> , Shinhae Choi <sup>1,2</sup> , Yeojin Chon <sup>1,2</sup> , Xinyue Zhang <sup>1,2</sup> , and Sung Min Park <sup>1,2</sup> <sup>1</sup> Department of Electronic and Electrical Engineering, Ewha Womans University, <sup>2</sup> Graudate Program in Smart Factory, Ewha Womans University
TA1-L-5 10:15-10:30	<b>Single-stage Wireless CC-CV Resonant Battery Charger with Coupling Range Extension Scheme for Implantable Biomedical Applications</b> Byeong Woo Yoo, Joon Gyu Kim, Min Jae Kim, Min Sung Kim, and Sung Yun Park Pusan National University
TA1-L-6 10:30-10:45	<b>A 2nd Order Delta-sigma Modulator for BMS DC Measurement</b> Ji-Ho Park, Jae-Geun Lim, Hyoung-Jung Kim, Jae-Hyuk Lee, Seong-Bo Park, Byeong-Ho Yu, and Gil Cho Ahn Department of Electronic Engineering, Sogang University

## H. Display and Imaging Technologies 분과

### [TB1-H] Display and Imaging Technologies I

좌장: 정윤영 교수(POSTECH), 진성훈 교수(인천대학교)

초청발표 TB1-H-1 09:00-09:30	<b>Hybrid-Multiscale Materials Enabled Light-to-Frequency-Conversion Circuits Toward IoT Security Application</b> Sung Hun Jin, Seung Gi Seo, Mokurala Krishnaiah, and Dhananjay Mishra I-Nanofab Center, Department of Electronic Engineering, Incheon National University
TB1-H-2 09:30-09:45	<b>Effects of ZnMgO Surface UV Treatment on the Performance of InP-Based Inverted Quantum Dot Light-Emitting Diodes</b> Hyeong Jin Kim <sup>1,2</sup> and Jeonghun Kwak <sup>1,2</sup> <sup>1</sup> Department of Electrical and Computer Engineering, Seoul National University, <sup>2</sup> ISRC, Seoul National University
TB1-H-3 09:45-10:00	<b>Strategy for High Quantum-efficient AlGaInP/GaInP Micro-red LEDs and The Demonstration of 1700 PPI Ultra-high-resolution Mono-color Display through Monolithic 3D Integration Technology</b> Juhyuk Park <sup>1</sup> , Dae-Myeong Geum <sup>2</sup> , Dong-Soon Jung <sup>3</sup> , Woojin Baek <sup>1</sup> , Hyunsu Kim <sup>1</sup> , and Sanghyeon Kim <sup>1</sup> <sup>1</sup> Electrical Engineering, KAIST, <sup>2</sup> School of Electronics Engineering, Chungbuk National University, <sup>3</sup> RAONTECH Inc.
TB1-H-4 10:00-10:15	<b>Solution-Processed NIR Sensing Ambipolar Organic Phototransistor</b> HwaPyeong Noh, Yongju Lee, MiRiNae Lee, Hyo Won Jang, Swarup Biswas, and Hyeok Kim School of Electrical and Computer Engineering, University of Seoul
TB1-H-5 10:15-10:30	<b>Vertically Stacked RGB Micro-LEDs Via Transfer Printed Semiconductor Sheets</b> Seong Woo Hong and Yei Hwan Jung Department of Electronic Engineering, Hanyang University
TB1-H-6 10:30-10:45	<b>Quantum Efficiency Enhancement by Using Guided-Mode Resonance Structure on eSWIR T2SL nBn Photodetector</b> Dongho Gwak, Seung-Yeop Ahn, Jinha Lim, and Sang Hyeon Kim School of Electrical Engineering, KAIST

## J. Nano-Science & Technology 분과

### [TC1-J] van der Waals Heterostructure Electronics

좌장: 이관형 교수(서울대학교), 이명재 교수(서울대학교)

초청발표 TC1-J-1 09:00-09:30	<b>2D Materials Design for Angstrom-scale Multi-stack Devices</b> Hyeon-Jin Shin SAIT
TC1-J-2 09:30-09:45	<b>NMOS Inverter based on Vertically Stacked MoS<sub>2</sub> n-MOSFET Using Semi-metallic PtSe<sub>2</sub> Contacts</b> Jae Eun Seo <sup>1</sup> , Minseung Gyeon <sup>2</sup> , Jisoo Seok <sup>1</sup> , Kibum Kang <sup>2</sup> , and Jiwon Chang <sup>1</sup> <sup>1</sup> Department of System Semiconductor Engineering and Department of Materials Science and Engineering, Yonsei University, <sup>2</sup> Department of Materials Science and Engineering, KAIST
TC1-J-3 09:45-10:00	<b>Atomic-Thin Dielectric Integration with Hexagonal Boron Nitride for Large Scale MoS<sub>2</sub> Field Effect Transistors</b> Woo-Ju Lee <sup>1,2</sup> , Min-Yeong Choi <sup>1,2</sup> , Seong-Jun Yang <sup>1</sup> , and Cheol-Joo Kim <sup>1,2</sup> <sup>1</sup> Center for Van der Waals Quantum Solids, IBS, <sup>2</sup> Department of Chemical Engineering, POSTECH
초청발표 TC1-J-4 10:00-10:30	<b>Reliable Transistors Fabricated via Two-dimensional Layer Transfer Assisted Heterogeneous Integration Techniques</b> Hyun S. Kum Yonsei University
TC1-J-5 10:30-10:45	<b>Two-dimensional Layer Induced Resistive Switching Properties of Hafnia-Based Heterostructure</b> Donghyeon Lee <sup>1</sup> , Seungmo Kim <sup>2,3</sup> , and Sanghan Lee <sup>1</sup> <sup>1</sup> School of Materials Science and Engineering, GIST, <sup>2</sup> Center for Semiconductor Technology Convergence, POSTECH, <sup>3</sup> Department of Electrical Engineering, POSTECH

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

## [TD1-P] 태양광 / 파워 디바이스

좌장: 유상우 교수(경기대학교), 박정웅 교수(가천대학교)

TD1-P-1 09:00-09:15	<b>Chip Size Dependent Turn-off Behavior of SiC MOSFETs</b> Yeonjun Kim and Hyemin Kang Department of Energy Engineering, KENTECH
TD1-P-2 09:15-09:30	<b>Microstructure Design of n-type Bi<sub>2</sub>Te<sub>3</sub> Alloys via Selective Dissolution of KCl: Influence of Bi<sub>2</sub>TeO<sub>5</sub> Formation over an Eutectic Point</b> Gwang Min Park <sup>1,2</sup> , Seunghyeok Lee <sup>2,3</sup> , Jun-Yun Kang <sup>4</sup> , Seung-Hyub Baek <sup>2</sup> , Heesuk Kim <sup>1</sup> , Jin-Sang Kim <sup>1</sup> , and Seong Keun Kim <sup>1,2</sup> <sup>1</sup> KU-KIST, Korea University, <sup>2</sup> KIST, <sup>3</sup> Hanyang University, <sup>4</sup> KIMS
TD1-P-3 09:30-09:45	<b>MoS<sub>2(1-x)</sub>Te<sub>2x</sub> / MoS<sub>2</sub> Van Der Waals Heterojunctions for Ultra-Thin Photovoltaic Application</b> Dong Hyun Seo <sup>1,2</sup> , Guen Hyung Oh <sup>1,2</sup> , Jong Min Song <sup>1,2</sup> , and TaeWan Kim <sup>1,2</sup> <sup>1</sup> Department of Electrical Engineering, Jeonbuk National University, <sup>2</sup> Smart Grid Research Center, Jeonbuk National University
초청발표 TD1-P-4 09:45-10:15	<b>Efficient, Stable and Scalable Perovskite Solar Cells</b> Jangwon Seo Department of Chemical & Biomolecular Engineering, KAIST
TD1-P-5 10:15-10:30	<b>산화갈륨 기반 수직형 고전압 쇼트키 다이오드 구조 설계를 위한 해석적 모델 제안</b> Min-Jeoung Kim, Sung-Hoon Lee, Won-Chul Chol, Seung-Jun Oh, Ji-Ho Kim, and Ho-Young Cha School of Electronic and Electrical Engineering, Hongik University
TD1-P-6 10:30-10:45	<b>ALD BeO Grown on (-201) and (001) β-Ga<sub>2</sub>O<sub>3</sub> Substrates for Power Devices</b> Dohwan Jung <sup>1</sup> , Yoonseo Jang <sup>1</sup> , Sangoh Han <sup>1</sup> , Christopher W. Bielawski <sup>2</sup> , and Jungwoo Oh <sup>1</sup> <sup>1</sup> School of Integrated Technology, Yonsei University, <sup>2</sup> CMCM, IBS, Department of Chemistry, UNIST

## E. Compound Semiconductors 분과

## [TE1-E] Compound Semiconductor – InP Electronic Devices

좌장: 이기원 교수(원광대학교)

<p>초청발표 TE1-E-1 09:00-09:30</p>	<p><b>InP HEMT Based MMICs for Future Quantum Computing Applications</b> Sang-jin Yoon<sup>1</sup>, Sang-kuk Kim<sup>1</sup>, Ted Kim<sup>1</sup>, and Dae-hyun Kim<sup>2</sup> <sup>1</sup>QSI, <sup>2</sup>School of Electronic and Electrical Engineering, Kyungpook National University</p>
<p>TE1-E-2 09:30-09:45</p>	<p><b><math>L_g = 60</math> nm 5-levels-stacked <math>\text{In}_{0.53}\text{Ga}_{0.47}\text{As}</math> MBCFETs with <math>Q = 258</math></b> J.-H. Yoo<sup>1</sup>, H.-B. Jo<sup>1,2</sup>, I.-G. Lee<sup>1</sup>, S.-M. Choi<sup>1</sup>, H.-J. Kim<sup>1</sup>, W.-S. Park<sup>1</sup>, H. Jang<sup>3</sup>, C.-S. Shin<sup>3</sup>, K.-S. Seo<sup>3</sup>, S. H. Shin<sup>4</sup>, H.-M. Kwon<sup>4</sup>, SK. Kim<sup>5</sup>, JG. Kim<sup>5</sup>, J. Yun<sup>5</sup>, T. Kim<sup>5</sup>, J.-H. Lee<sup>1</sup>, and D.-H. Kim<sup>1</sup> <sup>1</sup>Kyungpook National University, <sup>2</sup>KETI, <sup>3</sup>KANC, <sup>4</sup>Polytech, <sup>5</sup>QSI</p>
<p>TE1-E-3 09:45-10:00</p>	<p><b>Cryogenic InGaAs HEMTs with Nb Superconductor for RF Transistors and Routing Circuits in Quantum Computing</b> Jaeyong Jeong<sup>1</sup>, Seong Kwang Kim<sup>1</sup>, Yoon-Je Suh<sup>1</sup>, Nahyun Rheem<sup>1</sup>, Jisung Lee<sup>2</sup>, Joonyoung Choi<sup>3</sup>, Juhyuk Park<sup>1</sup>, Joon Pyo Kim<sup>1</sup>, Bong Ho Kim<sup>1</sup>, Younjung Jo<sup>3</sup>, Seung-Young Park<sup>2</sup>, Jongmin Kim<sup>4</sup>, and Sanghyeon Kim<sup>1</sup> <sup>1</sup>School of Electrical Engineering, KAIST, <sup>2</sup>Center for Scientific Instrumentation, KBSI, <sup>3</sup>Department of Physics, Kyungpook National University, <sup>4</sup>KANC</p>
<p>TE1-E-4 10:00-10:15</p>	<p><b>Experimental Investigation of Scattering Mechanism in <math>\text{In}_{0.8}\text{Ga}_{0.2}\text{As}</math> HEMTs at Cryogenic Temperature</b> Seung-Woo Son<sup>1</sup>, Ji-Hoon Yoo<sup>1</sup>, Min-Seo Yu<sup>1</sup>, Wan-Soo Park<sup>1</sup>, In-Geun Lee<sup>1</sup>, Jae-Hak Lee<sup>1</sup>, Kyounghoon Yang<sup>2</sup>, and Dae-Hyun Kim<sup>1</sup> <sup>1</sup>School of Electronic and Electrical Engineering, Kyungpook National University, <sup>2</sup>KAIST</p>
<p>TE1-E-5 10:15-10:30</p>	<p><b>A Simple Yet Physical Model for Cutoff Frequency and Maximum Oscillation Frequency of High-electron-mobility Transistors</b> In-Geun Lee<sup>1</sup>, Su-Min Choi<sup>1</sup>, Hyeon-Bhin Jo<sup>1,2</sup>, Wan-Soo Park<sup>1</sup>, Ji-Hoon Yoo<sup>1</sup>, Hyo-Jin Kim<sup>1</sup>, Takuya Tsutsumi<sup>3</sup>, Hiroki Sugiyama<sup>3</sup>, Hideaki Matsuzaki<sup>3</sup>, Jae-Hak Lee<sup>1</sup>, and Dae-Hyun Kim<sup>1</sup> <sup>1</sup>Kyungpook National University, <sup>2</sup>KETI, <sup>3</sup>NTT Device Technology Laboratories</p>
<p>TE1-E-6 10:15-10:45</p>	<p><b>Improved Thermal Reliability in Base Contact of Full 3-inch InP Double-HBTs with <math>f_T</math> and <math>f_{max}</math> in Excess of 300 GHz</b> Yong-Soo Jeon<sup>1</sup>, In-Geun Lee<sup>1</sup>, Yonghyun Kim<sup>2</sup>, Jacob Yun<sup>2</sup>, Ted Kim<sup>2</sup>, Hyuk-Min Kwon<sup>3</sup>, Seung Heon Shin<sup>3</sup>, Jae-Hak Lee<sup>1</sup>, Kyounghoon Yang<sup>4</sup>, and Dae-Hyun Kim<sup>1</sup> <sup>1</sup>Kyungpook National University, <sup>2</sup>QSI, <sup>3</sup>Korea Polytechnics, <sup>4</sup>KAIST</p>

## C. Material Growth & Characterization 분과

### [TF1-C] Advanced Characterization of 2D Materials

좌장: 윤석준 교수(울산대학교), 이승훈 교수(부경대학교)

초청발표 TF1-C-1 09:00-09:30	<b>Operando Electron Microscopy Investigation of Domain Dynamics in 2D Sliding Ferroelectrics</b> Hyobin Yoo Sogang University
TF1-C-2 09:30-09:45	<b>Graphene Capping Layer in Cu Back-End-Of-Line</b> Keun Wook Shin, Yeonchoo Cho, and Kyung-Eun Byun SAIT
TF1-C-3 09:45-10:00	<b>Modulating Polymorph Transition Metal Dichalcogenides through Controlled Thermal and Plasma Treatments</b> Dongho Lee <sup>1</sup> , Hyunho Seok <sup>2</sup> , Sihoon Son <sup>2</sup> , Hyunbin Choi <sup>3</sup> , Gunhyoung Kim <sup>3</sup> , and Taesung Kim <sup>1,2,3</sup> <sup>1</sup> Department of Mechanical Engineering, Sungkyunkwan University, <sup>2</sup> SAINT, Sungkyunkwan University, <sup>3</sup> Department of Semiconductor Convergence Engineering, Sungkyunkwan University
초청발표 TF1-C-4 10:00-10:30	<b>Facile and Large-area Optical Characterization of Atomically Thin Films</b> Jae-Ung Lee Ajou University
TF1-C-5 10:30-10:45	<b>Thermal Property 3D Imaging System Using Frequency-domain Thermoreflectance</b> Jihyun Kim, Jongwon Baek, and Jungwan Cho Sungkyunkwan University

## K. Memory (Design &amp; Process Technology) 분과

## [TG1-K] RRAM and Neuromorphic Device I

좌장: 김수길 팀장(SK하이닉스), 권건우 교수(홍익대학교)

<p>TG1-K-1 09:00-09:15</p>	<p><b>CMOS-compatible, 2DEG-Based Three-terminal Dynamic Memristor</b> Woon Hyung Cheong, Geunyoung Kim, and Kyung Min Kim KAIST</p>
<p>TG1-K-2 09:15-09:30</p>	<p><b>A Memristor-Based Elementary Motion Detector for a Maneuver Prediction</b> Min Gu Lee, Hanchan Song, Gwangmin Kim, Kyung Min Kim Department of Materials Science and Engineering, KAIST</p>
<p>TG1-K-3 09:30-09:45</p>	<p><b>Reconfigurable Two-dimensional Tellurene Artificial Synapse for Bio-inspired Wearable Edge Computing</b> Bolim You<sup>1</sup>, Jeechan Yoon<sup>1</sup>, Yuna Kim<sup>1</sup>, Mino Yang<sup>2</sup>, Jina Bak<sup>1</sup>, Jihyang Park<sup>1</sup>, Jihoon Huh<sup>1</sup>, Myung Gwan Hahm<sup>1</sup>, and Moonsang Lee<sup>1</sup> <sup>1</sup>Inha University, <sup>2</sup>Korea Basic Science Institute Seoul</p>
<p>TG1-K-4 09:45-10:00</p>	<p><b>Strategy to Improve Synaptic Behavior of Ion-actuated Synaptic Transistors – the Use of Ion Blocking Layer for Reliable Multilevel Retention</b> Seonuk Jeon<sup>1</sup>, Nayeon Kim<sup>1</sup>, Eunryeong Hong<sup>1</sup>, Hyun Wook Kim<sup>1</sup>, Yunsur Kim<sup>2</sup>, Hyeonsik Choi<sup>2</sup>, Hyoungjin Park<sup>2</sup>, Jiae Jeong<sup>2</sup>, and Jiyong Woo<sup>1,2</sup> <sup>1</sup>School of Electronic and Electrical Engineering, Kyungpook National University, <sup>2</sup>School of Electronics Engineering, Kyungpook National University</p>
<p>TG1-K-5 10:00-10:15</p>	<p><b>Role of Oxide Barrier in a NbO<sub>x</sub> Layer with Noninert Electrodes for High-yield Threshold Switching Characteristics</b> Hyeonsik Choi<sup>1</sup>, Hyun Wook Kim<sup>2</sup>, Eunryeong Hong<sup>2</sup>, Nayeon Kim<sup>2</sup>, Seonuk Jeon<sup>2</sup>, Yunsur Kim<sup>1</sup>, Hyoungjin Park<sup>1</sup>, Jiae Jeong<sup>1</sup>, and Jiyong Woo<sup>1,2</sup> <sup>1</sup>School of Electronic Engineering, Kyungpook National University, <sup>2</sup>School of Electronic and Electrical Engineering, Kyungpook National University</p>
<p>TG1-K-6 10:15-10:30</p>	<p><b>A 10T2R Non-Volatile SRAM Cell Design with High-Reliability</b> So Yeon Kwon, Woon San Ko, Jun Ho Byun, Do Yeon Lee, and Ga Won Lee Chungnam National University</p>
<p>TG1-K-7 10:30-10:45</p>	<p><b>Impact of Al<sub>2</sub>O<sub>3</sub> Layer on Nonlinearity of Selector-less HfO<sub>x</sub>-Based RRAM for Neuromorphic Computing Applications</b> Yunsur Kim<sup>1</sup>, Hyun Wook Kim<sup>2</sup>, Eunryeong Hong<sup>2</sup>, Nayeon Kim<sup>2</sup>, Seonuk Jeon<sup>2</sup>, Hyeonsik Choi<sup>1</sup>, Hyoungjin Park<sup>1</sup>, Jiae Jeong<sup>1</sup>, and Jiyong Woo<sup>1,2</sup> <sup>1</sup>School of Electronic Engineering, Kyungpook National University, <sup>2</sup>School of Electronic and Electrical Engineering, Kyungpook National University</p>

## K. Memory (Design &amp; Process Technology) 분과

## [TH1-K] Processing In Memory

좌장: 구민석 교수(인천대학교)

초청발표 TH1-K-1 09:00-09:30	<b>A Fully Integrated Hybrid Memristor-CMOS System for Efficient Vector-Matrix Multiplication Operations</b> Seung Hwan Lee Kyung Hee University
TH1-K-2 09:30-09:45	<b>Compact and High-performance 4T Ternary Content-addressable Memory Utilizing Dual-gate Metal Oxide Transistors</b> Taewon Seo <sup>1</sup> , Seongmin Park <sup>1</sup> , and Yoonyoung Chung <sup>1,2,3</sup> <sup>1</sup> Department of Electrical Engineering, POSTECH, <sup>2</sup> Department of Semiconductor Engineering, POSTECH, <sup>3</sup> Center for Semiconductor Technology Convergence, POSTECH
TH1-K-3 09:45-10:00	<b>Device-algorithm Co-optimization for an On-chip Trainable Capacitor Based Synaptic Device with IGZO TFT and Retention-centric Tiki-Taka Algorithm</b> Jaehyeon Kang <sup>1</sup> , Jongun Won <sup>1</sup> , Narae Han <sup>1</sup> , Minseung Kang <sup>1</sup> , Yeaji Park <sup>1</sup> , Youngchae Roh <sup>1</sup> , Hyeongjun Seo <sup>1</sup> , Changhoon Joe <sup>1</sup> , Ung Cho <sup>1</sup> , Minil Kang <sup>2</sup> , Minseong Um <sup>2</sup> , Hyung-Min Lee <sup>2</sup> , Saeroonter Oh <sup>3</sup> , and Sangbum Kim <sup>1</sup> <sup>1</sup> Seoul National University, <sup>2</sup> Korea University, <sup>3</sup> Hanyang University
TH1-K-5 10:00-10:15	<b>A Heater-embodying Rapid and Energy-efficient Mott True Random Number Generator Array for Secure Communication</b> Gwangmin Kim, Jae Hyun In, and Kyung Min Kim Department of Materials Science and Engineering, KAIST



## D. Thin Film Process Technology 분과

### [T11-D] Emerging Devices

좌장: 윤성민 교수(경희대학교), 이웅규 교수(숭실대학교)

T11-D-1 09:00-09:15	<b>Oxide Based Synaptic Transistors Implementing Multi-valued Logic Function</b> Jung Wook Lim <sup>1,2</sup> and Min A Park <sup>1</sup> <sup>1</sup> ETRI, <sup>2</sup> University of Science and Technology
T11-D-2 09:15-09:30	<b>Study on Threshold Switching Behavior of Oxide Thin Film Based Devices; a New Type of Selector</b> Ju Hwan Park <sup>1</sup> , Ji Young Park <sup>1</sup> , Hye Rim Kim <sup>2</sup> , Tae Jung Ha <sup>3</sup> , Jeong Hwan Song <sup>3</sup> , Soo Gil Kim <sup>3</sup> , Tae Joo Park <sup>2</sup> , and Byung Joon Choi <sup>1</sup> <sup>1</sup> Seoul National University of Science and Technology, <sup>2</sup> Hanyang University, <sup>3</sup> SK hynix
T11-D-3 09:30-09:45	<b>Energy Efficient Electrolytic-gated Synapse Transistors Using InGaZnO/HfO<sub>2</sub> Gate Stacks with Vertical Channel Configurations</b> Dong-Hee Kim <sup>1</sup> , Young-Ha Kwon <sup>2</sup> , Nak-Jin Seong <sup>2</sup> , Kyu-Jeong Choi <sup>2</sup> , Jong-Heon Yang <sup>3</sup> , Chi-Sun Hwang <sup>3</sup> , and Sung-Min Yoon <sup>1</sup> <sup>1</sup> Kyung Hee University, <sup>2</sup> NCD Co., Ltd., <sup>3</sup> ETRI
T11-D-5 09:45-10:00	<b>Self-Rectifying Resistive Switching Device for 1k Crossbar Array Structure</b> Hyun Kyu Seo, Su Yeon Lee, Se Yeon Jeong, June hyuk Lee, Min Kyung Lee, and Min Kyu Yang Intelligent Electronic Device Lab, Sahmyook University
초청발표 T11-D-6 10:00-10:30	<b>Atomic Layer Deposition Approaches for High-Resolution/Performance Collidal Quantum Dot Display Applications</b> Seong-Yong Cho, Joon Yup Lee, and Eun A Kim Department of Photonics and Nanoelectronics, Hanyang University ERICA

## A. Interconnect &amp; Package 분과

## [TJ1-A] Emerging Interconnect

좌장: 김병준 교수(한국공학대학교), 주지호 박사(한국전자통신연구원)

TJ1-A-1 09:00-09:15	<b>나노 초 레이저 어닐링을 이용한 비아 플러그의 결정립 크기 증가</b> 정재중 <sup>1</sup> , 박영근 <sup>1</sup> , 백용구 <sup>1</sup> , 김희태 <sup>1</sup> , 김동빈 <sup>1</sup> , 김환욱 <sup>2</sup> , 조병진 <sup>1</sup> <sup>1</sup> 한국과학기술원 전기 및 전자공학부, <sup>2</sup> 한국기초과학지원연구원 소재분석연구부
TJ1-A-2 09:15-09:30	<b>Atomic Layer Deposition of RuO<sub>2</sub> for a Diffusion Barrier in Ru-interconnects</b> Minsu Kim <sup>1</sup> , Youn-Hye Kim <sup>2</sup> , Ki-Seok An <sup>3</sup> , and Soo-Hyun Kim <sup>4</sup> <sup>1</sup> Kyonggi University, <sup>2</sup> Yeungnam University, <sup>3</sup> KRICT, <sup>4</sup> UNIST
TJ1-A-3 09:30-09:45	<b>Electromigration Reliability of Barrierless Ruthenium and Molybdenum for Sub-10 nm Interconnection</b> Jungkyun Kim, Hakseung Rhee, and Kyung Min Kim KAIST
TJ1-A-4 09:45-10:00	<b>Reduced Size Effect of Resistivity in Cobalt-Palladium (CoPd) Alloys for Advanced Interconnection Applications</b> Hyeong Jun Kim <sup>1</sup> , Kiyoung Lee <sup>2</sup> , Tae Won Jeong <sup>3</sup> , Keon Wook Shin <sup>3</sup> , Sang Won Kim <sup>3</sup> , and Changhwan Choi <sup>1</sup> <sup>1</sup> Division of Materials Science and Engineering, Hanyang University, <sup>2</sup> Department of Materials Science and Engineering, Hongik University, <sup>3</sup> SAIT
TJ1-A-5 10:00-10:15	<b>Selective Deposition of ALD Barrier Metal for Extremely Advanced Cu Interconnect</b> 김기현, 장준기, 박경필, 박치범, 박은영, 이재호, 정은지, 박두환, 김진, 김락환, 하태홍, 안정훈, 이종호 Foundry Business, Samsung Electronics Co., Ltd.
초청발표 TJ1-A-6 10:15-10:45	<b>Improving Mechanical-electrical Reliability of Cu Interconnects based on the Microstructure Analysis</b> Seongi Lee <sup>1</sup> , Jun Hyeok Hyun <sup>2</sup> , and So-Yeon Lee <sup>2</sup> <sup>1</sup> Seoul National University, <sup>2</sup> Kumoh National Institute of Technology

## G. Device & Process Modeling, Simulation and Reliability 분과

### [TK1-G] Reliability & Power Device

좌장: 장지원 교수(연세대학교), 김성호 교수(세종대학교)

초청발표 TK1-G-1 09:00-09:30	<b>Study on Reliability of Automotive Semiconductor Devices and Validation Technology Trends</b> You-Cheol Jang HL Mando
TK1-G-2 09:30-09:45	<b>Reliability Assessment of High-voltage FinFET Technology for RF Applications</b> Kyoungwan Oh <sup>1</sup> , Hyangwoo Kim <sup>1</sup> , Wooyeol Maeng <sup>2</sup> , Kangwook Park <sup>2</sup> , Hyung-Jin Lee <sup>2</sup> , Ju Hong Park <sup>1</sup> , and Chang-Ki Baek <sup>1</sup> <sup>1</sup> POSTECH, <sup>2</sup> Samsung Electronics Co., Ltd.
TK1-G-3 09:45-10:00	<b>Numerical Investigation of GaN HMET Using Finite Element Method according to Process Parameters</b> Na-Yeon Choi and Sung-Uk Zhang Digital Twin Laboratory, Dong-eui University
TK1-G-4 10:00-10:15	<b>Simulation Study of a Full Turn-on RC-IGBT with Energy Loss</b> Min Seok Jang <sup>1</sup> , Jee Hun Jeong <sup>1</sup> , Da Hui Yoo <sup>1</sup> , Sung Mo Koo <sup>2</sup> , and Ho Jun Lee <sup>1</sup> <sup>1</sup> Pusan National University, <sup>2</sup> TRinno Technology Co., Ltd.
TK1-G-5 10:15-10:30	<b>Wire Bonding 두께변화와 Die-attach Void에 따른 열 저항 변화 연구</b> Sang Min Nam and Sung-Uk Zhang Digital Twin Laboratory, Dong-Eui University
TK1-G-6 10:30-10:45	<b>Compact Well RC Modeling Method for P1dB and Harmonic Distortion Simulation of the Multi-stacked Transistors on RF Switch Module</b> Nakwon Yu, Jongmin Kim, Youngchul Kim, and Hyunchul Nah DB HiTek

## Q. Metrology, Inspection, Analysis, and Yield Enhancement 분과

## [TL1-Q] Metrology, Inspection, and Yield Enhancement I

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

초청발표 TL1-Q-1 09:00-09:30	<b>SEM 영상을 활용한 패턴의 3차원 측정 방법</b> Younghoon Sohn Samsung Electronics Co., Ltd.
초청발표 TL1-Q-2 09:30-10:00	<b>Skyrmionics</b> Chanyong Hwang KRISS
TL1-Q-3 10:00-10:15	<b>Metrology/Inspection System of Extra Ultraviolet (EUV) Material and Optical Components for Ultra-fine Semiconductor Patterning</b> Wooram Kim <sup>1</sup> , Eun Seok Choe <sup>1</sup> , Do-Yeon Hwang <sup>1</sup> , Hyo-Chang Lee <sup>1,2</sup> , Jung-Hyung Kim <sup>1</sup> , Won Chegal <sup>1</sup> , and Sang-Woo Kang <sup>1</sup> <sup>1</sup> Semiconductor Integrated Metrology Team, KRISS, <sup>2</sup> Department of Electronics and Information Engineering, Korea Aerospace University
TL1-Q-4 10:15-10:30	<b>The Study of Optical Measurement Technologies for the Advanced Packaging of the Semiconductor Manufacturing Process</b> Joon Ho You and Chang Soo Kim Nexensor Inc.
TL1-Q-5 10:30-10:45	<b>Development of ARDE Technology for HARC Using IEDF based on High-resolution VSEM Etch Profile Data</b> Jihoon Park <sup>1</sup> , Namjae Bae <sup>1</sup> , Ji-Won Kwon <sup>1</sup> , Taejun Park <sup>1</sup> , Jaemin Song <sup>2</sup> , and Gon-Ho Kim <sup>1</sup> <sup>1</sup> Seoul National University, <sup>2</sup> Samsung Electronics Co., Ltd.

## B. Patterning (Lithography & Etch Technology) 분과

### [TA2-B] Advanced Plasma Etching I

좌장: 유신재 교수(충남대학교)

초청발표 TA2-B-1 10:55-11:25	<b>TCAD Augmented Generative Adversarial Network for Optimizing a Chip Level Size Mask-layout Design in HARC Etching Process</b> Hyoungcheol Kwon <sup>1</sup> , Hyunsuk Huh <sup>2</sup> , Hwiwon Seo <sup>1</sup> , Songhee Han <sup>1</sup> , Imhee Won <sup>1</sup> , Dongyeon Oh <sup>1</sup> , Felipe Iza <sup>3</sup> , Seungchul Lee <sup>2</sup> , Sung Kye Park <sup>1</sup> , and Seonyong Cha <sup>4</sup> <sup>1</sup> Design Input Center, SK hynix, <sup>2</sup> Department of Mechanical Engineering, POSTECH, <sup>3</sup> The Wolfson School of Mechanical, Electrical and Manufacturing Engineering, Loughborough University, <sup>4</sup> R&D Division, SK hynix
TA2-B-2 11:25-11:40	<b>Contact-hole Reduction Using Advanced Cyclic Etching Process in Heptafluoropropyl Methyl Ether Plasmas</b> 유상현 <sup>1,2</sup> , 김창구 <sup>1,2</sup> <sup>1</sup> Department of Chemical Engineering, Ajou University, <sup>2</sup> Department of Energy Systems Research, Ajou University
TA2-B-3 11:40-11:55	<b>Investigation of Etching Profile Transition in SiO<sub>2</sub> Etching Using Ar/CF<sub>4</sub> Discharges</b> 정원녕 <sup>1</sup> , 최병엽 <sup>1</sup> , 김시준 <sup>2</sup> , 이영석 <sup>2</sup> , 성인호 <sup>1</sup> , 조철희 <sup>1</sup> , 최민수 <sup>1</sup> , 설유빈 <sup>2</sup> , 이우빈 <sup>1</sup> , 서성현 <sup>1</sup> , 유신재 <sup>1,2</sup> <sup>1</sup> Department of Physics, Chungnam National University, <sup>2</sup> IQS, Chungnam National University
초청발표 TA2-B-4 11:55-12:25	<b>Plasma-Enhanced Atomic Layer Etching for Metals and Dielectric Materials</b> Heeyeop Chae School of Chemical Engineering, Sungkyunkwan University
TA2-B-5 12:25-12:40	<b>Plasma Atomic Layer Etching of Titanium Nitride with Surface Fluorination or Chlorination</b> Heeju Ha <sup>1</sup> , Hyeongwu Lee <sup>2</sup> , Minsung Jeon <sup>3</sup> , and Heeyeop Chae <sup>1,2,3</sup> <sup>1</sup> School of Chemical Engineering, Sungkyunkwan University, <sup>2</sup> Department of Nano Science and Technology, SKKU Advanced Institute of Nanotechnology (SAINT), Sungkyunkwan University, <sup>3</sup> Department of Semiconductor Convergence Engineering, Sungkyunkwan University

## H. Display and Imaging Technologies 분과

### [TB2-H] Display and Imaging Technologies II

좌장: 정예환 교수(한양대학교), 권혁인 교수(중앙대학교)

<p>초청발표 TB2-H-1 10:55-11:25</p>	<p><b>Bio-inspired Electronic Eyes Using Flexible and Synaptic Optoelectronics</b> Changsoon Choi Center for Opto-Electronic Materials and Devices, KIST</p>
<p>TB2-H-2 11:25-11:40</p>	<p><b>Effective Mg Doping in ZnO Nanoparticles via the Ultrasonic-assisted Synthesis for Quantum Dot Light-emitting Diodes</b> Hyeonseung Ban<sup>1</sup>, Yeongho Choi<sup>2,3</sup>, Hyo Geun Lee<sup>1</sup>, Woon-ho Jung<sup>2,3</sup>, Jaehoon Lim<sup>2,3,4</sup>, and Seong-Yong Cho<sup>1</sup> <sup>1</sup>Department of Photonics and Nanoelectronics, Hanyang University ERICA, <sup>2</sup>Department of Energy Science, Sungkyunkwan University, <sup>3</sup>Center for Artificial Atoms, Sungkyunkwan University, <sup>4</sup>SIEST, Sungkyunkwan University</p>
<p>TB2-H-3 11:40-11:55</p>	<p><b>P-type Cul Stacked IGZO-TFTs with Broadband Spectrum Responsivity</b> Hyeon Jong Lee, Yun Sung Lee, Jong Joon Park, Gun Ho Bang, Jae Min Han, and Sung Hun Jin Department of Electronic Engineering, and I-Nanofab Center, Incheon National University</p>
<p>TB2-H-4 11:55-12:10</p>	<p><b>Wavelength - Tunable Grating - Resonance InGaAs Narrowband Photodetector with Infrared Optical PCM, Antimony Triselenide (Sb<sub>2</sub>Se<sub>3</sub>)</b> Junho Jang<sup>1</sup>, Il-Suk Kang<sup>2</sup>, and SangHyeon Kim<sup>1</sup> <sup>1</sup>School of Electrical Engineering, KAIST, <sup>2</sup>NNFC</p>
<p>TB2-H-5 12:10-12:25</p>	<p><b>Analyzing the Luminance Drop and Voltage Behavior of Indium Phosphide Quantum Dot Light-emitting Diodes</b> Yeongmin Moon and Jeonghun Kwak <sup>1</sup>Department of Electrical and Computer Engineering, Seoul National University, <sup>2</sup>ISRC, Seoul National University</p>
<p>TB2-H-6 12:25-12:40</p>	<p><b>ALD-Based Multinary Metal Oxide Electron Transport Layer for Quantum Dot Light-emitting Diodes</b> Hyo Geun Lee<sup>1,2</sup>, Yong Woo Kwon<sup>2</sup>, Woon Ho Jung<sup>2</sup>, Hyeonjun Lee<sup>4</sup>, Min Seok Kim<sup>1</sup>, Hyun-Mi Kim<sup>5</sup>, Hyeongkeun Kim<sup>5</sup>, Hae Jin Kim<sup>6</sup>, Doh. C. Lee<sup>4</sup>, Jaehoon Lim<sup>2,3</sup>, and Seong Yong Cho<sup>1</sup> <sup>1</sup>Department of Photonics and Nanoelectronics, Hanyang University, <sup>2</sup>Department of Energy Science and Center for Artificial Atoms, Sungkyunkwan University, <sup>3</sup>Institute of Energy Science and Technology (SIEST), Sungkyunkwan University, <sup>4</sup>Department of Chemical and Biomolecular Engineering, KAIST Institute for the Nanocentury, KAIST, <sup>5</sup>Korea Electronics Technology Institute, <sup>6</sup>Department of Materials Science and Engineering, College of Engineering, Myongji University</p>

## J. Nano-Science & Technology 분과

### [TC2-J] 1D/2D Optoelectronics

좌장: 강기훈 교수(서울대학교), 박혜성 교수(고려대학교)

초청발표 TC2-J-1 10:55-11:25	<b>Ultrathin Waveguides Realized with 2D Materials</b> Myungjae Lee Seoul National University
TC2-J-2 11:25-11:40	<b>Design and Fabrication of an In-situ Core/Shell Perovskite/MoS<sub>2</sub> Heterostructure for High-performance Photodetection</b> Sunggyu Ryoo <sup>1</sup> , Jinwoo Sim <sup>1</sup> , Joo Sung Kim <sup>2</sup> , Juntae Jang <sup>1</sup> , Tae-woo Lee <sup>2</sup> , and Takhee Lee <sup>1</sup> <sup>1</sup> Department of Physics and Astronomy, Seoul National University, <sup>2</sup> Department of Materials Science and Engineering, Seoul National University
TC2-J-3 11:40-11:55	<b>Electronic Trap Measurement in QD Optoelectronics</b> Gyu Weon Hwang, Tae Hwan Park, Jun Young Jin, and Kyung Won Seo KIST
초청발표 TC2-J-4 11:55-12:25	<b>Efficient light Manipulation Using WS<sub>2</sub> Multilayers</b> Su-Hyun Gong Department of Physics, Korea University
TC2-J-5 12:25-12:40	<b>An Analysis of Near-infrared Absorption in Silicon Nanowires with Wavy-sidewalls</b> Minkeun Choi, Chang-Ki Baek, and Ju Hong Park Department of Convergence IT Engineering, POSTECH

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

[TD2-P] 수소 생산 / 미래 에너지

좌장: 박정웅 교수(가천대학교), 유상우 교수(경기대학교)

초청발표 TD2-P-1 10:55-11:25	<b>MOF-Based Catalysts for Efficient Electrochemical Conversion of CO<sub>2</sub> to CO</b> Soo Young Kim Department of Materials Science and Engineering, Korea University
초청발표 TD2-P-2 11:25-11:55	<b>Research of National Climate/Energy Policy, Strategy and R&amp;D Planning</b> Jeong In Lee National Climate Technology Center(NCTC), KIER
TD2-P-3 11:55-12:10	<b>Electrochemical Nitrate Reduction to Ammonia on Facet-engineered Epitaxial Perovskite Oxide</b> Jun Beom Hwang, Jiwoong Yang, and Sanghan Lee School of Materials Science and Engineering, GIST
TD2-P-4 12:10-12:25	<b>Enhancing BiVO<sub>4</sub> Photoanode Performance by Insertion of an Epitaxial BiFeO<sub>3</sub> Ferroelectric Layer</b> Yejoon Kim, Haejin Jang, and Sanghan Lee School of Materials Science and Engineering, GIST
TD2-P-5 12:25-12:40	<b>Enhancing Zinc Cobalt Sulfide Catalysis via Heterojunction Design with Metallic Phase Molybdenum Sulfide</b> Mikiyas Mekete Mekonen <sup>1,2</sup> , Ranjith Balu <sup>1,2</sup> , Jang Seok Gwon <sup>1,2</sup> , Shahbaz Ahmed <sup>1,2</sup> , and Bee Lyong Yang <sup>1</sup> <b>철회</b> <sup>1</sup> School of Advanced Materials Science and Engineering, Kumoh National Institute of Technology, <sup>2</sup> GHS Co., Ltd.



## E. Compound Semiconductors 분과

## [TE2-E] Compound Semiconductor - High-Power Devices

좌장: 차호영 교수(홍익대학교), 문재경 교수(한국전자통신연구원)

TE2-E-1 10:55-11:10	<b>P형 물질 (<math>\text{NiO}_x</math>, <math>\text{CuO}_x</math>) 특성에 따른 <math>\alpha\text{-Ga}_2\text{O}_3</math> PN 접합 다이오드의 항복 전압 및 소자 특성변화 연구</b> Hyeon-Yeong Jeong <sup>1</sup> , Hyun-Ho Jeong <sup>1</sup> , Hyeon-Cheol Kim <sup>1</sup> , Tae-Hoon Jang <sup>2</sup> , Kyu-Hwan Shim <sup>1,2</sup> , and Chel-Jong Choi <sup>1</sup> <sup>1</sup> Jeonbuk National University, <sup>2</sup> R&D Division, Sigetronics, Inc.
TE2-E-2 11:10-11:25	<b>MOCVD-grown <math>\text{Ga}_2\text{O}_3</math>-on-SiC, <math>\text{Ga}_2\text{O}_3</math>-on-<math>\text{Al}_2\text{O}_3</math> 이중 구조의 열전도도 계측</b> Taeyeon Kim <sup>1</sup> , Jihyun Kim <sup>1</sup> , Jonggu Lee <sup>1</sup> , Hyeongyoon Kim <sup>2</sup> , Jihyun Park <sup>2</sup> , Daewoo Jeon <sup>2</sup> , and Jungwan Cho <sup>1</sup> <sup>1</sup> School of Mechanical Engineering, Sungkyunkwan University, <sup>2</sup> KICET
TE2-E-3 11:25-11:40	<b>A New Method of Forming Junction Termination Extension through Epitaxial Growth for High Voltage SiC Power Devices</b> Sangyeob Kim, Sumin Park, Gukhwa Jeon, Jinhun Kim, Kanghee Shin, Dusan Baek, and Ogyun Seok Kumoh National Institute of Technology
TE2-E-4 11:40-11:55	<b>Improving the Surge Characteristics of SiC MOSFETs by Using Embedded Poly-Si SBDs</b> Gyuhyeok Kang, Yeongeun Park, Hyowon Yoon, Chaeyun Kim, Sangyeob Kim, Gukhwa Jeon, and Ogyun Seok Kumoh National Institute of Technology
TE2-E-5 11:55-12:10	<b>Turn-on 상태의 1.2 kV SiC MOSFET 의 감마선 조사 영향 분석</b> 김채운 <sup>1</sup> , 윤효원 <sup>1</sup> , 박영은 <sup>1</sup> , 김상엽 <sup>1</sup> , 강규혁 <sup>1</sup> , 전국화 <sup>1</sup> , 김동석 <sup>2</sup> , 석오균 <sup>1</sup> <sup>1</sup> 금오공과대학교, <sup>2</sup> 한국원자력연구원
TE2-E-6 12:10-12:25	<b>Crystallographic Chemical Etching Behavior of GaN Nanostructures</b> Hyesu Ryu <sup>1</sup> , Hak-Jong Choi <sup>2</sup> , Mandar Kulkarni <sup>4</sup> , Hokyun Rho <sup>3</sup> , Ga Eun Kim <sup>1</sup> , Hyungjun Lim <sup>2</sup> , Sang Wan Ryu <sup>4</sup> , and Sang Hyun Lee <sup>1</sup> <sup>1</sup> School of Chemical Engineering, Chonnam National University, <sup>2</sup> Nano-Convergence Mechanical Systems Research Division, KIMM, <sup>3</sup> Energy Convergence Core-Facility, Chonnam National University, <sup>4</sup> School of Physics, Chonnam National University
TE2-E-7 12:25-12:40	<b>2kV Vertical GaN PiN Diode for High Power Device Applications</b> Hyung-Seok Lee, Donghan Kim, Sooyoung Moon, and Sung-Bum Bae ETRI

## C. Material Growth & Characterization 분과

### [TF2-C] Functional Oxides

좌장: 유효빈 교수(서강대학교), 이재웅 교수(아주대학교)

초청발표 TF2-C-1 10:55-11:25	<b>Functional Perovskite Oxides with Atomic Gradients</b> Daesu Lee Department of Physics, POSTECH
TF2-C-2 11:25-11:40	<b>Heat Management Using Mesoporous MgO for BEOL Interlayer Dielectric</b> Anh-Duy Nguyen and Rino Choi 3D Convergence Center and Department of Materials Science and Engineering, Inha University
TF2-C-3 11:40-11:55	<b>Fabrication of Hetero-epitaxy SrCoO<sub>2.5</sub>/SrRuO<sub>3</sub> Freestanding Thin Films for RRAM Application</b> Eun Seok Choi and Sanghan Lee School of Materials Science and Engineering, GIST
초청발표 TF2-C-4 11:55-12:25	<b>Surface Triggered Stabilization of Metastable Charge-ordered Phase in SrTiO<sub>3</sub></b> Kitae Eom Department of Electronic Engineering, Gachon University
TF2-C-5 12:25-12:40	<b>Dielectric-constant/Capacitive Weighted Memory Materials</b> Yoon Seok Oh <sup>1</sup> , Jun Han Lee <sup>1</sup> , Nguyen Xuan Duong <sup>2</sup> , Min-Hyoung Jung <sup>3</sup> , Hyun-Jae Lee <sup>1</sup> , Ahyoung Kim <sup>4</sup> , Youngki Yeo <sup>5</sup> , Junhyung Kim <sup>1</sup> , Gye-Hyeon Kim <sup>1</sup> , Byeong-Gwan Cho <sup>6</sup> , Jaegyung Kim <sup>5</sup> , Furqan Ul Hassan Naqvi <sup>7</sup> , Jong-Seong Bae <sup>9</sup> , Jeehoon Kim <sup>10</sup> , Chang Won Ahn <sup>2</sup> , Young-Min Kim <sup>3</sup> , Tae Kwon Song <sup>11</sup> , Jae-Hyeon Ko <sup>7</sup> , Tae-Yeong Koo <sup>6</sup> , Changhee Sohn <sup>1</sup> , Kibog Park <sup>1</sup> , Chan-Ho Yang <sup>5</sup> , Sang Mo Yang <sup>4</sup> , Jun Hee Lee <sup>1</sup> , Hu Young Jeong <sup>1</sup> , and Tae Heon Kim <sup>2</sup> <sup>1</sup> UNIST, <sup>2</sup> University of Ulsan, <sup>3</sup> Sungkyunkwan University, <sup>4</sup> Sogang University, <sup>5</sup> KAIST, <sup>6</sup> Pohang Accelerator Laboratory, <sup>7</sup> Hallym University, <sup>9</sup> KBSI, <sup>10</sup> POSTECH, <sup>11</sup> Changwon National University

## K. Memory (Design & Process Technology) 분과

### [TG2-K] RRAM and Neuromorphic Device II

좌장: 최신현 교수(KAIST), 김형진 교수(인하대학교)

TG2-K-1 10:55-11:10	<b>Selector-less V-CBRAM with High Nonlinearity and Low-power Operation via Tunnel-gap Controllable Two-Dimensional Electron Gas (2DEG) Electrode</b> Jiho Kim, Ohhyuk Kwon, and Hyunsang Hwang POSTECH
TG2-K-2 11:10-11:25	<b>Robust Molybdenum Disulfide Nanograined Memristors Fabricated via PECVD Process</b> Gunhoo Woo <sup>1</sup> , Hyeong-U Kim <sup>2</sup> , Byung Chul Jang <sup>3</sup> , Jae-joon Kim <sup>4</sup> , Hocheon Yoo <sup>5</sup> , and Taesung Kim <sup>1</sup> <sup>1</sup> Sungkyunkwan University, <sup>2</sup> KIMM, <sup>3</sup> Kyungpook National University, <sup>4</sup> Seoul National University, <sup>5</sup> Gachon University
TG2-K-3 11:25-11:40	<b>Fabrication and Resistive Switching Characterization of HfO<sub>x</sub>-Based 4-layer VRRAM for High-density Synapse Array</b> Subaek Lee <sup>1</sup> , Sungjoon Kim <sup>2,3</sup> , Hyojin So <sup>1</sup> , Gyeongpyo Kim <sup>1</sup> , Doohyung Kim <sup>1</sup> , Minkang Kim <sup>1</sup> , Juri Kim <sup>1</sup> , Hyesung Nah <sup>1</sup> , Woo Young Choi <sup>2,3</sup> , and Sungjun Kim <sup>1</sup> <sup>1</sup> Division of Electronics and Electrical Engineering, Dongguk University, <sup>2</sup> Department of Electrical and Computer Engineering, Seoul National University, <sup>3</sup> ISRC, Seoul National University
TG2-K-4 11:40-11:55	<b>Superior Ion Retention of Divalent Magnesium-ion Based Si/MgF<sub>2</sub>/WO<sub>x</sub> Electrochemical RAM for Neuromorphic Systems</b> Heebum Kang, Kyumin Lee, and Hyunsang Hwang Department of Material Science and Engineering, POSTECH
TG2-K-5 11:55-12:10	<b>Implementation of Multiple-weak-filaments Type Memristor based on Cu:Te/ TaO<sub>x</sub> with a Te Interfacial Layer for Highly Reliable Artificial Synapse</b> Keonhee Kim <sup>1,2,3</sup> , Jae Gwang Lim <sup>1,2,3</sup> , Sung Jae Park <sup>1,2,3</sup> , Gyutaek Oh <sup>1,4</sup> , Yeonjoo Jeong <sup>1</sup> , Jaewook Kim <sup>1</sup> , Suyoun Lee <sup>1</sup> , Joon Young Kwak <sup>1</sup> , Jongkil Park <sup>1</sup> , Gyu Weon Hwang <sup>1</sup> , Kyeong-Seok Lee <sup>1</sup> , Seongsik Park <sup>1</sup> , Hyun Jae Jang <sup>1</sup> , Byeong-Kwon Ju <sup>2,3</sup> , Jong Keuk Park <sup>1</sup> , and Inho Kim <sup>1</sup> <sup>1</sup> Center for Neuromorphic Engineering, KIST, <sup>2</sup> Display and Nanosystem Laboratory, Korea University, <sup>3</sup> School of Electrical Engineering, Korea University, <sup>4</sup> Division of Electronics and Electrical Engineering, Dongguk University
TG2-K-6 12:10-12:25	<b>Investigating the Effect of Oxygen Vacancy Control in Sputter-Deposited Ta<sub>2</sub>O<sub>5-x</sub> Films on Synaptic Device Properties</b> Chae Min Yeom <sup>1</sup> , Hyuk Min Kwon <sup>2</sup> , Hyeon Seung Lee <sup>1</sup> , and Hi Deok Lee <sup>1</sup> <sup>1</sup> Chungnam National University, <sup>2</sup> Semiconductor Convergence Campus of Korea Polytechnics College
TG2-K-7 12:25-12:40	<b>Artificial Neuron based on Toxic Element-free SiO<sub>x</sub> Threshold Switch for Unconventional Oscillatory Neural Networks</b> Eunyeong Hong, Hyun Wook Kim, Seonuk Jeon, Nayeon Kim, and Jiyong Woo School of Electronic and Electrical Engineering, Kyungpook National University

## K. Memory (Design & Process Technology) 분과

### [TH2-K] DRAM

좌장: 오정훈 마스터(삼성전자)

초청발표 TH2-K-1 10:55-11:25	<b>Improvement of DRAM Cell Data Sensing Margin by Retargeting Local Misalignment and Process Skew</b> Kyuseok Lee <sup>1</sup> , Jungyoung Koh <sup>1</sup> , Hyunju Sung <sup>1</sup> , Jaehyun Yu <sup>1</sup> , Hyunmi Ji <sup>1</sup> , Yeongeun Kim <sup>1</sup> , Hyewon Kim <sup>1</sup> , Jae Bum Jeon <sup>1</sup> , Jiseong Jeong <sup>1</sup> , Sunha Baek <sup>2</sup> , Ohhun Kwon <sup>2</sup> , and Jemin Park <sup>1</sup> <sup>1</sup> Semiconductor R&D Center, Samsung Electronics Co., Ltd., <sup>2</sup> Design Technology Team, Samsung Electronics Co., Ltd.
초청발표 TH2-K-2 11:25-11:55	<b>Challenges and Issues of 2T-0C Device for DRAM Applications with Respect to Write/Read Operation and 3D Cell Architectures</b> Dae Hwan Kang <sup>1,4</sup> , Juyoung Yun <sup>2</sup> , Suwon Seong <sup>2</sup> , Beongwoo Lee <sup>3</sup> , Junyoung Choi <sup>3</sup> , Jimin Lee <sup>3</sup> , Min-Su Cho <sup>2</sup> , Yoonyoung Chung <sup>1,2,4</sup> , Sung Woong Chung <sup>1,4</sup> , and Seyoung Kim <sup>1,3,4</sup> <sup>1</sup> Department of Semiconductor Engineering, POSTECH, <sup>2</sup> Department of Electrical Engineering, POSTECH, <sup>3</sup> Department of Materials Science and Engineering, POSTECH, <sup>4</sup> CSTC, POSTECH
TH2-K-3 11:55-12:10	<b>Computational Device Design of Cylindrical IGZO 2T0C DRAM Cell</b> Sang-Mok Jeong and Sung-Min Hong School of Electrical Engineering and Computer Science, GIST
TH2-K-4 12:10-12:25	<b>Mitigating Leakage Current Issues in 1-Row Hammer by Introducing Buried Oxide under the BCAT Structure</b> Sang Hyun Lee, Yeon Seok Kim, Chang Young Lim, and Min-Woo Kwon Department of Electric Engineering, Gangneung-Wonju National University
TH2-K-5 12:25-12:40	<b>A Novel 2T0C DRAM Cell Structure and Refresh Technique for Processing-in-memory Applications</b> Seong Hwan Kong, Hui-Jae Choi, Chan-Gi Yook, and Wonbo Shim Seoul National University of Science and Technology

D. Thin Film Process Technology **분과****[TI2-D] Memory Capacitors****좌장:** 전우진 교수(경희대학교), 이홍섭 교수(경희대학교)

<p>초청발표  <b>TI2-D-1</b>  10:55-11:25</p>	<p><b>High-Performance Nanostructured Flexible Capacitor by Plasma-Assisted Atomic Layer Annealing at Low Temperature</b>  Jaehyeong Lee<sup>1</sup>, Dohyun Go<sup>1</sup>, Useng Lee<sup>1</sup>, Jong. G Ok<sup>1</sup>, and Jihwan An<sup>2</sup>  <sup>1</sup>Department of Manufacturing Systems and Design Engineering, SeoulTech, <sup>2</sup>Department of Mechanical Engineering, POSTECH</p>
<p><b>TI2-D-2</b>  11:25-11:40</p>	<p><b>Low Temperature Crystallization of Atomic Layer Deposited SrTiO<sub>3</sub> Films with Minimal Interfacial Reactions</b>  Hong Keun Chung<sup>1,2</sup>, Tae Joo Park<sup>2</sup>, and Seong Keun Kim<sup>1,3</sup>  <sup>1</sup>Electronic Materials Research Center, KIST, <sup>2</sup>Department of Materials Science and Chemical Engineering, Hanyang University, <sup>3</sup>KU-KIST Graduate School of Converging Science and Technology, Korea University</p>
<p><b>TI2-D-3</b>  11:40-11:55</p>	<p><b>Improvement of Electrical Properties of ZrO<sub>2</sub>/Al<sub>2</sub>O<sub>3</sub> Capacitors via Interfacial Defect Control Using Ar Plasma Treatment</b>  Hyeongjun Kim and Woongkyu Lee  Department of Green Chemistry and Materials Engineering and Department of Materials Science and Engineering, Soongsil University</p>
<p><b>TI2-D-4</b>  11:55-12:10</p>	<p><b>The Precise Control of the Interfacial Reactions in TiO<sub>2</sub>/RuO<sub>2</sub>-structured Capacitors for DRAM Applications</b>  Jihoon Jeon<sup>1,2</sup>, Taikyu Kim<sup>1</sup>, Myungsu Jang<sup>1,2</sup>, Hong Keun Chung<sup>1</sup>, and Seong Keun Kim<sup>1,2</sup>  <sup>1</sup>Electronic Materials Research Center, KIST, <sup>2</sup>KU-KIST Graduate School of Converging Science and Technology, Korea University</p>
<p><b>TI2-D-5</b>  12:10-12:25</p>	<p><b>Fabrication of MoO<sub>2</sub> Electrode by Thermal Atomic Layer Deposition for High-performance TiO<sub>2</sub>-Based DRAM Capacitors</b>  Jae Hyeon Lee, Wangu Kang, Jeong Eun Shin, and Jeong Hwan Han  Department of Materials Science and Engineering, Seoul National University of Science and Technology</p>
<p><b>TI2-D-6</b>  12:25-12:40</p>	<p><b>Plasma-enhanced Atomic Layer Deposition of TiN/Mo<sub>2</sub>N Stacks for Advanced Storage Nodes in Next-generation DRAM Capacitors</b>  Wangu Kang, Ji Sang Ahn, Ha Young Lee, Byung Joon Choi, and Jeong Hwan Han  Department of Materials Science and Engineering, Seoultech</p>

## A. Interconnect & Package 분과

### [TJ2-A] Advanced Packaging I

좌장: 최광성 책임(한국전자통신연구원), 여종석 교수(연세대학교)

TJ2-A-1 10:55-11:10	<b>A Study on the Advancement of Advanced Package Process Technology Integrating Data Analytics and Machine Learning Methods</b> Sang Yup Lee <sup>1</sup> , Sung Hyun Yoon <sup>2</sup> , and Je Hun Youn <sup>2</sup> SK hynix
TJ2-A-3 11:10-11:25	<b>The Development of Multiple Re-distribution Layer (RDL) Using FEOL Photolithography Process for the 2.xD Packaging Applications</b> Sun Bum Kim <sup>1</sup> , Chan Seul Lee <sup>1</sup> , Gyu Lee Kim <sup>1</sup> , Sangyeun Park <sup>2</sup> , Doheon Koo <sup>2</sup> , Yeongu Choi <sup>2</sup> , Joo Young Pyun <sup>2</sup> , Chang Hoon Lee <sup>2</sup> , Hongyun So <sup>2</sup> , Kwan Kyu Park <sup>2</sup> , and Changhwan Choi <sup>1</sup> <sup>1</sup> Division of Materials Science and Engineering, Hanyang University, <sup>2</sup> Department of Mechanical Engineering, Hanyang University
초청발표 TJ2-A-4 11:25-11:55	<b>Low Temperature Cu-Cu Direct Bonding: A Key Technology in Advanced Semiconductor Packaging Technology</b> Ju-Young Kim, Ji-Youn Kwak, and Youngju Sim UNIST
초청발표 TJ2-A-5 11:55-12:25	<b>Global No.1 HBM2E, HBM3의 품질/수율 경쟁력 동시 확보 Look Back 및 차세대 제품에서의 도전 과제</b> Sung Woo Ma, Jin Hee Lee, and Woong-sun Lee WLP Technology Group, SK hynix

## G. Device &amp; Process Modeling, Simulation and Reliability 분과

## [TK2-G] Carrier Transport &amp; Ab-initio Simulation

좌장: 정창욱 교수(울산과학기술원), 장지원 교수(연세대학교)

TK2-G-1 10:55-11:10	<p><b>Neural Network-Assisted Acceleration of Full-Band Semi-Classical Monte Carlo Carrier Transport Simulation</b></p> <p>Dong Hyeok Lee<sup>1</sup> and Jiwon Chang<sup>1,2</sup></p> <p><sup>1</sup>Department of Materials Science and Engineering, Yonsei University, <sup>2</sup>Department of System Semiconductor Engineering, Yonsei University</p>
TK2-G-2 11:10-11:25	<p><b>Cation Disorder Limited IGZO Mobility Calculation based on Density Functional Theory</b></p> <p>Seung Hyo Han, Deokhwa Seo, and Mincheol Shin</p> <p>School of Electrical Engineering, KAIST</p>
TK2-G-3 11:25-11:40	<p><b>Effects of the Gate Offset on Gate-all-around Negative Capacitance Field Effect Transistors with Self-heating Effect</b></p> <p>Yangjin Jung, Hyeongu Lee, and Mincheol Shin</p> <p>Department of Electrical Engineering, KAIST</p>
TK2-G-4 11:40-11:55	<p><b>Semi-Classical Monte Carlo Simulation of Electron/Hole Mobility in Monolayer MX<sub>2</sub> (M=Mo, W; X=S, Se)</b></p> <p>Sukhyeong Youn<sup>1,2</sup>, Donghyeok Lee<sup>1,2</sup>, and Jiwon Chang<sup>1,2</sup></p> <p><sup>1</sup>Department of System Semiconductor Engineering, Yonsei University, <sup>2</sup>Department of Materials Science &amp; Engineering, Yonsei University</p>
TK2-G-5 11:55-12:10	<p><b>Study of Non-equilibrium Energetics in Van der Waals Ferroelectric Tunnel Junctions Using Multi-space Density Functional Theory</b></p> <p>Kaptan Rajput, Ryong Gyu Lee, Tae Hyung Kim, and Yong-Hoon Kim</p> <p>School of Electrical Engineering, KAIST</p>
TK2-G-6 12:10-12:25	<p><b>Strain-Tuned Ferroelectric Transitions in HfO<sub>2</sub>: A New Pathway to Ferroelectric Devices</b></p> <p>Il Young Lee<sup>1,2</sup> and Jae Jun Yu<sup>1,2</sup></p> <p><sup>1</sup>Center for Theoretical Physics, Seoul National University, <sup>2</sup>Department of Physics and Astronomy, Seoul National University</p>
TK2-G-7 12:25-12:40	<p><b>Transport Simulation for Nanosheet FET with Extended Source and Drain Regions</b></p> <p>Phil-Hun Ahn and Sung-Min Hong</p> <p>School of Electrical Engineering and Computer Science, GIST</p>

## V. Quantum Technology 분과

### [TL2-V] AMO-based Quantum Technology

좌장: 이문주 교수(POSTECH)

초청발표 TL2-V-1 10:55-11:25	<b>A Chip-scale Rb Two-photon Optical Clock</b> Hyun-Gue Hong Time and Frequency Group, KRISS
TL2-V-2 11:25-11:40	<b>Dark Resonances and Temperature Estimation of a Trapped-ion Qubit</b> Hyegoo Lee, Keumhyun Kim, Noa Jeong, Yongha Shin, Myunghun Kim, Junhee Cho, and Moonjoo Lee Electrical Engineering, POSTECH
TL2-V-3 11:40-11:55	<b>Coherent Control of an Optical Trapped-ion Qubit</b> Keumhyun Kim, Hyegoo Lee, Yongha Shin, Noa Jeong, Myunghun Kim, Junhee Cho, and Moonjoo Lee Department of Electrical Engineering, POSTECH
TL2-V-4 11:55-12:10	<b>Exploring Third-order Exceptional Point in An Ion-Cavity System</b> Jinuk Kim <sup>2</sup> , Taegy Ha <sup>1</sup> , Donggeon Kim <sup>1</sup> , Dowon Lee <sup>1</sup> , Ki-Se Lee <sup>1</sup> , Jongcheol Won <sup>1</sup> , Yougil Moon <sup>1</sup> , and Moonjoo Lee <sup>1</sup> <sup>1</sup> Department of Electrical Engineering, POSTECH, <sup>2</sup> Department of Physics, Yale University
TL2-V-5 12:10-12:25	<b>Chaotic Motion of a Trapped-Ion Nonlinear Mechanical Oscillator</b> Myunghun Kim, Junhee Cho, Sehyeon Gwon, Keumhyun Kim, Hyegoo Lee, and Moonjoo Lee Department of Electrical Engineering, POSTECH
TL2-V-6 12:25-12:40	<b>Microfabrication of an Ion Trap Chip with Prevention of Direct Silicon Exposure of Sidewalls to Alleviate Laser-induced Charging</b> SeungWoo Yoo <sup>1,2,3</sup> , KwangYeul Choi <sup>1,2,3</sup> , Suhan Kim <sup>1,2,3</sup> , Chiyeon Kim <sup>1,2,3</sup> , Changhyun Jung <sup>1,2,3</sup> , Roberts Berkis <sup>4</sup> , Tracy E. Northup <sup>4</sup> , and Taehyun Kim <sup>1,2,3</sup> <sup>1</sup> Department of Computer Science and Engineering, Seoul National University, <sup>2</sup> Automation and System Research Institute, Seoul National University, <sup>3</sup> ISRC, Inter-university Semiconductor Research Center, Seoul National University, <sup>4</sup> Institut für Experimentalphysik, Universität Innsbruck



## B. Patterning (Lithography & Etch Technology) 분과

### [TA3-B] Advanced Plasma Etching II

좌장: 채희엽 교수(성균관대학교)

초청발표 TA3-B-1 15:30-16:00	<b>나노식각 공정진단·제어기술 Real-Time PI-VM 소개</b> 김곤호 <sup>1,2</sup> <sup>1</sup> 서울대학교 원자핵공학과, <sup>2</sup> 서울대학교 플라즈마 응용연구실
TA3-B-2 16:00-16:15	<b>OLED 디스플레이 제조를 위한 다중 금속막 식각 공정의 PI-VM 기반 패턴 제어</b> 박윤아 <sup>1</sup> , 노연길 <sup>1</sup> , 서라벌 <sup>1</sup> , 송봉섭 <sup>1</sup> , 김곤호 <sup>2</sup> , 박설혜 <sup>1</sup> <sup>1</sup> 삼성디스플레이, <sup>2</sup> 서울대학교
TA3-B-3 16:15-16:30	<b>Enhancement of Plasma Uniformity in Adaptive Dry Etcher with Convex-Shaped Electrodes</b> Sanghyun Kang <sup>1</sup> , Seokchan Yoon <sup>2</sup> , Jaehyuk Lim <sup>1</sup> , and Changhwan Shin <sup>2</sup> <sup>1</sup> Department of Electrical and Computer Engineering, Sungkyunkwan University, <sup>2</sup> School of Electrical Engineering, Korea University
TA3-B-4 16:30-16:45	<b>Observation of the Floating Sheath Distribution Adjacent to a DC-biased Metal Substrate</b> NamJae Bae <sup>1</sup> , Nam-Kyun Kim <sup>2</sup> , Haneul Lee <sup>1</sup> , Yunchang Jang <sup>2</sup> , Seolhye Park <sup>3</sup> , and Gon-Ho Kim <sup>1</sup> <sup>1</sup> Seoul University, <sup>2</sup> Samsung Electronics Co., Ltd., <sup>3</sup> Samsung Display Co., Ltd.
TA3-B-5 16:45-17:00	<b>Nickel-silicide Alloy as an Alternative to Noble Metal Catalyst for Metal-assisted Chemical Etching of Si</b> Haekyun Bong, Kyunghwan Kim, Sunhae Choi, and Jungwoo Oh School of Integrated Technology, Yonsei University
TA3-B-6 17:00-17:15	<b>Correlation with the Microstructure and Synergistic Physiochemical Etching Resistance of Nanocomposites under CF<sub>4</sub>/Ar/O<sub>2</sub> Plasma Conditions in Plasma Etching Chambe</b> Ho Jin Ma <sup>1</sup> , Mi-Ju Kim <sup>1</sup> , Ha-Neul Kim <sup>1</sup> , Jae-Woong Ko <sup>1</sup> , Jae-Wook Lee <sup>1</sup> , Hyo-Chang Lee <sup>2</sup> , and Young-Jo Park <sup>1</sup> <sup>1</sup> KIMS, <sup>2</sup> Korea Aerospace University

## H. Display and Imaging Technologies 분과

### [TB3-H] Display and Imaging Technologies III

좌장: 하만륜 상무(DB하이텍), 이재규 마스터(삼성전자)

<b>TB3-H-1</b> 15:30-15:45	<b>Monolithic Integration of a-IGZO TFT and p-i-n a-Si:H Photodiode for Ultra Flexible and Semi-Transparent Image Sensors</b> Donghyeong Choi <sup>1,2</sup> , Jong-Won Yoon <sup>1</sup> , and Yonghun Kim <sup>1</sup> <sup>1</sup> Department of Energy & Electronic Materials, Surface & Nano Materials Division, KIMS, <sup>2</sup> School of Materials Science and Engineering, Pusan National University
<b>TB3-H-2</b> 15:45-16:00	<b>Noise Suppression Techniques for Low-Noise CMOS Image Sensors</b> Gihwan Cho, Min-Woong Seo, Masamichi Ito, Sung-Jae Byun, Hyukbin Kwon, Sanggwon Lee, Daehee Bae, Heesung Shim, Jae-Kyu Lee, and Chang-Rok Moon Semiconductor R&D Center, Samsung Electronics Co., Ltd.
<b>TB3-H-3</b> 16:00-16:15	<b>Partitioned CMS 기법을 이용한 저잡음 이미지 센서</b> 윤수연, 김수연 동국대학교 반도체과학과
<b>TB3-H-4</b> 16:15-16:30	<b>Improvement of Dark Current Caused by Thermionic Emission in Voltage-Domain Global Shutter CMOS Image Sensor</b> Jae-Hoon Jeon, Je-Yeoun Jung, Sangyoon Kim, Seung-Sik Kim, Jae-Kyu Lee, and Chang-Rok Moon Semiconductor R&D Center, Samsung Electronics Co., Ltd.
<b>TB3-H-5</b> 16:30-16:45	<b>Guard-ring Additional Implantation Technique for Reducing Dark Count Rate of Single-photon Avalanche Diode</b> Sang-Hwan Kim, Juhwan Jung, Hangyu Lee, Dongil Kim, Changhun Han, Chulwoo Hwang, Harin Kang, Dongha Lee, and Manlyun Ha Technology Development Team 4, DB Hitek
<b>TB3-H-6</b> 16:45-17:00	<b>640 x 480 In-direct Time-of-Flight Sensor 개발을 위한 5.0um Pixel 설계</b> Jaehyung Jang, Hoon-moo Choi, Jongchae Kim, Kyungsu Byun, Kyundo Kim, Minseok Shin, Hoon-sang Oh, and Chang-rock Song CIS Development, SK hynix Inc.
<b>TB3-H-7</b> 17:00-17:15	<b>A Backside-Illumination Technique to Enhance Near-Infrared Photon Detection Probability of Single-Photon Avalanche Diode</b> Sang-Hwan Kim, Juhwan Jung, Hangyu Lee, Dongil Kim, Changhun Han, Chulwoo Hwang, Harin Kang, Dongha Lee, and Manlyun Ha Technology Development Team 4, DB Hitek

M. RF and Wireless Design 분과

[TC3-M] RF and Wireless Design

좌장: 권구덕 교수(강원대학교), 한정환 교수(충남대학교)

TC3-M-1 15:30-15:45	<b>N-path Filter-Based Wideband CMOS Low-Noise Amplifier</b> Juhui Jeong, Yujung Kim, Junhyeop Kim, and Junghwan Han Department of Radio and Information Communications Engineering, Chungnam National University
초청발표 TC3-M-2 15:45-16:15	<b>Analog Circuits in Samsung S.LSI</b> Seunghyun Oh Samsung Electronics Co., Ltd.
초청발표 TC3-M-3 16:15-16:45	<b>0.15um GaN HEMT 소자 및 MMIC PDK 개발</b> 강동민 한국전자통신연구원 RF/전력부품연구실
초청발표 TC3-M-4 16:45-17:15	<b>Introduction to High Performance LO Design Techniques in Modern Wireless Communication Systems</b> Shinwoong Kim Handong Global University

## F. Silicon and Group-IV Devices and Integration Technology 분과

### [TD3-F] Advanced Device Technology

좌장: 김경록 교수(울산과학기술원), 이용규 마스터(삼성전자)

초청발표 TD3-F-1 15:30-16:00	<b>Analog Neuron Devices for Hardware-Based Spiking Neural Networks</b> Sung Yun Woo School of Electronic and Electrical Engineering, Kyungpook National University
초청발표 TD3-F-2 16:00-16:30	<b>Design and Fabrication of CMOS Compatible Dual Gate Synapse Array</b> Myung-Hyun Ba Gangneung-Wonju National University
초청발표 TD3-F-3 16:30-17:00	<b>Ferroc Field Effect Transistor for Low-Power Logic Technology</b> Sihyun Kim Department of Electronic Engineering, Sogang University
TD3-F-4 17:00-17:15	<b>* 특허청 특별발표</b> 최첨단 초미세 반도체 소자 집적 기술 특허 동향 및 국가별 출원 집중도 분석 결과

N. VLSI CAD 분과

[TE3-N] AI to VLSI CAD

좌장: 송대건 교수(경북대학교)

초청발표 TE3-N-1 15:30-16:00	<b>Ternary VLSI Design: A Circuits and Systems Perspective</b> Sunmean Kim School of Electronic and Electrical Engineering, Kyungpook National University
TE3-N-2 16:00-16:15	<b>Artificial Schematic Creator with Generative Model</b> Yewon Hwang, Jakang Lee, and Seokhyeong Kang POSTECH
TE3-N-3 16:15-16:30	<b>Design-technology Co-optimization for Standard Cell Pin Length Modulation</b> Junghyun Yoon and Heechun Park Kookmin University
TE3-N-4 16:30-16:45	<b>Impact Analysis of Coupling Effect Induced by Through-silicon Via for Static Timing Analysis in 3D IC</b> Euntaek Oh, Mujun Choi, and Juho Kim Sogang University
TE3-N-5 16:45-17:00	<b>Pin Accessibility Aware Routability Prediction Using Graph Neural Network</b> Jiyun Park, Jongho Yoon, and Seokhyeong Kang POSTECH
TE3-N-6 17:00-17:15	<b>Unsupervised Learning-Based Legalization with Graph Neural Network</b> Dho Ui Lim and Heechun Park Kookmin University

## I. MEMS & Sensors Systems 분과

### [TF3-I] Recent Advances in MEMS

좌장: 강주훈 교수(성균관대학교)

초청발표 TF3-I-1 15:30-16:00	<b>Evaporative Cooling-Based, Power-efficient Thermal Systems for Skin-interfaced Bioelectronic Devices</b> Minsu Park Dankook University
초청발표 TF3-I-2 16:00-16:30	<b>실시간 다중 감지 가능한 3차원 통합형 생체모사 전자 피부 시스템</b> 이보연 KIMM
TF3-I-3 16:30-16:45	<b>Design of Wireless Flexible Smart Gloves for Controlling Virtual and Augmented Reality</b> Lurong Yang and Jeonghyun Kim Department of Electronic Convergence Engineering, Kwangwoon University
TF3-I-4 16:45-17:00	<b>Sweat Permeable and Wearable Electronic Skins with All-inorganic Opto-devices for Long-term Photoplethysmogram Signal Monitoring</b> Jeong Hyeon Kim <sup>1,2</sup> and Han Eol Lee <sup>1,2</sup> <sup>1</sup> Division of Advanced Materials Engineering, Jeonbuk National University, <sup>2</sup> Department of JBNU-KIST Industry-Academia Convergence Research, Jeonbuk National University
TF3-I-5 17:00-17:15	<b>Use of Composite Materials in Flexible Sensors</b> Wooseok Kim and Sang Min Won Sungkyunkwan University

## K. Memory (Design & Process Technology) 분과

### [TG3-K] RRAM and Neuromorphic Device III

좌장: 김성준 교수(동국대학교), 권민우 교수(강릉원주대학교)

TG3-K-1 15:30-15:45	<b>Optimized Chalcogenide Medium for Inherently Activated Resistive Switching Device</b> Jin Joo Ryu <sup>1,2</sup> , Taeyong Eom <sup>1</sup> , Hyunchul Sohn <sup>2</sup> , and Gun Hwan Kim <sup>2,3</sup> <sup>1</sup> Thin Film Materials Research Center, KRICT, <sup>2</sup> Department of Materials Science and Engineering, Yonsei University, <sup>3</sup> Department of System Semiconductor Engineering, Yonsei University
TG3-K-2 15:45-16:00	<b>Pseudo Synaptic Sampling: Energy-Efficient Algorithm for Spiking</b> Hyunwoo Kim, Suyeon Jang, Uicheol Shin, and Sangbum Kim Department of Material Science and Engineering, Seoul National University
TG3-K-3 16:00-16:15	<b>Design and Hardware Implementation of Memristive Based Neural Networks for Efficient Neuromorphic Computing</b> Jae Gwang Lim <sup>1,2</sup> , Keonhee Kim <sup>1,2</sup> , Sung Jae Park <sup>1,2</sup> , Gyutaek Oh <sup>1</sup> , Yeonjoo Jeong <sup>1</sup> , Jaewook Kim <sup>1</sup> , Su youn Lee <sup>1</sup> , Joon Young Kwak <sup>1</sup> , Jongkil Park <sup>1</sup> , Gyu Weon Hwang <sup>1</sup> , Kyeong-Seok Lee <sup>1</sup> , Seongsik Park <sup>1</sup> , Hyun Jae Jang <sup>1</sup> , Byeong-Kwon Ju <sup>2</sup> , Jong Keuk Park <sup>1</sup> , and Inho Kim <sup>1</sup> <sup>1</sup> Center for Neuromorphic Engineering, KIST, <sup>2</sup> Display and Nanosystem Laboratory, School of Electrical Engineering, Korea University
TG3-K-4 16:15-16:30	<b>Implementing a Scalable Neural Network at the Device Level Using a 3D Vertical Structure for PIM</b> Seojin Cho, Hyejin Kim, Minsu Kang, Soho Kim, Sion Kim, Yuna Kim, and Daeseok Lee Department of Electronic Materials Engineering, Kwangwoon University
TG3-K-5 16:30-16:45	<b>Unipolar and Bipolar 1S1M-Based MC-Dropconnect Hardware Implementation</b> Do Hoon Kim, Woon Hyung Cheong, Hanchan Song, Jae Bum Jeon, and Kyung Min Kim KAIST
TG3-K-6 16:45-17:00	<b>Effect of the SiO<sub>2</sub> Film Formation Process on the Recognition Rate in Pd/IGZO/SiO<sub>2</sub>/p<sup>+</sup>-Si Memristors for Artificial Neural Network Application</b> Dong Hyeop Shin, Seung Joo Myoung, Changwook Kim, Jong-Ho Bae, Sung-Jin Choi, Dong Myong Kim, and Dae Hwan Kim School of Electrical Engineering, Kookmin University
TG3-K-7 17:00-17:15	<b>Sound Localization Using Brain-inspired Memristive Delay System for Active Speaker Detection</b> Hanchan Song, Mingu Lee, Woojoon Park, Gwangmin Kim, and Kyung Min Kim Department of Materials Science and Engineering, KAIST

## S. Chip Design Contest 분과

### [TH3-S] Chip Design Contest

좌장: 조건희 교수(경북대학교), 장영찬 교수(금오공과대학교)

<b>TH3-S-1</b> 15:30-15:45	<b>Design of Single-ended PAM-3 Transmitter with Crosstalk Cancellation Scheme for Memory Interface</b> Dongwoo Kang and Kwanso Park Yonsei University
<b>TH3-S-2</b> 15:45-16:00	<b>Design Points of Period-modulation Capacitance-to-digital Converter for Continuous Glucose Monitoring System</b> Donghyun Youn and Minkyu Je School of Electrical Engineering, KAIST
<b>TH3-S-3</b> 16:00-16:15	<b>Design of Time-Based Switched-Capacitor Low-Dropout Regulator</b> Hyunjin Kim, Taehyeong Park, and Chulwoo Kim Department of Semiconductor System Engineering, Korea University
<b>TH3-S-4</b> 16:15-16:30	<b>Hardware Implementation of a CNN-Based Accurate and Efficient 3D Hand Pose Estimator</b> Yongsoo Kim <sup>1</sup> , Wencan Chen <sup>2</sup> , Jaehyeon So <sup>3</sup> , Siyeon Kim <sup>3</sup> , Chanwook Hwang <sup>3</sup> , Jong Hwan Ko <sup>3</sup> , and Jaehyuk Choi <sup>3</sup> <sup>1</sup> Department of Semiconductor and Display Engineering, Sungkyunkwan University, <sup>2</sup> Department of Artificial Intelligence, Sungkyunkwan University, <sup>3</sup> Department of Electrical and Computer Engineering, Sungkyunkwan University



## D. Thin Film Process Technology 분과

### [TI3-D] Ferroelectrics

좌장: 최병준 교수(서울과학기술대학교), 김건환 교수(연세대학교)

TI3-D-1 15:30-15:45	<b>Mitigation of Field-driven Dynamic Phase Evolution in Ferroelectric <math>\text{Hf}_{0.5}\text{Zr}_{0.5}\text{O}_2</math> Films by Adopting Oxygen-supplying Electrode</b> Younghwan Lee <sup>1</sup> , Se Hyun Kim <sup>2</sup> , Hyun Woo Jeong <sup>2</sup> , Geun Hyeong Park <sup>2</sup> , Jaewook Lee <sup>2</sup> , Young Yong Kim <sup>3</sup> , and Min Hyuk Park <sup>1,2</sup> <sup>1</sup> Research Institute of Advanced Materials, Seoul National University, <sup>2</sup> Department of Materials Science and Engineering, Seoul National University, <sup>3</sup> Beamline Division, Pohang Accelerator Laboratory
TI3-D-2 15:45-16:00	<b>Interface Engineering for Enhancement of Ferroelectricity in Sub-5 nm Ultrathin <math>\text{Hf}_{0.5}\text{Zr}_{0.5}\text{O}_2</math> Films</b> Se Hyun Kim <sup>1</sup> , Younghwan Lee <sup>2</sup> , Dong Hyun Lee <sup>1</sup> , and Min Hyuk Park <sup>1,2</sup> <sup>1</sup> Department of Mcrystaterials Science and Engineering, Seoul National University, <sup>2</sup> Research Institute of Advanced Materials, Seoul National University
TI3-D-3 16:00-16:15	<b>Synergistic Impact of <math>\text{Al}_2\text{O}_3</math> Capping Layer and Deposition Temperature for Enhancing the Ferroelectricity of Undoped <math>\text{HfO}_2</math> Thin Films</b> Sang Han Ko and Sung Min Yoon Department of Advanced Materials Engineering for Information and Electronics, Kyung Hee University
TI3-D-4 16:15-16:30	<b><math>\text{CF}_4</math> Plasma Passivation on Laminated-ALD HZO MFIS-FeFET</b> Kyungsoo Park <sup>1</sup> , Chulwon Chung <sup>2</sup> , Boncheol Ku <sup>1</sup> , Seung Hyeon Yun <sup>1</sup> , Junhyeok Park <sup>1</sup> , Yu Jeong Choi <sup>1</sup> , and Changhwan Choi <sup>1</sup> <sup>1</sup> Division of Materials Science and Engineering, Hanyang University, <sup>2</sup> Department of Energy Engineering, Hanyang University
TI3-D-5 16:30-16:45	<b>Development of Lab-Scale Pulsed Laser Annealing (PLA) System for <math>\text{Hf}_x\text{Zr}_{1-x}\text{O}_2</math> Thin Film Crystallization</b> Hyeonsik Kim <sup>1,2</sup> , Hyojin Yang <sup>2</sup> , Sejun Park <sup>2</sup> , Jong-Ho Bae <sup>2</sup> , and Inhee Cho <sup>1</sup> <sup>1</sup> Korea-Russia Innovation Center, KITECH, <sup>2</sup> School of Electrical Engineering, Kookmin University
TI3-D-6 16:45-17:00	<b>Ferroelectricity of <math>\text{Hf}_{0.5}\text{Zr}_{0.5}\text{O}_2</math> Thin Film Induced at 350 °C by Thermally Accelerated Nucleation during Atomic Layer Deposition</b> Jaewook Lee <sup>1,2</sup> , Se Hyun Kim <sup>1,2</sup> , Younghwan Lee <sup>3</sup> , Sang-Youn Park <sup>4</sup> , and Min Hyuk Park <sup>1,2,3</sup> <sup>1</sup> Department of Materials Science and Engineering, Seoul National University, <sup>2</sup> Inter-University Semiconductor Research Center, Seoul National University, <sup>3</sup> Research Institute of Advanced Materials College of Engineering, Seoul National University, <sup>4</sup> Pohang Accelerator Laboratory, POSTECH
TI3-D-7 17:00-17:15	<b>The Impact of <math>\text{CF}_4</math> Plasma Treatment on the Performance of <math>\text{HfO}_2/\text{IGZO}</math> Thin film Transistors (TFTs)</b> Gyu Lee Kim, Sun bum Kim, Chan seul Lee, and Changhwan Choi Division of Materials Science and Engineering, Hanyang University

## A. Interconnect &amp; Package 분과

## [TJ3-A] Hybrid Bonding Technology

좌장: 이태익 선임(한국생산기술연구원), 이은호 교수(성균관대학교)

TJ3-A-1 15:30-15:45	<b>Novel Method of Direct Cu Bonding Using Chemical Reducing Agents</b> Jeehoo Na <sup>1,2</sup> , Eunhye Lee <sup>1</sup> , So Jeong Lee <sup>1</sup> , Dongwoo Lee <sup>2</sup> , and Tae-Ik Lee <sup>1</sup> <sup>1</sup> Micro-Joining Center, Joining R&D Group, KITECH, <sup>2</sup> Applied Mechanics and Materials Design Lab, School of Mechanical Engineering, Sungkyunkwan University
TJ3-A-2 15:45-16:00	<b>Study on Employment of Au Film for Cu-Cu Low Temperature Bonding</b> Ha-Hyung Pin <sup>1</sup> , Hyun-Dong Lee <sup>1</sup> , Hoon Choi <sup>1</sup> , Ju-Hyeon Kim <sup>3</sup> , and Hoo-Jeong Lee <sup>1,2,3</sup> <sup>1</sup> Department of Smart Fab. Technology, Sungkyunkwan University, <sup>2</sup> Department of Advanced Materials Science & Engineering, Sungkyunkwan University, <sup>3</sup> Department of Semiconductor Convergence Engineering, Sungkyunkwan University
TJ3-A-3 16:00-16:15	<b>하이브리드 본딩 기술 적용을 위한 저온 Cu-Cu 및 SiO<sub>2</sub>-SiO<sub>2</sub> 접합부의 정량적 계면접착에너지 평가 및 분석</b> 권용범 <sup>1,2</sup> , 김가희 <sup>1,2</sup> , 김사라은경 <sup>3</sup> , 박영배 <sup>1,2</sup> <sup>1</sup> 안동대학교 신소재공학부, <sup>2</sup> 안동대학교 청정에너지소재기술연구센터, <sup>3</sup> 서울과학기술대학교 지능형반도체공학과
TJ3-A-4 16:15-16:30	<b>구리/폴리머 하이브리드 본딩을 위한 화학적계연마 기술</b> 강석경 <sup>1</sup> , 박주성 <sup>2</sup> , 전찬수 <sup>2</sup> , 김경민 <sup>2</sup> , 김산하 <sup>1</sup> <sup>1</sup> Department of Mechanical Engineering, KAIST, <sup>2</sup> Department of Material Science and Engineering, KAIST
TJ3-A-5 16:30-16:45	<b>A Parametric Approach on HBM Hybrid Bonding Process</b> Jae-Uk Lee <sup>1</sup> , Sung-Hyun Oh <sup>1</sup> , Sarah-Eunkyung Kim <sup>2</sup> , Hoo-Jeong Lee <sup>1</sup> , and Eun-Ho Lee <sup>1</sup> <sup>1</sup> Sungkyunkwan University, <sup>2</sup> Seoul National University of Science of Technology
TJ3-A-6 16:45-17:00	<b>Effect of Cu Pad Density on Cu/SiCN Hybrid Bonding: A Finite Element Analysis Study</b> So-Yeon Park <sup>1</sup> , Hyunji Yoon <sup>1</sup> , Cha-Hee Kim <sup>1</sup> , Sarah Eunkyung Kim <sup>2</sup> , and Won-Jun Lee <sup>1</sup> <sup>1</sup> Department of Nanotechnology and Advanced Materials Engineering, Sejong University, <sup>2</sup> Department of Semiconductor Engineering, Seoul National University of Science and Technology
TJ3-A-7 17:00-17:15	<b>Enhancing Si-bridge Performance: A Study on Signal Integrity and Structural Optimization</b> Ji Hoon Kang and Kee-Won Kwon Department of Semiconductor Convergence Engineering, Sungkyunkwan University

## G. Device & Process Modeling, Simulation and Reliability 분과

### [TK3-G] TCAD & Multiphysics Simulation

좌장: 이재우 교수(고려대학교), 김현우 교수(건국대학교)

TK3-G-1 15:30-15:45	<b>The Quantum Mechanical Effect of Amorphous InGaZnO Transistors Compared with Silicon-on-Insulator Transistors</b> Ho Jung Lee, Donguk Kim, Changwook Kim, Dong Myong Kim, Sung-Jin Choi, Jong-Ho Bae, and Dae Hwan Kim School of Electrical Engineering, Kookmin University
TK3-G-2 15:45-16:00	<b>Investigating Radioactive Ions Effect in The Complementary FET based on The Structure</b> Jonghwa Jeong and Hyunwoo Kim Department of Electrical and Electronics Engineering, Konkuk University
TK3-G-3 16:00-16:15	<b>Mitigation of Single Event Upset Effects in 3 nm Technology Node Gate-All-Around Nanosheet FET 6T SRAM cell</b> Minji Bang, Jonghyeon Ha, Minki Suh, Dabok Lee, Minsang Ryu, and Jungsik Kim Department of Electrical Engineering, Gyeongsang National University
TK3-G-4 16:15-16:30	<b>A Novel CT-DRAM with High Speed and High Retention at Low Power to Replace DRAM</b> Dabok Lee, Jonghyeon Ha, Minki Suh, Minji Bang, Minsang Ryu, and Jungsik Kim Department of Electrical Engineering, Gyeongsang National University
TK3-G-5 16:30-16:45	<b>Investigation of Filamentary Resistive Switching Using Finite Element Method with Phase-field and Multiphysics Simulation</b> Dongmyung Jung and Yongwoo Kwon Department of Materials Science and Engineering, Hongik University
TK3-G-6 16:45-17:00	<b>Computational Investigation on Quantum Information Processing Using Triple Quantum Dot Structures</b> Ji-Hoon Kang and Hoon Ryu KISTI
TK3-G-7 17:00-17:15	<b>Multiphysics Modeling of Thermal Disturbance in Three-Dimensional Stackable Phase-Change Memory</b> Yechan Kim <sup>1</sup> , Namwook Hur <sup>2</sup> , Joonki Suh <sup>2</sup> , and Yongwoo Kwon <sup>1</sup> <sup>1</sup> Hongik University, <sup>2</sup> Ulsan National Institute of Science and Technology

## V. Quantum Technology 분과

### [TL3-V] Solid State Quantum Technology

좌장: 이동현 교수(고려대학교), 차진웅 선임연구원(표준과학연구원)

초청발표 TL3-V-1 15:30-16:00	<b>Cryo-CMOS Controller for Superconducting Quantum Processor</b> Jae-Yoon Sim POSTECH
초청발표 TL3-V-2 16:00-16:30	<b>Fast Calibration and Error Mitigation Applied to Spin Qubits in Silicon</b> Dohun Kim <sup>1,2</sup> <sup>1</sup> Department of Physics and Astronomy, Seoul National University, <sup>2</sup> Institute of Applied Physics, Seoul National University
TL3-V-3 16:30-16:45	<b>Implementation of Zero-noise Extrapolation in <sup>28</sup>Si/SiGe Spin Qubits</b> Jaewon Jung <sup>1</sup> , Hanseo Sohn <sup>1</sup> , Jaemin Park <sup>1</sup> , Hyeongyu Jang <sup>1</sup> , Lucas E. A. Stehouwer <sup>2</sup> , Davide Degli Esposti <sup>2</sup> , Giordano Scappucci <sup>2</sup> , and Dohun Kim <sup>1</sup> <sup>1</sup> Department of Physics and Astronomy, Seoul National University, <sup>2</sup> QuTech and Kavli Institute of Nanoscience, Delft University of Technology
TL3-V-4 16:45-17:00	<b>Closed-loop Feedback and Sensor Dot Decoupling Technique for Suppressing Charge Noise in <sup>28</sup>Si/SiGe Spin Qubit</b> Hyeongyu Jang <sup>1</sup> , Jaemin Park <sup>1</sup> , Hanseo Sohn <sup>1</sup> , Lucas E. A. Stehouwer <sup>2</sup> , Davide Degli Esposti <sup>2</sup> , Giordano Scappucci <sup>2</sup> , and Dohun Kim <sup>1</sup> <sup>1</sup> Department of Physics and Astronomy, Seoul National University, <sup>2</sup> QuTech and Kavli Institute of Nanoscience, Delft University of Technology
TL3-V-5 17:00-17:15	<b>A Multi-physics Analysis to Calculate Energy Dissipation in Superconducting Qubit Systems with Continuum Mechanics</b> Sung-Hyun Oh <sup>1</sup> , Kyoung-Won Kim <sup>3</sup> , and Eun-Ho Lee <sup>1,2</sup> <sup>1</sup> Department of Mechanical Engineering, Sungkyunkwan University, <sup>2</sup> Department of Smart Fab. Technology, Sungkyunkwan University, <sup>3</sup> Keysight Technologies Korea Ltd.

## B. Patterning (Lithography &amp; Etch Technology) 분과

## [FA1-B] Lithography and photoresist I

좌장: 이진균 교수(인하대학교), 성명모 교수(한양대학교)

초청발표 FA1-B-1 09:00-09:30	<b>Spin on Hardmask(SOC)의 소재 개발 동향 및 특성</b> Jin Gon Kim SKMP
FA1-B-2 09:30-09:45	<b>Advanced Exposure Technology in ArF Immersion Photolithography</b> Jungchul Song <sup>1,2</sup> , Gyu-Won Han <sup>1</sup> , Jeonghwan Kim <sup>3</sup> , and Ga-Won Lee <sup>2</sup> <sup>1</sup> NNFC, <sup>2</sup> Division of Electronics Engineering, Chungnam National University, <sup>3</sup> SK Materials Performance
FA1-B-3 09:45-10:00	<b>Multi Patterning Technique for Small Pitch of Logic Interconnection</b> Chanhoo Park, Minkwon Choi, Hyejun Jin, Jeong Hoon Ahn, and Jong-Ho Lee Foundry Business, Samsung Electronics Co., Ltd.
초청발표 FA1-B-4 10:00-10:30	<b>At Wavelength EUV Metrology and Inspection Technologies</b> Sangsul Lee <sup>1,2</sup> , Jiho Kim <sup>1</sup> , and Geonhwa Kim <sup>1</sup> <sup>1</sup> Pohang Accelerator Laboratory, POSTECH, <sup>2</sup> Department of Semiconductor Engineering, POSTECH
FA1-B-5 10:30-10:45	<b>Shrinking Contact Hole Patterns by Resist Flow Process and Block Copolymer Technique: Simulation Study</b> Sang-Kon Kim The Faculty of Liberal Arts, Hongik University

## O. System LSI Design 분과

## [FB1-O] System LSI Design

좌장: 유호영 교수(충남대학교), 정준원 교수(숙명여자대학교)

초청발표 FB1-O-1 09:00-09:30	<b>A Key Building Block of AI Accelerator: In-memory Computing Macros</b> Dong-Jin Chang Chungnam National University
FB1-O-2 09:30-09:45	<b>Efficient Hardware Implementation of a Non-Linear Activation Function Approximation</b> ChanWoo Song, JoonSeok Kim, KyuMin Cho, and SeokHyung Kang Department of Electrical Engineering, POSTECH
FB1-O-3 09:45-10:00	<b>Space-Time Transformation을 이용한 Systolic Tensor Array 분석</b> 이동훈, 박지호, 유호영 충남대학교 전자공학과
초청발표 FB1-O-4 10:00-10:30	<b>Application of Machine Learning for Embedded Memory Circuit Design &amp; Characterization</b> Hanwool Jeong <sup>1,2</sup> <sup>1</sup> 광운대학교, <sup>2</sup> 주식회사 아티크론
FB1-O-5 10:30-10:45	<b>Programmable ALPG Architecture for High-Speed DRAM Testing</b> Saeyeon Kim, Sunyoung Park, Seoyeon Park, Eunkyung Ham, and Ji-Hoon Kim Department of Electronic and Electrical Engineering, Ewha Womans University

## J. Nano-Science &amp; Technology 분과

## [FC1-J] 2D Electronics

좌장: 김태욱 교수(전북대학교)

초청발표 FC1-J-1 09:00-09:30	<b>2D Materials beyond the Limit of 3D Bulk Semiconductors</b> Hyesung Park <sup>1,2</sup> <sup>1</sup> Department of Integrative Energy Engineering, Korea University, <sup>2</sup> Ku-Kist Graduate School of Converging Science and Technology, Korea University
FC1-J-2 09:30-09:45	<b>Monolayer MoS<sub>2</sub> Barristor with Covalently Bonded Semi-metal Contact</b> Dong-Yeong Kim <sup>1,2</sup> , Min-Yeong Choi <sup>1,2</sup> , Gun Woo Yoo <sup>1,2</sup> , Ju-Hyun Jung <sup>1,2</sup> , Gunho Moon <sup>1,3</sup> , Moon-Ho Jo <sup>1,3</sup> , and Cheol-Joo kim <sup>1,2</sup> <sup>1</sup> Center for Van der Waals Quantum Solids, IBS, <sup>2</sup> Department of Chemical Engineering, POSTECH, <sup>3</sup> Department of Materials Science and Engineering, POSTECH
FC1-J-3 09:45-10:00	<b>Anomalous Temperature Dependence of Current-Voltage Characteristics Observed in Graphene/n-Si(100) Junction</b> Jiwan Kim <sup>1</sup> , Hoon Hahn Yoon <sup>2</sup> , Wonho Song <sup>3</sup> , Junhyung Kim <sup>4</sup> , Sungchul Jung <sup>5</sup> , Eunseok Hyun <sup>1</sup> , and Kibog Park <sup>1,6</sup> <sup>1</sup> Department of Physics, UNIST, <sup>2</sup> School of Electrical Engineering and Computer Science, GIST, <sup>3</sup> LG Display, <sup>4</sup> Terrestrial & Non-Terrestrial Integrated Telecommunications Research Laboratory, ETRI, <sup>5</sup> SK hynix, <sup>6</sup> Department of Electrical Engineering, UNIST
초청발표 FC1-J-4 10:00-10:30	<b>Improving the Graphene Conductivity: Exploring Doping Techniques</b> Sukang Bae Functional Composite Materials Research Center, KIST

## F. Silicon and Group-IV Devices and Integration Technology 분과

### [FD1-F] Advanced Integration Technology

좌장: 백명현 교수(강릉원주대학교), 우성윤 교수(경북대학교)

FD1-F-1 09:00-09:15	<b>Heterogeneous 3D Vertical Inverter of MoS<sub>2</sub> nFET on Si pMOSFET Using Sequential Fabrication Process</b> Boncheol Ku <sup>1</sup> , Shanmukh Kutagulla <sup>2</sup> , Deji Akinwande <sup>2</sup> , and Changhwan Choi <sup>1</sup> <sup>1</sup> Division of Materials Science and Engineering, Hanyang University, <sup>2</sup> The Department of Electrical and Computer Engineering, The University of Texas at Austin
FD1-F-2 09:15-09:30	<b>Impact of Low-temperature Deuterium Annealing for Poly-Si Channel Thin-Film Transistors</b> Tae-Hyun Kil, Ju-Won Yeon, Hyo-Jun Park, and Jun-Young Park Chungbuk National University
FD1-F-3 09:30-09:45	<b>그린 레이저를 이용한 모놀리식 3D 소자 제작 공정에서 상부 게이트 버퍼층 삽입을 통한 MOSFET 성능 개선</b> 박영근, 정재중, 김희태, 김성호, 김동빈, 추준홍, 강창연, 조병진 한국과학기술원 전기 및 전자공학부
FD1-F-4 09:45-10:00	<b>Simulation of Monolithic CFET Using In-house TCAD Process Emulator</b> Seung-Woo Jung, In Ki Kim, Kwang-Woon Lee, and Sung-Min Hong School of Electrical Engineering and Computer Science, GIST
FD1-F-5 10:00-10:15	<b>Numerical Simulation of Bottom Dielectric Isolated (BDI) Forksheet Field Effect Transistor (FSFET) with In-House TCAD Process Emulator and Device Simulator</b> In Ki Kim and Sung-Min Hong School of Electrical Engineering and Computer Science, GIST
FD1-F-6 10:15-10:30	<b>Monolithic 3-dimensional Static Random Access Memory Array Cell Consisting of Feedback Field-effect Transistor for Memory System</b> Jong Hyeok Oh and Yun Seop Yu Major of ICT & Robotics Engineering, Hankyong National University
FD1-F-7 10:30-10:45	<b>Thickness Scaling of Ferroelectric HfZrO<sub>2</sub> and Its Reliability on Germanium Substrate</b> Jai-Youn Jeong <sup>1,2</sup> , Changhwan Shin <sup>2</sup> , and Jae-Hoon Han <sup>1</sup> <sup>1</sup> Center for Opto-electronic Materials and Devices, KIST, <sup>2</sup> Device and Circuit Laboratory, Korea University



N. VLSI CAD 분과

[FE1-N] VLSI CAD to Future Technologies

좌장: 송대건 교수(경북대학교), 현대준 교수(세종대학교)

FE1-N-1 09:00-09:15	<b>A Novel Design of 8T Ternary SRAM for Low Power</b> Jihyeong Yun and Sunmean Kim School of Electronic and Electrical Engineering, Kyungpook National University
FE1-N-2 09:15-09:30	<b>High-throughput PIM (Processing in-memory) for DRAM Using Bank-level Pipelined Architecture</b> Hyunsoo Lee <sup>1</sup> , Hyundong Lee <sup>1</sup> , Minseung Shin <sup>2</sup> , Gyuri Shin <sup>2</sup> , Sumin Jeon <sup>2</sup> , and Taigon Song <sup>1,2</sup> <sup>1</sup> School of Electronic and Electrical Engineering, Kyungpook National University, <sup>2</sup> School of Electronics Engineering, Kyungpook National University
FE1-N-3 09:30-09:45	<b>Mixed-Vth 셀을 활용한 누설전력 최적화 알고리즘</b> 안진일 <sup>1</sup> , 김경창 <sup>2</sup> , 현대준 <sup>1</sup> <sup>1</sup> 세종대학교, <sup>2</sup> 청주대학교
FE1-N-4 09:45-10:00	<b>A Novel Ternary Flip-Flop for Low Area Overhead Ternary Scan Design</b> Hayeon Lee and Sunmean Kim School of Electronic and Electrical Engineering, Kyungpook National University
FE1-N-5 10:00-10:15	<b>GPFGCN : General-purpose Computing on High-speed and Fully-optimized GCN Accelerator</b> Minseok Han and Taigon Song School of Electronic and Electrical Engineering, Kyungpook National University
FE1-N-6 10:15-10:30	<b>Automated Bitstream Analysis Method for FPGA Reverse Engineering</b> Mannhee Cho <sup>1</sup> , Dongchan Lee <sup>2</sup> , Sanghyun Lee <sup>2</sup> , Youngmin Kim <sup>2</sup> , and Hyung-Min Lee <sup>1</sup> <sup>1</sup> Korea University, <sup>2</sup> Hongik University
FE1-N-7 10:30-10:45	<b>타이밍 제약조건을 고려한 전력분배망 최적화</b> 송정식, 오제영, 현대준 세종대학교 반도체시스템공학과

## I. MEMS &amp; Sensors Systems 분과

## [FF1-I] Recent Advances in MEMS

좌장: 박윤석 교수(경희대학교), 유재영 교수(성균관대학교)

초청발표 FF1-I-1 09:00-09:30	<b>3D Electrode-Based MEMS Sensors for Biomanufacturing and Biomedical Applications</b> Hyun Soo Kim Kwangwoon University
초청발표 FF1-I-2 09:30-10:00	<b>Photonic FPGA on Silicon Photonic MEMS</b> Sangyoon Han and Min Gi Lim DGIST
FF1-I-3 10:00-10:15	<b>Efficiency Improvement of Ternary Organic Photovoltaic for All-day Operation under Various Light Sources</b> Se Lim Han <sup>1</sup> , Hyeonjeong Choi <sup>1</sup> , Joo Yeong Kim <sup>2</sup> , Swarup Biswas <sup>1</sup> , and Hyeok Kim <sup>1</sup> <sup>1</sup> School of Electrical and Computer Engineering, University of Seoul, <sup>2</sup> Department of Intelligent Semiconductor Engineering, University of Seoul
FF1-I-4 10:15-10:30	<b>Transfer Technology for Integrating High-Quality Single Crystal Relaxor-Ferroelectric Oxide on Flexible Si</b> Min-Seok Kim <sup>1,2</sup> , Ruiguang Ning <sup>1</sup> , Ho Won Jang <sup>2</sup> , and Seung-Hyub Baek <sup>1</sup> <sup>1</sup> Electronic Materials Research Center, KIST, <sup>2</sup> Department of Materials Science and Engineering, Research Institute of Advanced Materials, Seoul National University
FF1-I-5 10:30-10:45	<b>Metal-Oxide Semiconductors for Chemiresistive-Type Gas Sensors Operating at Room Temperature</b> Sang-Joon Park and Tae-Jun Ha Department of Electronic Materials Engineering, Kwangwoon University

## K. Memory (Design &amp; Process Technology) 분과

## [FG1-K] Process and Modeling of Memory

좌장: 성석강 마스터(삼성전자), 김시준 교수(강원대학교)

<p>초청발표 FG1-K-1 09:00-09:30</p>	<p><b>Device Simulation of Phase-change and Resistive Memories by Modeling Mesoscale Behaviors of Active Materials</b> Dongmyung Jung, Chanhoo Park, Yechan Kim, Hwanwook Lee, Sagar Khot, and Yongwoo Kwon Hongik University</p>
<p>FG1-K-2 09:30-09:45</p>	<p><b>Analysis of Conduction Mechanism and Stress-induced Dielectric Leakage Current in 1x-nm DRAM Cell Capacitor for Cryogenic Memory Operation</b> Soohong Eo<sup>1</sup>, Sangwon Lee<sup>1</sup>, Jingyu Park<sup>1</sup>, Seonhaeng Lee<sup>2</sup>, and Dae Hwan Kim<sup>1</sup> <sup>1</sup>School of Electrical Engineering, Kookmin University, <sup>2</sup>Memory Division, Samsung Electronics Co., Ltd.</p>
<p>FG1-K-3 09:45-10:00</p>	<p><b>Realization of Ultra-Low Leakage Current (<math>\sim 10^{-18}</math>A/<math>\mu</math>m) in CVD Grown Monolayer MoS<sub>2</sub> 1T1C DRAM Using Semimetal Bismuth Contact</b> Jisoo Seok<sup>1</sup>, Jae Eun Seo<sup>1</sup>, and Jiwon Chang<sup>1,2</sup> <sup>1</sup>Department of Materials Science and Engineering, Yonsei University, <sup>2</sup>Department of System Semiconductor Engineering, Yonsei University</p>
<p>FG1-K-4 10:00-10:15</p>	<p><b>3D Stackable Vertical-Sensing Electrochemical Random-Access Memory Using AP-PECVD-Grown WS<sub>2</sub> Electrode for Neuromorphic Application</b> Kyumin Lee<sup>1</sup>, Seungkwon Hwang<sup>1,2</sup>, Dongmin Kim<sup>1</sup>, Jongwon Yoon<sup>2</sup>, Jung-Dae Kwon<sup>2</sup>, Yonghun Kim<sup>2</sup>, and Hyunsang Hwang<sup>1</sup> <sup>1</sup>Center for Single Atom-Based Semiconductor Device and the Department of Materials Science and Engineering, POSTECH, <sup>2</sup>Department of Energy and Electronic Materials, Nanosurface Materials Division, KIMS</p>
<p>FG1-K-5 10:15-10:30</p>	<p><b>Modeling the Valence Change Mechanism and Drift Behavior of Oxygen Vacancies in HfO<sub>2</sub>-Based Interlayer Memristor: A Simulation Approach</b> Eun Young Kim, Juseong Park, Woojoon Park, Woon Hyung Cheong, and Kyung Min Kim KAIST</p>
<p>FG1-K-6 10:30-10:45</p>	<p><b>Investigation of Hot Carrier Degradation of 1x-nm DRAM Peripheral PMOS Transistors for Cryogenic Memory Applications</b> Ha Young Bang<sup>1</sup>, Hee Jun Lee<sup>1</sup>, Jingyu Park<sup>1</sup>, Seonhaeng Lee<sup>2</sup>, and Dae Hwan Kim<sup>1</sup> <sup>1</sup>School of Electrical Engineering, Kookmin University, <sup>2</sup>Memory Division, Samsung Electronics Co., Ltd.</p>

## U. Bio-Medical 분과

## [FH1-U] Advanced Biomedical Integrated Circuits and Systems

좌장: 이정협 교수(DGIST), 송민영 교수(DGIST)

초청발표 FH1-U-1 09:00-09:30	<b>An Impedance-measurement IC Achieving Wide Frequency Range and High Throughput for Real-time Biomedical Applications</b> Soon-Jae Kweon The Catholic University of Korea
초청발표 FH1-U-2 09:30-10:00	<b>CMOS Integrated Circuits for High-density Multi-functional Neural Interface</b> Changhyuk Lee <sup>1,2</sup> <sup>1</sup> Brain Science Institute, KIST, <sup>2</sup> Institute for Conversions, Sungkyunkwan University
FH1-U-3 10:00-10:15	<b>Wireless System Miniaturization Solutions for Ingestible Sensors</b> Chansoo Park and Minyoung Song DGIST
FH1-U-4 10:15-10:30	<b>A Fully Integrated Wireless Stimulator SoC for Addressable Cortical Microimplant</b> Chae-Eun Lee <sup>1</sup> , Joonyoung Lim <sup>2</sup> , and Yoon-kyu Song <sup>2</sup> <sup>1</sup> Department of Transdisciplinary Studies, Seoul National University, <sup>2</sup> Department of Applied Bioengineering, Seoul National University
FH1-U-5 10:30-10:45	<b>A 2<sup>nd</sup>-Order <math>\Delta^2 - \Delta\Sigma</math> Modulation Based Current Sensing Front-End in Energy and Area Efficient form Factor with Dual PWM Current DAC</b> Jee-Ho Park, Ji-Hyoung Cha, and Seong-Jin Kim UNIST

## D. Thin Film Process Technology 분과

## [F11-D] Atomic Layer Deposition - I

좌장: 엄태용 선임(한국화학연구원), 송봉근 교수(홍익대학교)

<p>초청발표 F11-D-1 09:00-09:30</p>	<p><b>Pt Thin Films by Atomic Layer Deposition Using Dimethyl(N,N-Dimethyl-3-Buten-1-Amine-N) Platinum and O<sub>2</sub> Reactant towards Semiconductor Application</b> Woo-Jae Lee Department of Nanotechnology Engineering, Pukyong National University</p>
<p>F11-D-2 09:30-09:45</p>	<p><b>Growth of Rutile c-axis Oriented TiO<sub>2</sub> Thin-films with Ultralow Equivalent Oxide Thickness and Leakage Currents</b> Taikyu Kim<sup>1</sup>, Jihoon Jeon<sup>1,2</sup>, Myungsu Jang<sup>1,2</sup>, and Seong Keun Kim<sup>1,2</sup> <sup>1</sup>Electronic Materials Research Center, KIST, <sup>2</sup>KU-KIST Graduate School of Converging Science and Technology, Korea University</p>
<p>F11-D-3 09:45-10:00</p>	<p><b>Improving Performance of TiO<sub>2</sub>/ZrO<sub>2</sub>/TiO<sub>2</sub> Laminated Capacitor by Layer-by-layer Phase Control Using Atomic Layer Annealing</b> Geongu Han<sup>1</sup>, Kyoungjae Ju<sup>2</sup>, Chanwook Choi<sup>2</sup>, Hyong June Kim<sup>3</sup>, and Jihwan An<sup>2,3</sup> <sup>1</sup>Department of Manufacturing Systems and Design Engineering, Seoul National University of Science and Technology, <sup>2</sup>Department of Mechanical Engineering, POSTECH, <sup>3</sup>Institute of Energy and Environment, Seoul National University of Science and Technology</p>
<p>F11-D-4 10:00-10:15</p>	<p><b>The Effect of Process Pressure on Improving Resistivity of Ru Thin Films Deposited by Atomic Layer Deposition</b> Na-Gyeong Kang, Min-Ji Ha, and Ji-Hoon Ahn Department of Materials Science and Chemical Engineering, Hanyang University</p>
<p>F11-D-5 10:15-10:30</p>	<p><b>Thermal Atomic Layer Deposition of Ru-incorporated MoC<sub>x</sub> Films as Cu Diffusion Barrier and Seed Layer</b> Ji Sang Ahn and Jeong Hwan Han Department of Materials Science and Engineering, Seoul National University of Science and Technology</p>
<p>F11-D-6 10:30-10:40</p>	<p><b>MoO<sub>2</sub> Film Fabrication via Atomic Layer Deposition with Mo(IV) Precursor and Oxygen and Ozone Reactants for DRAM Applications</b> Ara Yoon, Hae Lin Yang, Sanghoon Lee, and Jin-Seong Park Division of Materials Science and Engineering, Hanyang University</p>

## A. Interconnect &amp; Package 분과

## [FJ1-A] Advanced Packaging II

좌장: 김주영 교수(울산과학기술원), 안상훈 수석(삼성전자)

FJ1-A-1 09:00-09:15	<b>Electrochemical Study on Better Controllability of Cu Pad Topography in Cu/Ti CMP</b> Seonwoo Go <sup>1</sup> , Yoonji Ra <sup>1</sup> , Jenasree Hazarika <sup>1</sup> , Jum-Yong Park <sup>2</sup> , Un-Byoung Kang <sup>2</sup> , Tae-Gon Kim <sup>1</sup> , and Jin-Goo Park <sup>1</sup> <sup>1</sup> Department of Materials Science and Chemical Engineering, Hanyang University ERICA, <sup>2</sup> AVP Process Development Team, Samsung Electronics Co., Ltd.
FJ1-A-2 09:15-09:30	<b>Optimization of Chemical Mechanical Polishing (CMP) for Die-to-Wafer Hybrid Bonding and the Impact</b> Yeon Ju Kim, Ji Hun Kim, and Jong Kyung Park Department of Semiconductor Engineering, Seoul National University of Science and Technology
FJ1-A-3 09:30-09:45	<b>3차원 반도체 패키지를 위한 저온 Cu-Cu 접합용 CuAg 합금 소재 및 신뢰성 평가</b> 이승혁, 전주원, 마지수, 이용규, 김병준 한국공학대학교 신소재공학과
FJ1-A-4 09:45-10:00	<b>Ar Carrier Gas SiN Film Deposition Process Optimization for WLPKG Chip Warpage Control</b> Intae Whoang, Byung Yoon Lim, Jin Pyung Kim, Kijun Bang, and Seunghee Jo SK hynix
FJ1-A-5 10:00-10:15	<b>The Impact of Surface Treatment on SiO<sub>2</sub> Bonding for Cu/SiO<sub>2</sub> Hybrid Bonding</b> Injoo Kim <sup>1</sup> , Siye Lee <sup>2</sup> , Wookyung Lee <sup>2</sup> , and Sungdong Kim <sup>2</sup> <sup>1</sup> Department of Mechanical Design and Robot Engineering, Seoul National University of Science and Technology, <sup>2</sup> Department of Mechanical System Design Engineering, Seoul National University of Science and Technology
FJ1-A-6 10:15-10:30	<b>Machine Learning-Based MI Image Classification for A.I Semiconductor Production</b> Sung Hyun Yoon and Sang Yup Lee SK hynix
FJ1-A-7 10:30-10:45	<b>Study on the Chemical Durability and Defect Reduction Effects of Ceramic-Based CVD CMP Conditioners</b> Yeon-Je Gye <sup>1</sup> , Joo-Han Lee <sup>2</sup> , Sun-Gyu Park <sup>2</sup> , Yu-Jeong Jin <sup>2</sup> , Jin-Goo Park <sup>1</sup> , and Tae-Gon Kim <sup>1</sup> <sup>1</sup> Department of Materials Science and Chemical Engineering, Hanyang University ERICA, <sup>2</sup> Technical Development Electronics BU, EHWA DIAMOND INDUSTRIAL CO. LTD.

## G. Device &amp; Process Modeling, Simulation and Reliability 분과

## [FK1-G] Device Characterization &amp; Modeling I

좌장: 우지용 교수(경북대학교), 김성호 교수(세종대학교)

<p>초청발표 FK1-G-1 09:00-09:30</p>	<p><b>Physical Modeling and Evaluation of 3D Memory: Interlayer Guarding Effects</b> Jo-hak Jeong<sup>1</sup>, Dongkyu Lee<sup>1</sup>, Jin-Taek Lee<sup>1</sup>, Ho Sung Lee<sup>1</sup>, Sang Jun Hwang<sup>1</sup>, Krishna Moorthy Ponnusamy<sup>1,2</sup>, Hyun-Sik Jang<sup>1</sup>, S. Chandramohan<sup>2</sup>, and Keun Heo<sup>1</sup> <sup>1</sup>School of Semiconductor Science &amp; Technology, Jeonbuk National University, <sup>2</sup>Department of Physics and Nanotechnology, SRM Institute of Science and Technology</p>
<p>FK1-G-2 09:30-09:45</p>	<p><b>Carrier Transport in In<sub>0.8</sub>Ga<sub>0.2</sub>As HEMTs at Cryogenic Temperature from the Transconductance Modeling Technique in Saturation</b> Min-Seo Yu<sup>1</sup>, Ji-Hoon Yoo<sup>1</sup>, In-Geun Lee<sup>1</sup>, Jae-Hak Lee<sup>1</sup>, Kyoungsoon Yang<sup>2</sup>, and Dae-Hyun Kim<sup>1</sup> <sup>1</sup>Kyungpook National University, <sup>2</sup>KAIST</p>
<p>FK1-G-3 09:45-10:00</p>	<p><b>Extraction of Individual Contact Resistance and Threshold Voltage in Carbon Nanotube Thin-film Transistors</b> Jun-Ho Jang<sup>1</sup>, Hanbin Lee<sup>1</sup>, Jeonghee Ko<sup>1</sup>, Yulim An<sup>1</sup>, Hyo-In Yang<sup>1</sup>, GyeongSu Min<sup>1</sup>, So Jeong Park<sup>1</sup>, Jeong Yeon Im<sup>1</sup>, Dong Myong Kim<sup>1</sup>, Dae Hwan Kim<sup>1</sup>, Jong-Ho Bae<sup>1</sup>, Min-Ho Kang<sup>2</sup>, and Sung-Jin Choi<sup>1</sup> <sup>1</sup>School of Electrical Engineering, Kookmin University, <sup>2</sup>Department of Nano-process, NNFC</p>
<p>FK1-G-4 10:00-10:15</p>	<p><b>Virtual-Source Based Modeling of Charge-dependent Source Resistance and Drain Current of In<sub>x</sub>Ga<sub>1-x</sub>As MBCFETs</b> Su-Min Choi<sup>1</sup>, Ji-Hoon Yoo<sup>1</sup>, Hyeon-Bhin Jo<sup>1</sup>, In-Geun Lee<sup>1</sup>, Hyuk-Min Kwon<sup>2</sup>, Takuya Tsutsumi<sup>3</sup>, Hiroki Sugiyama<sup>3</sup>, Hideaki Matsuzaki<sup>3</sup>, Jae-Hak Lee<sup>1</sup>, and Dae-Hyun Kim<sup>1</sup> <sup>1</sup>Kyungpook National University, <sup>2</sup>Polytechnics, <sup>3</sup>NTT Co.</p>
<p>FK1-G-5 10:15-10:30</p>	<p><b>Experimental Demonstration of Tunable Synchronization in Coupled NbO<sub>x</sub> Artificial Neuron Systems for Neuromorphic Pattern Recognition</b> Hyun Wook Kim, Eunryeong Hong, Nayeon Kim, Seonuk Jeon, and Jiyong Woo School of Electronic and Electrical Engineering, Kyungpook National University</p>
<p>FK1-G-6 10:30-10:45</p>	<p><b>Investigating Process-Dependent Variations in Amorphous IGZO TFTs for 2T-DRAM Application through Monochromatic Photonic C-V Analysis</b> Hyunwook Jeong, Junseong Park, Ha-Neul Lee, Yubin Choi, Sung-Jin Choi, Dong Myong Kim, Dae Hwan Kim, and Jong-Ho Bae School of Electrical Engineering, Kookmin University</p>

[FL1-Q] Metrology, Inspection, and Yield Enhancement II

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

<p>초청발표 FL1-Q-1 09:00-09:30</p>	<p><b>반도체 계측 공정에서 영상 처리의 활용</b> 이성일 DRAM Metrology Technology Team, Manufacturing Technology, SK hynix</p>
<p>초청발표 FL1-Q-2 09:30-10:00</p>	<p><b>A Zerogap Strain Sensor</b> Mahsa Haddadi Moghaddam<sup>1,2</sup> and Dai-Sik Kim<sup>1,2,3,4</sup> <sup>1</sup>Department of Physics, UNIST, <sup>2</sup>Quantum Photonics Institute, UNIST, <sup>3</sup>Center for Angstrom Scale Electromagnetism, UNIST, <sup>4</sup>Department of Physics and Astronomy, Seoul National University</p>
<p>FL1-Q-3 10:00-10:15</p>	<p><b>Advancing Semiconductor Characterization: Dual Rotating Polarizers Ellipsometry</b> Junho Choi, Jongkyoon Park, Sukhyun Choi, Yong Jai Cho, and Chegal Won Advanced Instrumentation Institute, KRISS</p>
<p>FL1-Q-4 10:15-10:30</p>	<p><b>AFM을 이용한 EUV Photoresist 프로파일 모니터링</b> 김해리, 권광민, 최규진, 김규영 기반기술센터, 선형 Inspection 기술, SK hynix</p>
<p>FL1-Q-5 10:30-10:45</p>	<p><b>In-situ Monitoring of Contaminant Particles Generated during PECVD Process Using a Particle Beam Mass Spectrometer</b> Seungjae Lee<sup>1</sup>, Junggil Na<sup>2</sup>, Kyunghwan Jung<sup>2</sup>, and Taesung Kim<sup>1,3</sup> <sup>1</sup>Mechanical Engineering, Sungkyunkwan University, <sup>2</sup>JJ CNS, <sup>3</sup>SKKU Advanced Institute of Nano Technology (SAINT), Sungkyunkwan University</p>



## B. Patterning (Lithography &amp; Etch Technology) 분과

## [FA2-B] Lithography and photoresist II

좌장: 이상설 박사(POSTECH), 김진곤 박사(SKMP)

초청발표 FA2-B-1 13:45-14:15	Hybrid Multilayer EUV Dry Photoresist for 1.5 nm Technology Node Myung Mo Sung Hanyang University
FA2-B-2 14:15-14:30	Single EUV Patterning Margin Improvement Minkwon Choi, Hyejun Jin, Jeonghoon Ahn, and Jongho Lee Foundry Business, Samsung Electronics Co., Ltd.
FA2-B-3 14:30-14:45	EUV 펠리클의 Emissivity 에 대한 다층 Emission 구조의 영향 연구 강영우 <sup>1,2</sup> , 김하늘 <sup>1,2</sup> , 김원진 <sup>1,2</sup> , 김정연 <sup>1,2</sup> , 박영욱 <sup>1,2</sup> , 안진호 <sup>1,2</sup> <sup>1</sup> 한양대학교 신소재공학과, <sup>2</sup> EUV-IUCC
FA2-B-4 14:45-15:00	Fizeau Interferometry 를 이용한 EUV Attenuated Phase Shift Mask 평가 기술 연구 이동기 <sup>1,3</sup> , 문승찬 <sup>2,3</sup> , 홍준호 <sup>1,3</sup> , 안진호 <sup>1,2,3</sup> <sup>1</sup> 한양대학교 신소재공학과, <sup>2</sup> 한양대학교 나노반도체공학과, <sup>3</sup> EUV-IUCC
초청발표 FA2-B-5 15:00-15:30	불소화 주석산화물 극자외선 레지스트 개발 이진균 <sup>1</sup> , 구예진 <sup>1</sup> , 안형주 <sup>1</sup> , 김지호 <sup>2</sup> , 이상설 <sup>2</sup> , 이서현 <sup>3</sup> , 정병준 <sup>3</sup> , 고차원 <sup>4</sup> , 니시츠네히로 <sup>4</sup> , 김현우 <sup>4</sup> <sup>1</sup> 인하대학교 고분자공학과, <sup>2</sup> 포항공대 가속기연구소, <sup>3</sup> 서울시립대학교 신소재공학과, <sup>4</sup> Samsung Electronics Co., Ltd.

## H. Display and Imaging Technologies 분과

### [FB2-H] Display and Imaging Technologies IV

좌장: 전우진 교수(경희대학교)

FB2-H-1 13:45-14:00	<b>Development of High-Performance <math>\text{In}_2\text{O}_3</math>-TFTs Using Atmospheric Pressure Spatial ALD toward High Throughput in Flexible Device Industry</b> Chi-Hoon Lee, Kwang Su Yoo, Dong-Gyu Kim, and Jin-Seong Park Division of Materials Science and Engineering, Hanyang University
FB2-H-2 14:00-14:15	<b>Improvement in Negative-Bias-Illumination-Stress Stability in Vertical TFTs Using ALD-IGZO Bilayer Channel Configuration</b> Ji-Won Kang <sup>1</sup> , Yeong-Ha Kwon <sup>2</sup> , Nak-Jin Seong <sup>2</sup> , Kyu-Jeong Choi <sup>2</sup> , Chi-Sun Hwang <sup>3</sup> , Jong-Heon Yang <sup>3</sup> , and Sung-Min Yoon <sup>1</sup> <sup>1</sup> Kyung Hee University, <sup>2</sup> NCD Co. Ltd, <sup>3</sup> ETRI
FB2-H-3 14:15-14:30	<b>Enhancing Performance of Delta Conductance (Delta-C) Characteristics Utilizing Heterojunction Structure for Multi-Valued Logic Application</b> Junho Lee, Chanwoo Jeong, and Jaekyoung Jeong Department of Electronic Engineering, Hanyang University
FB2-H-4 14:30-14:45	<b>Eco-friendly Low Operation Voltage Organic Thin Film Transistors</b> MiRiNae Lee <sup>1</sup> , Min Jong Lee <sup>2</sup> , Swarup Biswas <sup>1</sup> , Jae Won Shim <sup>2</sup> , and Hyeok Kim <sup>1</sup> <sup>1</sup> University of Seoul, <sup>2</sup> Korea University
FB2-H-5 14:45-15:00	<b>Mitigating Short-channel Effects for Nanoscale IGZO Transistor by Suppressing Oxygen Diffusion into Metal Utilizing Ultrathin Dielectric Barrier</b> Juyoung Yun <sup>1</sup> , Hyuk Park <sup>1</sup> , Dae-Hwan Kang <sup>2,3</sup> , and Yoonyoung Chung <sup>1,2,3</sup> <sup>1</sup> Department of Electrical Engineering, POSTECH, <sup>2</sup> Department of Semiconductor Engineering, POSTECH, <sup>3</sup> Center for Semiconductor Technology Convergence, POSTECH
FB2-H-6 15:00-15:15	<b>Control of Subthreshold Gate Swing in a-IGZO Transistors through a during Plasma-Enhanced Atomic Layer Deposition</b> Seong Hun Yoon and Jae Kyeong Jeong Department of Display Science and Engineering, Hanyang University
FB2-H-7 15:15-15:30	<b>Reliability Analysis of SU-8 Passivation on Biocompatible Parylene-Based Flexible PBTFT Organic Thin-Film Transistor</b> Ah-Hyun Hong and Dong-Wook Park University of Seoul

## J. Nano-Science &amp; Technology 분과

## [FC2-J] Nano Devices

좌장: 공수현 교수(고려대학교), 금현성 교수(연세대학교)

초청발표 FC2-J-1 13:45-14:15	<b>In-Depth Analysis of Structural Effects on Polarization Switching of Amorphous InGaZnOx Ferroelectric Thin-Film Transistor</b> Hyojin Yang, Sejun Park, Sanghyuk Yun, Haesung Kim, Ha Neul Lee, and Jong-Ho Bae School of Electrical Engineering, Kookmin University
FC2-J-2 14:15-14:30	<b>Degradable Injectable and Tissue-conformable Soft MRI-compatible Brain-interfacing Array</b> Kyuha Park <sup>1,2</sup> , Mikyung Shin <sup>1,2</sup> , and Donghee Son <sup>1,2</sup> <sup>1</sup> Center for Neuroscience Imaging Research, IBS, <sup>2</sup> Sungkyunkwan University
FC2-J-3 14:30-14:45	<b>Utilizing the Dynamic Behavior Characteristics of Self-healing Electrodes as Memory for Skin Electronics</b> Duhwan Seong, Hyunjin Jung, and Donghee Son Department of Electrical and Computer Engineering, Sungkyunkwan University
FC2-J-4 14:45-15:00	<b>Magnetic Random-access Memory Based Physical Unclonable Functions</b> Jaimin Kang <sup>1</sup> , Donghyeon Han <sup>1</sup> , Daekyu Koh <sup>1</sup> , San Ko <sup>1</sup> , Kyungchul Lee <sup>2</sup> , Chando Park <sup>3</sup> , Jongsun Park <sup>2</sup> , Kab-Jin Kim <sup>1</sup> , Soogil Lee <sup>1</sup> , Jisung Lee <sup>4</sup> , and Byong-Guk Park <sup>1</sup> <sup>1</sup> KAIST, <sup>2</sup> Korea University, <sup>3</sup> Applied Materials, Inc., <sup>4</sup> Hyundai Motor Company
FC2-J-5 15:00-15:15	<b>Ultrathin Skin-attachable TiO<sub>2</sub> Synaptic Array Integrated with an Organic Proximity Sensor for Real-time Finger Gesture Recognition</b> Haein Cho <sup>1</sup> , Inho Lee <sup>2</sup> , Jingon Jang <sup>1</sup> , Jae-hyun Kim <sup>2</sup> , Hanbee Lee <sup>2</sup> , Sungjun Park <sup>2</sup> , and Gunuk Wang <sup>1</sup> <sup>1</sup> Korea University, <sup>2</sup> Ajou University

## F. Silicon and Group-IV Devices and Integration Technology 분과

### [FD2-F] Advanced Device Characterizations

좌장: 김명수 교수(울산과학기술원), 권지민 교수(울산과학기술원)

FD2-F-1 13:45-14:00	<b>Multivalued Negative Differential Resistance (NDR) ZnO Channel Thin Film Transistor (TFT) Integrated with Ag/HfO<sub>2</sub> Threshold Switching Device</b> Juho Sung <sup>1</sup> and Changhwan Shin <sup>2</sup> <sup>1</sup> Department of Electrical and Computer Engineering, Sungkyunkwan University, <sup>2</sup> School of Electrical Engineering, Korea University
FD2-F-2 14:00-14:15	<b>Investigation of Interface Trap Effect in Feedback Field Effect Transistor</b> Hangwook Jeong, Minseon Park, Junhyeong Lee, and Min-Woo Kwon Department of Electronic Engineering, Gangneung-Wonju National University
FD2-F-3 14:15-14:30	<b>Steep Slope Transistor with Negligible Hysteresis Achieved through Transient Negative Capacitance</b> Sangho Lee, Giuk Kim, Hunbeom Shin, Yunseok Nam, and Sanghun Jeon School of Electrical Engineering, KAIST
FD2-F-4 14:30-14:45	<b>Design and Characterization of a Double-Trench SiC MOSFET with Superb Current Rectification</b> Yu Jin Kang and Seongjae Cho Department of Electronic and Electrical Engineering, Ewha Womans University
FD2-F-5 14:45-15:00	<b>3D Analysis Methodology for Line Edge Roughness in V-NAND Structure</b> Jaehyuk Lim <sup>1</sup> and Changhwan Shin <sup>2</sup> <sup>1</sup> Department of Electrical and Computer Engineering, Sungkyunkwan University, <sup>2</sup> School of Electrical Engineering, Korea University
FD2-F-6 15:00-15:15	<b>Enhancement Thermal Performance of Drain-extended FinFETs for SOC Applications</b> Yeon Sil Yang and Jang Hyun Kim Department of Intelligence Semiconductor Engineering, Ajou University
FD2-F-7 15:15-15:30	<b>Improved Characteristics of Ag/Ni/HfO<sub>2</sub>-Based Threshold Switching Device</b> Daeyoung Chu <sup>1,2</sup> , Sanghyun Kang <sup>3</sup> , and Changhwan Shin <sup>1</sup> <sup>1</sup> School of Electrical Engineering, Korea University, <sup>2</sup> Samsung Electronics Co., Ltd., <sup>3</sup> Department of Electrical and Computer Engineering, Sungkyunkwan University

## E. Compound Semiconductors 분과

## [FE2-E] Compound Semiconductor - GaN HEMTs

좌장: 김동현 박사(한국나노기술원)

초청발표 FE2-E-1 13:45-14:15	<b>The GaN HEMT Technology for beyond 5G and Energy Applications</b> June Sik Kwak RFHIC Inc
FE2-E-2 14:15-14:30	<b><math>L_g = 50</math> nm AlGaN/GaN HEMTs on 4-inch SiC with <math>f_{max} &gt; 300</math> GHz</b> Wan-Soo Park <sup>1</sup> , Hyo-Jin Kim <sup>1</sup> , Hyeok-Jun Lee <sup>1</sup> , Sang-Kuk Kim <sup>2</sup> , Jacob Yun <sup>2</sup> , Ted Kim <sup>2</sup> , Jae-Hak Lee <sup>1</sup> , Kyounghoon Yang <sup>3</sup> , and Dae-Hyun Kim <sup>1</sup> <sup>1</sup> Kyungpook National University, <sup>2</sup> QSI, <sup>3</sup> KAIST
FE2-E-3 14:30-14:45	<b>Buffer-related Dynamic On-resistance Characteristics in AlGaN/GaN-on-Si Structures</b> Hyun-Seop Kim Kunsan National University
FE2-E-4 14:45-15:00	<b>Thermal Management of GaN HEMTs through Electro-Thermal Modeling</b> Changhwan Song <sup>1</sup> , Sukwon Choi <sup>2</sup> , and Jungwan Cho <sup>1</sup> <sup>1</sup> School of Mechanical Engineering, Sungkyunkwan University, <sup>2</sup> Department of Mechanical Engineering, The Pennsylvania State University
FE2-E-5 15:00-15:15	<b>Characterization of AlGaN/GaN HEMTs on 4-inch SiC Substrate at Cryogenic Temperature</b> Hyeok-Jun Lee <sup>1</sup> , Wan-Soo Park <sup>1</sup> , Hyo-Jin Kim <sup>1</sup> , Jae-Hak Lee <sup>1</sup> , Kyounghoon Yang <sup>2</sup> , and Dae-Hyun Kim <sup>1</sup> <sup>1</sup> Kyungpook National University, <sup>2</sup> KAIST
FE2-E-6 15:15-15:30	<b>p-GaN/p-AlGaN/AlGaN/GaN Heterojunction Field-effect Transistor with High Threshold Voltage</b> Dong Guk Kim, Jun Hyeok Yim, Min Gi Jeong, Min Kuen Lee, and Ho Young Cha School of Electronic and Electrical Engineering, Hongik University

## C. Material Growth &amp; Characterization 분과

## [FF2-C] Materials synthesis by design

좌장: 김태헌 교수(울산대학교)

초청발표 FF2-C-1 13:45-14:15	<b>Study on Oxide Materials with Combinatorial Methods</b> Seunghun Lee Department of Physics, Pukyong National University
FF2-C-2 14:15-14:30	<b>Differences in Surface Chemical Behavior and Cleaning Mechanism of Si and SiC</b> Yoonji Ra <sup>1</sup> , Juyeol Lee <sup>1</sup> , Jin-Goo Park <sup>1</sup> , Jooyoung Yang <sup>2</sup> , Tae-Uk Kim <sup>2</sup> , and Tae-Gon Kim <sup>1</sup> <sup>1</sup> Department of Materials Science and Chemical Engineering, Hanyang University ERICA, <sup>2</sup> Cleaning Development Team, SK Siltron Co., Ltd.
FF2-C-3 14:30-14:45	<b>Optimization of CVD Growth Conditions for Uniform WS<sub>2</sub> Thin-film Synthesis on a 4-inch Wafer Using a Chloride Precursor</b> Hye Seong Park <sup>1</sup> , Ta Gyu Ryu <sup>1</sup> , Ha Yeon Choi <sup>1</sup> , Hyuk Min Kwon <sup>2</sup> , and Hi Deok Lee <sup>1</sup> <sup>1</sup> Department of Electronis Engineering, Chungnam National University, <sup>2</sup> Semiconductor Convergence Campus of Korea Polytechnics College
초청발표 FF2-C-4 14:45-15:15	<b>Bottom-up Synthesis of 2D Materials for Future Electronics</b> Seok Joon Yun Department of Semiconductor, University of Ulsan
FF2-C-5 15:15-15:30	<b>그래핀/N(질소)-극성 질화갈륨(GaN)의 열화학적 안정성과 원격 에피택시</b> 최중훈, 홍영준 세종대학교 나노신소재공학과

## K. Memory (Design & Process Technology) 분과

### [FG2-K] Charge Trap Flash Memory

좌장: 우성윤 교수(경북대학교)

FG2-K-1 13:45-14:00	<b>A Fully Logic-compatible High-k Charge Trap Memory for sub-28nm Embedded Non-volatile Memory Technologies</b> Jaehun Lee, Kyongsik Yeom, Jongsung Woo, Hyunik Park, Han-Hyeong Choi, Donghwi Hwang, Minji Seo, Hwanho Ma, Jeadong Jung, Jusang Lee, Juwoon Kim, Youngcheon Jeong, Changmin Jeon, Kangho Lee, and Hyunjo Kim Samsung Foundry, Samsung Electronics Co., Ltd.
FG2-K-2 14:00-14:15	<b>Low-power Split-gate NOR Flash Cell Design and Non-ideality Analysis for Compute-in-memory</b> Chan-Gi Yook, Seung-won Lee, and Wonbo Shim Seoul National University of Science and Technology
FG2-K-3 14:15-14:30	<b>고분자 iCVD 증착 기술을 이용한 불소 도핑에 의한 a-InGaZnO 박막 트랜지스터 소자 특성 향상</b> 오승현 <sup>1</sup> , 이창현 <sup>2</sup> , 조성행 <sup>3</sup> , 김희태 <sup>1</sup> , 박정익 <sup>2</sup> , 김민주 <sup>4</sup> , 박영근 <sup>1</sup> , 정민규 <sup>5</sup> , 박세준 <sup>5</sup> , 임성갑 <sup>2</sup> , 조병진 <sup>1</sup> <sup>1</sup> 한국과학기술원 전기 및 전자공학부, <sup>2</sup> 한국과학기술원 신소재공학부, <sup>3</sup> 한국전자통신연구원 플렉시블전자소자연구실, <sup>4</sup> 단국대학교 전자전기공학부, <sup>5</sup> Samsung Electronics Co., Ltd.
FG2-K-4 14:30-14:45	<b>Augmenting the Memory Window of Charge Trap Flash through Sputtering Substrate, Bias-Induced Trap Generation</b> Hyunyoung Cho <sup>1</sup> , Seongmin Park <sup>1</sup> , and Yoonyoung Chung <sup>1,2,3</sup> <sup>1</sup> Department of Electrical Engineering, POSTECH, <sup>2</sup> Department of Semiconductor Engineering, POSTECH, <sup>3</sup> Center for Semiconductor Technology Convergence, POSTECH
FG2-K-5 14:45-15:00	<b>Improvement on Program/Erase Performance of Amorphous Indium-gallium-zinc-oxide-Based Charge Trap Memory via TCAD Simulation</b> Gyeongsu Min <sup>1</sup> , Hanbin Lee <sup>1</sup> , Yulim An <sup>1</sup> , Jeonghee Ko <sup>1</sup> , Hyo-In Yang <sup>1</sup> , So Jeong Park <sup>1</sup> , Jun-Ho Jang <sup>1</sup> , Jeong Yeon Im <sup>1</sup> , Dong Myong Kim <sup>1</sup> , Dae Hwan Kim <sup>1</sup> , Jong-Ho Bae <sup>1</sup> , Min-Ho Kang <sup>2</sup> , and Sung-Jin Choi <sup>1</sup> <sup>1</sup> School of Electrical Engineering, Kookmin University, <sup>2</sup> Department of Nano-process, NNFC
FG2-K-7 15:00-15:15	<b>Investigation of Bias Temperature Instabilities of Peripheral pMOSFET and nMOSFET in CTF-NAND Flash Memories with COP Structure for Cryogenic Memory Applications</b> Jung Rae Cho <sup>1</sup> , Jingyu Park <sup>1</sup> , Tae Jun Yang <sup>1</sup> , Seonhaeng Lee <sup>2</sup> , and Dae Hwan Kim <sup>1</sup> <sup>1</sup> School of Electrical Engineering, Kookmin University, <sup>2</sup> Memory Division, Samsung Electronics Co., Ltd.

## K. Memory (Design & Process Technology) 분과

### [FH2-K] Ferroelectric Memory I

좌장: 권용우 교수(홍익대학교), 정성엽 박사(차세대융합기술연구원)

FH2-K-1 13:45-14:00	<b>Effect of Al Dopant Distribution in HfO<sub>2</sub> Layer on Ferroelectric Switching Characteristics</b> Hyoungjin Park <sup>1</sup> , Seonuk Jeon <sup>2</sup> , Hyun Wook Kim <sup>2</sup> , Eunryeong Hong <sup>2</sup> , Nayeon Kim <sup>2</sup> , Yunsur Kim <sup>1</sup> , Hyeonsik Choi <sup>1</sup> , Jiae Jeong <sup>1</sup> , and Jiyong Woo <sup>1,2</sup> <sup>1</sup> School of Electronic Engineering, Kyungpook National University, <sup>2</sup> School of Electronic and Electrical Engineering, Kyungpook National University
FH2-K-2 14:00-14:15	<b>Novel Dual Ferroelectric Stack with Wide-range Tunable Coercive Voltage for High-density 3D FeNAND Applications</b> Jiae Jeong <sup>1</sup> , Nayeon Kim <sup>2</sup> , Hyunwook Kim <sup>2</sup> , Eunryeong Hong <sup>2</sup> , Seonuk Jeon <sup>2</sup> , Yunsur Kim <sup>1</sup> , Hyeonsik Choi <sup>1</sup> , Hyoungjin Park <sup>1</sup> , and Jiyong Woo <sup>1,2</sup> <sup>1</sup> School of Electronic Engineering, Kyungpook National University, <sup>2</sup> School of Electronic and Electrical Engineering, Kyungpook National University
FH2-K-3 14:15-14:30	<b>La<sub>2</sub>O<sub>3</sub> 중간층을 이용한 Ferroelectric FET 의 성능 및 내구성 개선</b> 강창연, 추준홍, 김성호, 박영근, 김승훈, 조병진 한국과학기술원 전기 및 전자공학부
FH2-K-4 14:30-14:45	<b>Enhancing Non-Volatile Memory Performance: Dual Ferroelectric Gate Field-Effect Transistors with Recessed Channel Geometry</b> Simin Chen <sup>1</sup> , Dae-Hwan An <sup>2</sup> , Seong Ui An <sup>1</sup> , Tae Hyeon Noh <sup>1</sup> , and Younghyun Kim <sup>1</sup> <sup>1</sup> Department of Photonics and Nanoelectronics, BK21 FOUR ERICA-ACE Center, Hanyang University, <sup>2</sup> Center for Opto-electronic Materials and Devices, KIST
FH2-K-5 14:45-15:00	<b>Demonstration of Programmable Low-Temperature Hf-Based Ferroelectric Amorphous Oxide Semiconductor FET for Emerging Memory Applications</b> Tae Hyeon Noh <sup>1</sup> , Dae-Hwan Ahn <sup>2</sup> , Hyo-Bae Kim <sup>3</sup> , Taewon Jin <sup>1</sup> , Seoung min Park <sup>1</sup> , Seong Ui An <sup>1</sup> , Xinkai Sun <sup>1</sup> , Simin Chen <sup>1</sup> , Ji-Hoon Ahn <sup>3</sup> , and Younghyun Kim <sup>1</sup> <sup>1</sup> Department of Photonics and Nanoelectronics, BK21 FOUR ERICA-ACE Center, Hanyang University, <sup>2</sup> Center for Opto-electronic Materials and Devices, KIST, <sup>3</sup> Department of Materials Science and Chemical Engineering, Hanyang University
FH2-K-6 15:00-15:15	<b>Analysis of Hydrogen Effect on Ferroelectric (Hf,Zr)O<sub>2</sub> Thin Films during Atomic Layer Deposition Process</b> Seongbin Park <sup>1</sup> , Seungbin Lee <sup>1</sup> , Hye Ryeon Park <sup>1</sup> , Jongmug Kang <sup>1</sup> , Juntak Jeong <sup>1</sup> , Yeseo Choi <sup>1</sup> , Jin-Hyun Kim <sup>2</sup> , Minjong Lee <sup>2</sup> , Jiyoung Kim <sup>2</sup> , and Si Joon Kim <sup>1</sup> <sup>1</sup> Kangwon National University, <sup>2</sup> The University of Texas at Dallas
FH2-K-7 15:15-15:30	<b>The Effect of Oxygen Vacancy Layer on Memory Performance of Hafnia Ferroelectric Tunnel Junction</b> Junghyeon Hwang, Chaeheon Kim, Hunbeom Shin, and Sanghun Jeon School of Electrical Engineering, KAIST



### [FI2-D] Atomic Layer Deposition - II

**좌장:** 김성근 책임(한국과학기술연구원), 최병준 교수(서울과학기술대학교)

<p><b>FI2-D-1</b> 13:45-14:00</p>	<p><b>Modulation of Atomic Layer Deposition for Improvement of Conformality on High Aspect Ratio Substrates</b> Jiwon Kim<sup>1</sup>, Changbong Yeon<sup>2</sup>, Deok-Hyeon Cho<sup>2</sup>, Jaesun Jung<sup>2</sup>, and Bonggeun Shong<sup>1</sup> <sup>1</sup>Hongik University, <sup>2</sup>Soulbrain</p>
<p><b>FI2-D-2</b> 14:00-14:15</p>	<p><b>Theoretical Screening of Tungsten Precursors toward Inherent Area-selective Atomic Layer Deposition of WO<sub>3</sub> between Nitride Substrates</b> Su-Jin Kwon, Junhui Choi, Ju Hyeon Jung, and Bonggeun Shong Chemical Engineering, Hongik University</p>
<p><b>FI2-D-3</b> 14:15-14:30</p>	<p><b>Enhanced Deposition Selectivity of High-k Dielectrics by Vapor-Dosed Self-Assembled Monolayer Inhibitors Combined with Selective Lift-Off</b> Jeong-Min Lee and Woo-Hee Kim Department of Materials Science and Chemical Engineering, Hanyang University</p>
<p><b>FI2-D-4</b> 14:30-14:45</p>	<p><b>Theoretical Analysis on the Influence of Ge Precursors toward Atomic Layer Deposition of Germanium Tellurides</b> Hyeon Cho and Bonggeun Shong Hongik University</p>
<p><b>FI2-D-5</b> 14:45-15:00</p>	<p><b>Growth Characteristics of Plasma-Enhanced Atomic Layer Deposition of SiN<sub>x</sub> by BTBAS and BDEAS with a Very High Frequency Plasma Source</b> Young-Jin Lim<sup>1</sup>, Min-Jeong Rhee<sup>1</sup>, Ngoc Le Trinh<sup>2</sup>, Han-Bo-Ram Lee<sup>2</sup>, and Il-Kwon Oh<sup>1</sup> <sup>1</sup>Department of Intelligence Semiconductor Engineering, Ajou University, <sup>2</sup>Department of Materials Science and Engineering, Incheon National University</p>
<p><b>FI2-D-6</b> 15:00-15:15</p>	<p><b>Temperature-dependent Surface Reactions in Atomic Layer Deposition of Titanium Nitride</b> Jae Min Jang, Ju Hyeon Jung, and Bonggeun Shong Hongik University</p>
<p><b>FI2-D-7</b> 15:15-15:30</p>	<p><b>Theoretical Analysis of Niobium Precursors toward Inherent Area-selective Atomic Layer Deposition between Nitride Substrates</b> Junhui Choi, Miso Kim, and Bonggeun Shong Hongik University</p>

D. Thin Film Process Technology **분과****[FJ2-D] Thin Film Transistors - I**

**좌장:** 안지훈 교수(한양대학교), 백인환 교수(인하대학교)

<p><b>FJ2-D-1</b> 13:45-14:00</p>	<p><b>Performance Enhancement of In-Ga-Zn-O Vertical-channel TFTs with a Channel Length of 40 nm via Al<sub>2</sub>O<sub>3</sub> Spacer Engineering</b> Chae-Eun Oh<sup>1</sup>, Young-Ha Kwon<sup>2</sup>, Nak-Jin Seong<sup>2</sup>, Kyu-Jeong Choi<sup>2</sup>, and Sung-Min Yoon<sup>1</sup> <sup>1</sup>Kyung Hee University, <sup>2</sup>NCD Co., Ltd.</p>
<p><b>FJ2-D-2</b> 14:00-14:15</p>	<p><b>Back-End-of-Line Compatible Al<sub>2</sub>O<sub>3</sub> Passivated p-Type Copper(I) Oxide Thin Film Transistors with Enhanced Current On/Off Ratio</b> Seohyeon Park<sup>1</sup>, Jaewook Yoo<sup>1</sup>, Hyeonjun Song<sup>1</sup>, Soyeon Kim<sup>1</sup>, Hongseung Lee<sup>1</sup>, Seongbin Lim<sup>1</sup>, Minah Park<sup>1</sup>, Peide D. Ye<sup>2</sup>, and Hagyoul Bae<sup>1</sup> <sup>1</sup>Jeonbuk National University, <sup>2</sup>Purdue University</p>
<p><b>FJ2-D-3</b> 14:15-14:30</p>	<p><b>IGZO 2T0C DRAM with Normally-off Operation Using Interfacial Dipole</b> Suwon Seong<sup>1</sup>, Seongmin Park<sup>1</sup>, Taejun Ha<sup>1</sup>, Hyunyoung Cho<sup>1</sup>, Daehwan Kang<sup>2,3</sup>, and Yoonyoung Chung<sup>1,2,3</sup> <sup>1</sup>Department of Electrical Engineering, POSTECH, <sup>2</sup>Department of Semiconductor Engineering, POSTECH, <sup>3</sup>Center for Semiconductor Technology Convergence, POSTECH</p>
<p><b>FJ2-D-4</b> 14:30-14:45</p>	<p><b>High-performance Graphene-Based Field Effect Transistors Fabricated by UV-assisted Atomic Layer Deposition</b> Geonwoo Park<sup>1</sup>, Jeong Woo Shin<sup>2</sup>, Dohyun Go<sup>3</sup>, and Jihwan An<sup>4</sup> <sup>1</sup>Manufacturing Systems and Design Engineering, SEOULTECH, <sup>2</sup>Department of Mechanical Engineering, Nanyang Technological University, <sup>3</sup>Department of Chemistry, U.C. San Diego, <sup>4</sup>Department of Mechanical Engineering, POSTECH</p>
<p><b>FJ2-D-5</b> 14:45-15:00</p>	<p><b>The C-V-Based Investigation of Capacitive Coupling in the Sub-micron Amorphous InGaZnO Thin-film Transistors Depending on the Device Structure, Gate Dielectric Material, and Anneal Temperature</b> Sae Him Jung<sup>1</sup>, Seung Joo Myoung<sup>1</sup>, Donguk Kim<sup>1</sup>, Sangwook Kim<sup>2</sup>, Kwang-Hee Lee<sup>2</sup>, Moonil Jung<sup>2</sup>, Narae Han<sup>2</sup>, Jee-Eun Yang<sup>2</sup>, Younjin Jang<sup>2</sup>, and Dae Hwan Kim<sup>1</sup> <sup>1</sup>School of Electrical Engineering, Kookmin University, <sup>2</sup>SAIT</p>
<p><b>FJ2-D-6</b> 15:00-15:15</p>	<p><b>Investigating Defects on Channel Surface of IGZO Thin-film Transistors under Ozone Annealing and UV Treatment</b> Myeong Woo Ju<sup>1,2</sup>, Changyong Oh<sup>1,2</sup>, Taehyeon Kim<sup>3</sup>, Min Young Kim<sup>1</sup>, So Hee Park<sup>1</sup>, Geon Hyeong Lee<sup>1</sup>, and Bo Sung Kim<sup>1,2</sup> <sup>1</sup>Department of Applied Physics, Korea University, <sup>2</sup>E-ICT-Culture-Sports Track, Korea University, <sup>3</sup>Memory Diffusion Technology Team, Samsung Electronics Co., Ltd.</p>
<p><b>FJ2-D-7</b> 15:15-15:30</p>	<p><b>Rapid Thermal Annealing (RTA) to Recover the Radiation Damage of a-IGZO TFTs for Highly Reliable DRAM Cell Transistors</b> Minah Park, Jaewook Yoo, Hyeonjun Song, Soyeon Kim, Hongseung Lee, Seongbin Lim, Seohyeon Park, Yoon Kyeong Lee, Keun Heo, and Hagyoul Bae Jeonbuk National University</p>

## G. Device &amp; Process Modeling, Simulation and Reliability 분과

## [FK2-G] TCAD &amp; Compact Modeling

좌장: 최성진 교수(국민대학교), 김현우 교수(건국대학교)

초청발표 FK2-G-1 13:45-14:15	<b>Enhancing AC Degradation Modeling by considering the Degradation Profile Induced by DC Stress in SiON pMOSFETs</b> Yeohyeok Yu Department of Information and Communication Technology Engineering, Jeonju University
FK2-G-2 14:15-14:30	<b>Physical Compact Model of Double-Gate MOSFET with a-IGZO Channel for Cell Array Transistor in 3-Dimensional DRAM</b> Tae-Hyun Park and Ji-Woon Yang Department of Electronics and Information Engineering, Korea University
FK2-G-3 14:30-14:45	<b>Quasi 2-Dimensional Compact Model of Channel-All-Around MOSFETs for 3-Dimensional DRAM</b> Chae-Young Kim and Ji-Woon Yang Department of Electronics and Information Engineering, Korea University
FK2-G-4 14:45-15:00	<b>Intrinsic Delay Optimization on Lateral Source/Drain Growth Profile for Nanosheet Field-effect Transistor</b> Jae Woog Jung, Hwi Seung Park, and Hyun Woo Kim Department of Electrical and Electronics Engineering, Konkuk University
FK2-G-5 15:00-15:15	<b>Exploring the Impact of Channel Tapered Angle and Number of Channel Stacks in Nanosheet and Forksheet FETs</b> Yonghwan Ahn, Junjong Lee, Jinsu Jeong, Seunghwan Lee, Sanguk Lee, and Rock-Hyun Baek Department of Electrical Engineering, POSTECH
FK2-G-6 15:15-15:30	<b>Accelerated Device Simulation of Gate-all-around Nanosheet MOSFETs Using Quasi-1D Model</b> Kwang-Woon Lee and Sung-Min Hong School of Electrical Engineering and Computer Science, GIST

## Q. Metrology, Inspection, Analysis, and Yield Enhancement 분과

## [FL2-Q] Metrology, Inspection, and Yield Enhancement III

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

FL2-Q-1 13:45-14:00	<b>Wafer Inspection with High-speed Microdeflectometry</b> Manh Nguyen The <sup>1</sup> , Young-Sik Ghim <sup>1,2</sup> , and Hyug-Gyo Rhee <sup>1,2</sup> <sup>1</sup> KRISS, <sup>2</sup> UST
FL2-Q-2 14:00-14:15	<b>FTIR 및 기계학습을 활용한 SiN에 미치는 방사선 영향 분석</b> Dong-Hyeon Kim and Sung-Uk Zhang Digital Twin Laboratory, Dong-Eui University
FL2-Q-3 14:15-14:30	<b>Strain-enhanced Ion Drift Localization of 2D Van der Waals Ferroelectric Heterojunction via Tip-induced Strain Engineering</b> Jinhyoung Lee <sup>1</sup> , Gunhoo Woo <sup>2,3</sup> , Jinill Cho <sup>1</sup> , Yoonseok Noh <sup>5</sup> , Hyelim Shin <sup>5</sup> , Donghyuk Choi <sup>6</sup> , and Taesung Kim <sup>1,2,3,4,5</sup> <sup>1</sup> School of Mechanical Engineering, Sungkyunkwan University, <sup>2</sup> SKKU Advanced Institute of Nanotechnology, Sungkyunkwan University, <sup>3</sup> Department of Nano Science and Technology, Sungkyunkwan University, <sup>4</sup> Department of Nano Engineering, Sungkyunkwan University, <sup>5</sup> Department of Semiconductor Convergence Engineering, Sungkyunkwan University, <sup>6</sup> Department of Mechanical Engineering, Kongju National University
FL2-Q-4 14:30-14:45	<b>Development of Physical Force-Assisted Wet Cleaning Process for Removing Highly Chemically Resistant Organic Residue</b> Jae-Hyeong Lee <sup>1</sup> , Tae-Yoon Jung <sup>1</sup> , Kyoung-Chae Seo <sup>2</sup> , Byoung-Pil Lee <sup>2</sup> , Eun-Jin Kim <sup>2</sup> , Han-Ku Cho <sup>2</sup> , Jin-Goo Park <sup>1</sup> , and Tae-Gon Kim <sup>1</sup> <sup>1</sup> Department of Materials Science and Chemical Engineering, Hanyang University ERICA, <sup>2</sup> FST, Fine Semitech Corp.
FL2-Q-5 14:45-15:00	<b>경화 공정 수율 증대를 위한 다물리기반 경화 해석 및 딥러닝 네트워크</b> 김경빈 <sup>1</sup> , 이은호 <sup>1,2</sup> <sup>1</sup> 성균관대학교 기계공학과, <sup>2</sup> 성균관대학교 지능형 펌테크 융합전공
FL2-Q-6 15:00-15:15	<b>Thermo-reflectance Microscope and Semiconductor Applications</b> Ki Soo Chang <sup>1</sup> , Dong Uk Kim <sup>1</sup> , Chan Bae Jeong <sup>1</sup> , Ilkyu Han <sup>1</sup> , Dong Mok Kim <sup>1</sup> , Seung-Woo Lee <sup>2</sup> , and Byung-Seon Chun <sup>2</sup> <sup>1</sup> Division of Scientific Instrumentation, KBSI, <sup>2</sup> Nanoscope Systems, Inc.
FL2-Q-7 15:15-15:30	<b>Anomaly Classification for Multivariate Time-Series with Noisy Labels: A Semi-Supervised Approach</b> Jun Hui Lee and PooGyeon Park Department of Electrical Engineering, POSTECH

## R. Semiconductor Software 분과

### [FA3-R] Semiconductor Software

좌장: 강동현 교수(가천대학교), 김재호 교수(경상국립대학교)

초청발표 FA3-R-1 15:40-16:10	<b>Multi-tenant를 지원하는 Flash Storage 기술 트렌드와 전망</b> In Hwan Doh Samsung Electronics Co., Ltd.
FA3-R-2 16:10-16:25	<b>Eyana: The SSD Simulator Exploring the Inner Workings of Solid-State Drives</b> Habibur Rahman <sup>1</sup> , Jaeho Kim <sup>1</sup> , and Omar Faroque <sup>2</sup> <sup>1</sup> Department of AI Convergence Engineering, Gyeongsang National University, <sup>2</sup> Department of Computer Science, University of Texas at Austin
FA3-R-3 16:25-16:40	<b>Can Remote Compaction Improve Performance in LSM-KV Store?</b> Honghyeon Yoo, Jeeseob Kim, Seungjae Lee, Hongsu Byun, and Sungyong Park Department of Computer Science and Engineering, Sogang University
FA3-R-4 16:40-16:55	<b>Offloading Erasure Coding to CSD in Hyperledger Fabric</b> Junghyun Ryu <sup>1</sup> , Hongsu Byun <sup>1</sup> , Myungcheol Lee <sup>2</sup> , Jinchun Choi <sup>2</sup> , and Youngjae Kim <sup>1</sup> <sup>1</sup> Sogang University, <sup>2</sup> Smart Data Research Section, ETRI
FA3-R-5 16:55-17:10	<b>Can a Block Cache in LSM-KV Store Accelerates Stateful Query?</b> Dongjae Lee, Yeonwoo Jeong, and Sungyong Park Department of Computer Science and Engineering, Sogang University

## H. Display and Imaging Technologies 분과

## [FB3-H] Display and Imaging Technologies V

좌장: 권혁인 교수(중앙대학교)

<b>FB3-H-1</b> 15:40-15:55	<b>Partially Transparent Flexible IGZO TFT with PEDOT:PSS Gate and Parylene-C Gate Dielectric</b> Yoojeong Ko and Dong-Wook Park University of Seoul
<b>FB3-H-2</b> 15:55-16:10	<b>Extracting Bulk Trap Density of Oxide Semiconductor Thin Films Using Space Charge Limited Current</b> Changeon Jin <sup>1</sup> , Taewon Seo <sup>1</sup> , and Yoonyoung Chung <sup>1,2,3</sup> <sup>1</sup> Department of Electrical Engineering, POSTECH, <sup>2</sup> Department of Semiconductor Engineering, POSTECH, <sup>3</sup> Center for Semiconductor Technology Convergence, POSTECH
<b>FB3-H-3</b> 16:10-16:25	<b>Fabrication and Applications of a-ITZO Charge-Trapping TFTs Using Al<sub>2</sub>O<sub>3</sub> and HfO<sub>2</sub> in Memory-In-Pixel Display Technology</b> Seoungmin Park <sup>1</sup> , Taehyeon Noh <sup>1</sup> , Youngyeong Lee <sup>2</sup> , and Younhyun Kim <sup>1</sup> <sup>1</sup> Department of Photonics and Nanoelectronics, BK21 FOUR ERICA-ACE Center, Hanyang University, <sup>2</sup> HANA Optronics, Inc.
<b>FB3-H-4</b> 16:25-16:40	<b>Controllable, Large Gamut Sensitivity for Stretchable Strain Sensors With One Dimensional Single Walled Carbon Nanotubes</b> Hyeonbin-Jo, Yujin Choi, Taeho Kang, Gyubeen Kim, and Sung Hun Jin Department of Electronic Engineering, and I-Nanofab Center, Incheon National University
<b>FB3-H-5</b> 16:40-16:55	<b>Ambipolar Organic Inverter based on Non-fullerene Acceptor</b> Seungyeon Koh, MiRiNae Lee, HwaPyeong Noh, Swarup Biswas, and Hyeok Kim School of Electrical and Computer Engineering, University of Seoul
<b>FB3-H-6</b> 16:55-17:10	<b>Low-hydrogen SiO<sub>x</sub>N<sub>y</sub> Thin Film via Plasma-enhanced Atomic Layer Deposition Using a Hydrogen-free Silicon Precursor and N<sub>2</sub> Plasma: Growth Mechanism and Dielectric Properties</b> Chae-Yeon Park <sup>1</sup> , Hae Lin Yang <sup>1</sup> , Tae-Yeon Kim <sup>1</sup> , Gi-Beom Park <sup>1</sup> , Ara Yoon <sup>1</sup> , Jongryul Park <sup>2</sup> , Taehyeong Kang <sup>2,3</sup> , Yongjoo Park <sup>3</sup> , and Jin-Seong Park <sup>1</sup> <sup>1</sup> Division of Materials Science and Engineering, Hanyang University, <sup>2</sup> SK Trichem Co., Ltd.
<b>FB3-H-7</b> 17:10-17:25	<b>Copper-Iodide Film Formation via Physical Vapor Deposition Method and Their Electrical Contact and Sheet Resistance Properties</b> Geun Lee, Dong Wook Lee, Yoon Ho Jeong, Seo Hyun Kim, and Sung Hun Jin Department of Electronic Engineering, and I-Nanofab Center, Incheon National University

T. AI 분과

[FC3-T] Artificial Intelligence

좌장: 김병수 센터장(한국전자기술연구원)

초청발표 FC3-T-1 15:40-16:10	<b>Challenges on Efficient Inference of Large Language Models</b> Se Jung Kwon NAVER Cloud
초청발표 FC3-T-2 16:10-16:40	<b>An Efficient Inference Using Synchronization-Aware NAS and CUTLASS GEMM Optimization on Mobile Systems</b> Yongjun Park Yonsei University
FC3-T-3 16:40-16:55	<b>A Real-time 3D Hand Pose Based Control System Using Lightweight Point Cloud Inference on a Mobile GPU</b> Jaehyeon So, Johnny Rhe, and Jong Hwan Ko Department of Electrical and Computer Engineering, Sungkyunkwan University
FC3-T-4 16:55-17:10	<b>Efficient Source-Free Subject Feature Adaptation for Generalizing EEG-Based Motor Imagery Classification Models</b> Chanwook Hwang and Jong Hwan Ko Department of Electrical and Computer Engineering, Sungkyunkwan University
FC3-T-5 17:10-17:25	<b>Column-Major and Input-Stationary Mapping for Efficient In-memory Inference of Depth-Wise Convolutional Layers</b> Juhong Park and Jong Hwan Ko Department of Electrical and Computer Engineering, Sungkyunkwan University

## F. Silicon and Group-IV Devices and Integration Technology 분과

## [FD3-F] Advanced Device Applications

좌장: 김시현 교수(서강대학교), 우성윤 교수(경북대학교)

FD3-F-1 15:40-15:55	<b>TiO<sub>2</sub>층이 삽입된 시냅스용 플래시 메모리 소자의 가중치 선형성 개선 연구</b> 이성현, 이왕주, 김진하, 김상훈, 박정우, 박민아, 정순규, 손민균, 서동우 한국전자통신연구원
FD3-F-2 15:55-16:10	<b>CMOS-compatible Room-temperature Waveguide-integrated Photodetector based on Ge-on-insulator Photonic Platform for Mid-infrared Applications</b> Joonsup Shim, Jinha Lim, Inki Kim, and SangHyeon Kim KAIST
FD3-F-3 16:10-16:25	<b>Free-standing Germanium Photonic Crystal Waveguide for Mid-infrared On-chip Gas Sensor</b> Inki Kim, Jinha Lim, Joonsup Shim, and SangHyeon Kim School of Electrical Engineering, KAIST
FD3-F-4 16:25-16:40	<b>An Ultra-low Power 3D DRAM based on SiGe Heterojunction</b> Hyangwoo Kim <sup>1</sup> , Ju Hong Park <sup>2</sup> , and Chang-Ki Baek <sup>2</sup> <sup>1</sup> Future IT Innovation Laboratory, POSTECH, <sup>2</sup> Department of Convergence IT Engineering, POSTECH
FD3-F-5 16:40-16:55	<b>Low-power and Tunable Leaky Integrate-and-Fire Neuron Using Resistive Switching Transistor based on Silicon-Germanium Heterojunction</b> Yijoon Kim, Ju Hong Park, and Chang-Ki Baek Department of Convergence IT Engineering, POSTECH
FD3-F-6 16:55-17:10	<b>Self-rectifying Characteristics by Metal Work Functions at TiO<sub>2</sub>/HfO<sub>2</sub> Multilayer RRAM</b> Chan-Hyeok Nam and Myung-Hyun Baek Gangneung-Wonju National University
FD3-F-7 17:10-17:25	<b>Research on Electrical Characteristics of Neuromorphic Device with Pt/Cr/HfO<sub>2</sub>/Pt/Cr/HfO<sub>2</sub>/SiO<sub>2</sub>/Si Gate Stack</b> Jeong Mok Yang <sup>1</sup> , So Yeon Jeong <sup>1</sup> , Jae Min Kim <sup>1</sup> , Tae Hwan Koo <sup>1</sup> , Su Hyeon Chae <sup>1</sup> , and Moon Gyu Jang <sup>1,2</sup> <sup>1</sup> School of Nano Convergence Technology, Hallym University, <sup>2</sup> Center of Nano Convergence Technology, Hallym University



## E. Compound Semiconductors 분과

## [FE3-E] Compound Semiconductor – Modeling &amp; Process

좌장: 이종원 박사(NNFC)

<p><b>FE3-E-1</b> 15:40-15:55</p>	<p><b>Investigation on Carrier Transport Properties for AlGaIn/GaN HEMTs on SiC from the <math>L_g</math> Scaling Behavior of Transconductance in Saturation</b> Hyo-Jin Kim<sup>1</sup>, In-Geun Lee<sup>1</sup>, Wan-Soo Park<sup>1</sup>, Hyeok-Jun Lee<sup>1</sup>, Jae-Hak Lee<sup>1</sup>, Kyoungsoon Yang<sup>2</sup>, and Dae-Hyun Kim<sup>1</sup> <sup>1</sup>Kyungpook National University, <sup>2</sup>KAIST</p>
<p><b>FE3-E-2</b> 15:55-16:10</p>	<p><b>Enhancing Carrier Transport In AlGaIn/GaN HEMTs Through Structural Optimization And Transconductance Modeling</b> Hyo-Joung Kim, Walid Amir, Surajit Chakraborty, Hyeon-Cheol Jeong, Myeong-Jun You, and Tae-Woo Kim School of Electrical and Electronic Engineering, University of Ulsan</p>
<p><b>FE3-E-3</b> 16:10-16:25</p>	<p><b>Comprehensive Analysis of Self-heating Effects in Multi-finger GaN-on-SiHEMTs</b> Jaeyong Jeong<sup>1</sup>, Sung Joon Choi<sup>1</sup>, Joonsup Shim<sup>1</sup>, Eunjung Kim<sup>1</sup>, Seong Kwang Kim<sup>1</sup>, Bong Ho Kim<sup>1</sup>, Joon Pyo Kim<sup>1</sup>, Yoon Je Suh<sup>1</sup>, Nahyun Rheem<sup>1</sup>, Woo jin Beak<sup>1</sup>, Dae Myeong Geum<sup>2</sup>, Yumin Koh<sup>3</sup>, Donghyun Kim<sup>3</sup>, and Sanghyeon Kim<sup>1</sup> <sup>1</sup>School of Electrical Engineering, KAIST, <sup>2</sup>School of Electronic Engineering, Chungbuk National University, <sup>3</sup>KANC</p>
<p><b>FE3-E-4</b> 16:25-16:40</p>	<p><b>The Impact of T-Gate Head Size on Radiation Tolerance in GaN HEMTs</b> Sung-Jae Chang<sup>1</sup>, Dong-Seok Kim<sup>2</sup>, Hyun-Wook Jung<sup>1</sup>, Dohyun Kim<sup>1</sup>, Il-Gyu Choi<sup>1</sup>, Youn-Sub Noh<sup>1</sup>, Sang-Heung Lee<sup>1</sup>, Seong-Il Kim<sup>1</sup>, Ho-Kyun Ahn<sup>1</sup>, Jong-Won Lim<sup>1</sup>, and Dong-Min Kang<sup>1</sup> <sup>1</sup>Photonic/Wireless Convergence Research Department, ETRI, <sup>2</sup>Korea Multi-Purpose Accelerator Complex, KAERI</p>
<p><b>FE3-E-5</b> 16:40-16:66</p>	<p><b>Extraction of Effective Mobility for <math>In_{0.8}Ga_{0.2}As/In_{0.52}Al_{0.48}As</math> QW HEMTs at Cryogenic Temperature</b> Sang-Pyeong Son<sup>1</sup>, Ji-Hoon Yoo<sup>1</sup>, Seung-Woo Son<sup>1</sup>, In-Geun Lee<sup>1</sup>, Jae-Hak Lee<sup>1</sup>, Kyoungsoon Yang<sup>2</sup>, and Dae-Hyun Kim<sup>1</sup> <sup>1</sup>Kyungpook National University, <sup>2</sup>KAIST</p>
<p><b>FE3-E-6</b> 16:55-17:10</p>	<p><b>AlGaIn/GaN 이중 접합 트랜지스터의 격리 공정을 위한 이온주입 공정 연구</b> Jun-Hyeok Yim, Seung-Heon Shin, Min-Jeoung Kim, Dong-Ik Oh, Min-Keun Lee, Min-Gi Jeong, and Ho-Young Cha School of Electronic and Electrical Engineering, Hongik University</p>
<p><b>FE3-E-7</b> 17:10-17:25</p>	<p><b>Next Generation Infrared Detector based on Type-II Superlattice</b> Hyun-Woo Jang<sup>1</sup>, Jun-Ho Eom<sup>1</sup>, Byung-Hyuk Kim<sup>1</sup>, Han Jung<sup>1</sup>, Sun Ho Kim<sup>2</sup>, Jun Hee Choi<sup>3</sup>, Sang-Sun Yong<sup>4</sup>, and Young Ho Kim<sup>1</sup> <sup>1</sup>i3system, Inc., <sup>2</sup>Agency of Defense Development, <sup>3</sup>KRIT, <sup>4</sup>Korea Aerospace Research Institute</p>

## I. MEMS & Sensors Systems 분과

### [FF3-I] Recent Advances in Sensor Geometry and Materials

좌장: 박윤석 교수(경희대학교)

FF3-I-1 15:40-15:55	<b>Dielectrically-modulated Thyristor Based Biosensor for Enhanced Sensitivity</b> Chan Heo <sup>1</sup> , Sein Oh <sup>1</sup> , Hyeongyu Kim <sup>1</sup> , Keun Heo <sup>2</sup> , and Kihyun Kim <sup>1</sup> <sup>1</sup> Division of Electronic Engineering, Jeonbuk National University, <sup>2</sup> Department of Semiconductor Science and Technology, Jeonbuk National University
FF3-I-2 15:55-16:10	<b>Flexible Pressure Sensor with High Performance and Durability based on Porous Polymer Thin-film</b> Sehwan Park <sup>1</sup> , Sanghoon Park <sup>2</sup> , Haechang Lee <sup>3</sup> , Seunghyup Yoo <sup>2</sup> , and Hanul Moon <sup>1</sup> <sup>1</sup> Department of Chemical Engineering (BK21 FOUR Graduate Program) & Department of Semiconductors, Dong-A University, <sup>2</sup> School of Electrical Engineering, KAIST, <sup>3</sup> Center for Biomaterials, Biomedical Research Institute, KIST
FF3-I-3 16:10-16:25	<b>Hybrid Energy Harvesting System to Improve Power Efficiency of Organic Photovoltaics in Indoor Light Sources with Triboelectric Nanogenerator</b> Hyojeong Choi <sup>1</sup> , Selim Han <sup>1</sup> , Jooyeong Kim <sup>2</sup> , Biswas Swarup <sup>1</sup> , and Hyeok kim <sup>1</sup> <sup>1</sup> School of Electrical and Computer Engineering, University of Seoul, <sup>2</sup> Department of Intelligent Semiconductor Engineering, University of Seoul
FF3-I-4 16:25-16:40	<b>Micro-Electronic Mechanical Switch (MEMS) Based Field-Programmable Photonic Gate Array (FPPGA)</b> Hyug Su Kwon <sup>1</sup> , Seok Chan Eom <sup>2</sup> , Sangyeol Oh <sup>2</sup> , Sunghoon Jang <sup>1</sup> , Changku Kim <sup>1</sup> , Youngseok Bae <sup>1</sup> , Younghoon Chun <sup>2</sup> , and Sangyoon Han <sup>3</sup> <sup>1</sup> Agency for Defense Development, <sup>2</sup> LIG NEX1 Co., Ltd., <sup>3</sup> DGIST
FF3-I-5 16:40-16:55	<b>Sulfur-assisted WO<sub>3</sub> Nanospheres for Enhancement of NO<sub>2</sub> Gas Sensing</b> Jun-Cheol Park and Sanghan Lee School of Materials Science and Engineering, GIST
FF3-I-6 16:55-17:10	철 회
FF3-I-7 17:10-17:25	<b>Modulative Artificial Nociceptor based on Double Charge Trap Layer Structure</b> Geunyoung Kim and Kyung Min Kim Department of Materials Science and Engineering, KAIST

## K. Memory (Design & Process Technology) 분과

### [FG3-K] NAND Flash Memory

좌장: 강대웅 교수(서울대학교), 김동찬 교수(SK hynix University)

초청발표 FG3-K-1 15:40-16:10	<b>Next Evolution through the Properties of 3D NAND Flash</b> Dongchan Kim, Jinkook Kim SK hynix
FG3-K-2 16:10-16:25	<b>HfAlO<sub>2</sub> 기반의 이중 메모리 메커니즘을 가지는 V-NAND Flash 소자의 메모리 윈도우 및 열적 안정성 개선</b> 추준홍, 신의중, 강창연, 김승훈, 조병진 한국과학기술원 전기 및 전자공학부
FG3-K-3 16:25-16:40	<b>Quantitative Analysis on Z-interference Using Reprogram Scheme in 3D NAND Flash Memory V<sub>th</sub> Distribution</b> Jooyoung Lee <sup>1</sup> and Hyungcheol Shin <sup>1,2</sup> <sup>1</sup> Seoul National University, <sup>2</sup> Integra Semiconductor Co., Ltd.
FG3-K-4 16:40-16:55	<b>Simulation Study on the Electrical Characteristics of 3D NAND String with a Locally Deformed Memory Cell</b> Geon-Tae Jang and Sung-Min Hong School of Electrical Engineering and Computer Science, GIST
FG3-K-5 16:55-17:10	<b>Program Strategy of 3D NAND Flash to Mitigate Threshold Voltage Distribution Widening at Cross-Temperature</b> Jiyeon Kim, Chanyang Park, Kihoon Nam, Donghyun Kim, Hyunseo You, and Rock-Hyun Baek Department of Electrical Engineering, POSTECH
FG3-K-6 17:10-17:25	<b>Impacts of Hydrogen Profile on The Reliability Characteristics of Flash Memory Using SiO<sub>2</sub>/Si<sub>3</sub>N<sub>4</sub>/SiO<sub>2</sub> Stack Film by Post Annealing</b> Sehyeon Choi <sup>1</sup> , Sejin Kim <sup>1</sup> , San Park <sup>1</sup> , Boncheol Ku <sup>1</sup> , Hanmei Choi <sup>2</sup> , Hyungjun Kim <sup>2</sup> , Jaehyun Yang <sup>2</sup> , and Changhwan Choi <sup>1</sup> <sup>1</sup> Division of Materials Science & Engineering, Hanyang University, <sup>2</sup> Memory Process Development Team, Samsung Electronics Co. Ltd.

## K. Memory (Design & Process Technology) 분과

### [FH3-K] Ferroelectric Memory II

좌장: 김상범 교수(서울대학교), 배종호 교수(국민대학교)

<b>FH3-K-1</b> 15:40-15:55	<b>High-Performance and Disturb-Free Charge Trap Flash with Capacitance Boosting by Negative Capacitance</b> Giuk Kim, Taeho Kim, Sangho Lee, Hunbeom Shin, Lingwei Zhang, Hyojun Choi, Yunseok Nam, Sangmok Lee, Woongjin Kim, Jihye Ock, Sujeong Lee, Hyunjun Kang, and Sanghun Jeon School of Electrical Engineering, KAIST
<b>FH3-K-2</b> 15:55-16:10	<b>Energy Efficient Computing In Memory with Metal-Ferroelectric-Metal-Insulator-Silicon (MFMS) Ferroelectric FET</b> Giuk Kim, Sangho Lee, Hunbeom Shin, Lingwei Zhang, Hyojun Choi, Yunseok Nam, Sangmok Lee, Woongjin Kim, Jihye Ock, Sujeong Lee, Hyunjun Kang, and Sanghun Jeon School of Electrical Engineering, KAIST
<b>FH3-K-3</b> 16:10-16:25	<b>Comparative Analysis of Polarization Switching Characteristics in Channel and Contact Regions of Ferroelectric InGaZnOx Thin Film Transistor</b> Sejun Park, Hyojin Yang, Haesung Kim, Sanghyuk Yun, Ha Neul Lee, Dong Myong Kim, Dae Hwan Kim, Sung-Jin Choi, and Jong-Ho Bae School of Electrical Engineering, Kookmin University
<b>FH3-K-4</b> 16:25-16:40	<b>A Strategy for Controlling Imprint Field in Hafnia Ferroelectric Device</b> Hunbeom Shin, Jungheon Hwang, Giuk Kim, Sangho Lee, Lingwei Zhang, Hyojun Choi, Sujeong Lee, and Sanghun Jeon School of Electrical Engineering, KAIST
<b>FH3-K-5</b> 16:40-16:55	<b>Long-lifespan HfZrO<sub>4</sub> Random-access Memory with Degradation Suppressing Layer</b> Do Yeon Lee, Woon San Ko, Jun Ho Byun, So Yeon Kwon, and Ga Won Lee Chungnam National University
<b>FH3-K-6</b> 16:55-17:10	<b>Termination Topologies of the Split Signal Lines for High-speed V-NAND Package Test</b> Ungjin Jang, Jahwan Ku, Hyucksoo Jeon, and Sehyun Seo Samsung Electronics Co., Ltd.
<b>FH3-K-7</b> 17:10-17:25	<b>Voltage Summation-Based Processing-In Memory SRAM Macro with 4-Bit Weight and 4-Bit Input Using Input-Bit Slicing Method</b> Jung Nam Kim <sup>1</sup> , Yong Woo Kim <sup>1</sup> , Minsuk Koo <sup>2</sup> , and Yoon Kim <sup>1</sup> <sup>1</sup> Department of Electrical and Computer Engineering, University of Seoul, <sup>2</sup> Department of Computer Science and Engineering, Incheon National University

## D. Thin Film Process Technology 분과

## [FI3-D] Emerging Films Growth Technique

좌장: 엄태용 선임(한국화학연구원), 한정환 교수(서울과학기술대학교)

초청발표 FI3-D-1 15:40-16:10	<b>Multifunctional Oxide Thin Films for Novel Electronics</b> Seung-Hyub Baek Electronics Materials Research Center, KIST
초청발표 FI3-D-2 16:10-16:40	<b>High-quality Thin Film Quantum Materials</b> Yoon Jang Chung Department of Chemical and Biological Engineering, Korea University
FI3-D-3 16:40-16:55	<b>Revolutionizing SnS Thin Films Fabrication for Advanced Electronics</b> Seung Ho Ryu <sup>1,2</sup> , Minki Choe <sup>3</sup> , Taeyong Eom <sup>4</sup> , Taek-Mo Chung <sup>4</sup> , In-Hwan Baek <sup>3</sup> , and Seong Keun Kim <sup>1,2</sup> <sup>1</sup> KU-KIST Graduate School of Converging Science and Technology, Korea University, <sup>2</sup> Electronic Materials Research Center, KIST, <sup>3</sup> Department of Chemical Engineering, Inha University, <sup>4</sup> Division of Advanced Materials, KRICT

D. Thin Film Process Technology **분과****[FJ3-D] Thin Film Transistors - II**

좌장: 이용규 교수(송실대학교), 백인환 교수(인하대학교)

<b>FJ3-D-1</b> 15:40-15:55	<b>Role of Post-annealing in Transistors with Oxide Channel/High-k Dielectric Stacks for 3D Stackable Memory Applications</b> Nayeon Kim, Hyunwook Kim, Eunryeong Hong, Seonuk Jeon, and Jiyong Woo School of Electronic and Electrical Engineering, Kyungpook National University
<b>FJ3-D-2</b> 15:55-16:10	<b>Impact of Channel and Blocking Layers for Fast-Speed and Low-Power Operations of Vertical Charge-Trap Memory Using InGaZnO Channel</b> Yun-Ju Cho <sup>1</sup> , Young-Ha Kwon <sup>2</sup> , Nak-Jin Seong <sup>2</sup> , Kyu-Jeong Choi <sup>2</sup> , Hee-Ok Kim <sup>3</sup> , Jong-Heon Yang <sup>3</sup> , Chi-Sun Hwang <sup>3</sup> , and Sung-Min Yoon <sup>1</sup> <sup>1</sup> Kyung Hee University, <sup>2</sup> NCD Co., Ltd., <sup>3</sup> ETRI
<b>FJ3-D-3</b> 16:10-16:25	<b>Asymmetrical Self Heating Behavior of Vertical Thin-Film Transistors with Different Source and Drain Electrode Configuration</b> Dong-Hee Lee <sup>1</sup> , Young-Ha Kwon <sup>2</sup> , Nak-Jin Seong <sup>2</sup> , Kyu-Jeong Choi <sup>2</sup> , and Sung-Min Yoon <sup>1</sup> <sup>1</sup> Kyung Hee University, <sup>2</sup> NCD Co., Ltd.
<b>FJ3-D-4</b> 16:25-16:40	<b>Effect of Source/Drain Metal-dependent Oxygen Scavenging on the Density of States and Lateral Profile of Carrier Concentration in InGaZnO TFTs</b> Seungki Kim, Wonjung Kim, Changwook Kim, Dong Myong Kim, Sung-Jin Choi, Jong-Ho Bae, and Dae Hwan Kim School of Electrical Engineering, Kookmin University
<b>FJ3-D-5</b> 16:40-16:55	<b>Comparative Analysis of Zinc-Tin-Oxide Films Grown by Atomic Layer Deposition by Varying Chemical Composition Ratio for Improved TFT Performance</b> Dong-Hyun Lim <sup>1</sup> , Ae-Rim Choi <sup>2</sup> , Yi-Ji Jeong <sup>1</sup> , Young-Bae Ahn <sup>3</sup> , Seung-Wook Ryu <sup>3</sup> , Do-Hee Kim <sup>3</sup> , and Il-Kwon Oh <sup>1,2</sup> <sup>1</sup> Department of Electrical and Computer Engineering, Ajou University, <sup>2</sup> Department of Intelligence Semiconductor Engineering, Ajou University, <sup>3</sup> Revolutionary Technology Center, R&D Division, SK hynix
<b>FJ3-D-6</b> 16:55-17:10	<b>Intrinsic Device Characteristics of Oxide TFT with Morphotropic Phase Boundary High-k Gate Insulator by Fast ID-VG Measurement</b> Taeseung Jung and Sanghun Jeon School of Electrical Engineering, KAIST
<b>FJ3-D-7</b> 17:10-17:25	<b>Improved MOSFETs Performance and Reliability by Low-temperature Deuterium Annealing</b> Ju-Won Yeon, Tae-Hyun Kil, Hyo-Jun Park, and Jun-Young Park Chungbuk National University

## G. Device &amp; Process Modeling, Simulation and Reliability 분과

## [FK3-G] Device Characterization &amp; Modeling II

좌장: 신흥식 수석(DB하이텍), 최성진 교수(국민대학교)

<p><b>FK3-G-1</b> 15:40-15:55</p>	<p><b>Effect of Oxygen Content on the Density of States and Lateral Profile of Dopant Concentration in InGaZnO FETs regarding Oxygen Scavenging</b> Seong Hoon Jeon, Won Jung Kim, Changwook Kim, Jong-Ho Bae, Sung-Jin Choi, Dong Myong Kim, and Dae Hwan Kim School of Electrical Engineering, Kookmin University</p>
<p><b>FK3-G-2</b> 15:55-16:10</p>	<p><b>Characterization of the Effects of Hydrogen and Oxygen Contents on Current Stress-induced Instability in the Sub-micron Amorphous InGaZnO Thin-film Transistors based on the AC Bias Real-time Current Probe</b> Do Hun Kim<sup>1</sup>, Jingyu Park<sup>1</sup>, Seoung Joo Myoung<sup>1</sup>, Sangwook Kim<sup>2</sup>, Kwang-Hee Lee<sup>2</sup>, Jee-Eun Yang<sup>2</sup>, Younjin Jang<sup>2</sup>, and Dae Hwan Kim<sup>1</sup> <sup>1</sup>School of Electrical Engineering, Kookmin University, <sup>2</sup>SAIT</p>
<p><b>FK3-G-3</b> 16:10-16:25</p>	<p><b>Abnormal Hump Characteristic under Gated-Diode Pulse Stress and its Oxygen Content Effect in Sub-Micron IGZO TFTs</b> Su Han Noh<sup>1</sup>, Jingyu Park<sup>1</sup>, Seoung Joo Myoung<sup>1</sup>, Sangwook Kim<sup>2</sup>, Kwang-Hee Lee<sup>2</sup>, Jee-Eun Yang<sup>2</sup>, Younjin Jang<sup>2</sup>, and Dae Hwan Kim<sup>1</sup> <sup>1</sup>School of Electrical Engineering, Kookmin University, <sup>2</sup>SAIT</p>
<p><b>FK3-G-4</b> 16:25-16:40</p>	<p><b>Annealing Process for Improving Electrical Properties of a-IGZO TFTs with Underlap-channel</b> So-Jeong Park<sup>1</sup>, Hanbin Lee<sup>1</sup>, Jeonghee Ko<sup>1</sup>, Yulim An<sup>1</sup>, Hyo-In Yang<sup>1</sup>, Gyoung-Su Min<sup>1</sup>, Jun-Ho Jang<sup>1</sup>, Jeong-Yeon Im<sup>1</sup>, Dong Myong Kim<sup>1</sup>, Dae Hwan Kim<sup>1</sup>, Jong-Ho Bae<sup>1</sup>, Min-Ho Kang<sup>2</sup>, and Sung-Jin Choi<sup>1</sup> <sup>1</sup>School of Electrical Engineering, Kookmin University, <sup>2</sup>Department of Nano-process, NNFC</p>
<p><b>FK3-G-5</b> 16:40-16:55</p>	<p><b>Highly Reliable Hump-free Multiple Channel a-InGaZnO Thin-film Transistor on 8-inch Wafer</b> Hyo-In Yang<sup>1</sup>, Hanbin Lee<sup>1</sup>, Jeonghee Ko<sup>1</sup>, Yulim An<sup>1</sup>, Gyoung-Su Min<sup>1</sup>, So-Jeong Park<sup>1</sup>, Jun-Ho Jang<sup>1</sup>, Jeong-Yeon Im<sup>1</sup>, Dong Myong Kim<sup>1</sup>, Dae Hwan Kim<sup>1</sup>, Jong-Ho Bae<sup>1</sup>, Min-Ho Kang<sup>2</sup>, and Sung-Jin Choi<sup>1</sup> <sup>1</sup>School of Electrical Engineering, Kookmin University, <sup>2</sup>Department of Nano-process, NNFC</p>
<p><b>FK3-G-6</b> 16:55-17:10</p>	<p><b>Quantitative Analysis based on Subgap Density-of-States (DOS) for Deuterium Annealing Effect in a-IGZO TFTs by TCAD and Experimental Characterization</b> Seongbin Lim<sup>1</sup>, Hyeonjun Song<sup>1</sup>, Jaewook Yoo<sup>1</sup>, Hongseung Lee<sup>1</sup>, Soyeon Kim<sup>1</sup>, Jo Hak Jeong<sup>1</sup>, Kiyoung Lee<sup>3</sup>, Hyeon-Sik Jang<sup>1</sup>, Minah Park<sup>1</sup>, Seohyeon Park<sup>1</sup>, Keun Heo<sup>1</sup>, Jun-Young Park<sup>2</sup>, Yoon Kyeung Lee<sup>1</sup>, and Hagyoul Bae<sup>1</sup> <sup>1</sup>Jeonbuk National University, <sup>2</sup>Chungbuk National University, <sup>3</sup>Hongik University</p>
<p><b>FK3-G-7</b> 17:10-17:25</p>	<p><b>Low-Frequency Noise and DC I-V Characterization for Irradiation-Induced Degradation and Trap Behaviors in a-IGZO TFTs</b> Hongseung Lee<sup>1</sup>, Jaewook Yoo<sup>1</sup>, Hyeonjun Song<sup>1</sup>, Soyeon Kim<sup>1</sup>, Seongbin Lim<sup>1</sup>, Seohyeon Park<sup>1</sup>, Minah Park<sup>1</sup>, Kiyoung Lee<sup>2</sup>, Yoon Kyeung Lee<sup>1</sup>, Keun Heo<sup>1</sup>, and Hagyoul Bae<sup>1</sup> <sup>1</sup>Jeonbuk National University, <sup>2</sup>Hongik University</p>

## V. Quantum Technology 분과

### [FL3-V] Hybrid Platform for Quantum Technology

좌장: 김도헌 교수(서울대학교)

초청발표 <b>FL3-V-1</b> 15:40-16:10	<b>Hybrid Quantum Devices with Superconducting Microwave Circuits</b> Jinwoong Cha Quantum Technology Institute, KRISS
초청발표 <b>FL3-V-2</b> 16:10-16:40	<b>Quantum Acoustics: Surface Acoustic Waves-driven Single-photon Source</b> Seok-Kyun Son <sup>1,2</sup> <sup>1</sup> Department of Physics, Kyung Hee University, <sup>2</sup> Department of Information Display, Kyung Hee University
초청발표 <b>FL3-V-3</b> 16:40-17:10	<b>Graphene Straintronics for Quantum Nanodevices toward Tunable Quantum Information</b> Nojoon Myoung Department of Physics Education, Chosun University
<b>FL3-V-4</b> 17:10-17:25	<b>Tailoring of Single-electron Wave Packet along the Energy Axis</b> Min-Sik Kim <sup>1,2</sup> , Bum-Kyu Kim <sup>2</sup> , Ju-Jin Kim <sup>1</sup> , and Myung-Ho Bae <sup>2</sup> <sup>1</sup> Department of Physics, Jeonbuk National University, <sup>2</sup> KRISS



2024년 1월 25일(목) 09:00-17:55

저자 Q&A 세션: 17:15-17:55

D. Thin Film Process Technology 분과

ZONE 1 (1층 전시장)

TP1-001	<p><b>Mimicking IR Visionary System via 0D-2D Heterojunction of InAs QD/WSe<sub>2</sub> Artificial Synapse</b>                  Soobin Shim<sup>1</sup>, Hyeongtae Kim<sup>1</sup>, Seongchan Kim<sup>2</sup>, Nuri Oh<sup>2</sup>, and Jun Hong Park<sup>1</sup>  <sup>1</sup>School of Materials Science &amp; Engineering, Gyeongsang National University, <sup>2</sup>Division of Materials Science &amp; Engineering, Hanyang University</p>
TP1-002	<p><b>Charge Trap Engineering and Synaptic Behavior of Transition Metal Dichalcogenides Transistor, via Molecular Dynamics</b>                  MiJi Kwon<sup>1</sup>, Hyeongtae Kim<sup>1</sup>, Suyeon Cho<sup>2</sup>, and Junhong Park<sup>1</sup>  <sup>1</sup>School of Materials Science &amp; Engineering, Gyeongsang National University, <sup>2</sup>Department of Materials Engineering and Convergence Technology, Gyeongsang National University</p>
TP1-003	<p><b>Van Der Waals Interface Engineering for Enhancement of Semiconductor Device Performance</b>                  Su-yeon Cho<sup>1</sup>, Do-Hyeon Lee<sup>2</sup>, and Jun Hong Park<sup>1</sup>  <sup>1</sup>School of Materials Science &amp; Engineering, Gyeongsang National University, <sup>2</sup>Department of Materials Engineering and Convergence Technology, Gyeongsang National University</p>
TP1-004	<p><b>Centimeter Scaled Growth and Electric Characteristics of Layered NiTe<sub>2</sub></b>                  Wonbeom Kim<sup>1</sup>, Hyeongtae Kim<sup>2</sup>, Yeonjin Je<sup>3</sup>, Eunjeung Kim<sup>4</sup>, and Junhong Park<sup>2</sup>  <sup>1</sup>School of Materials Science &amp; Engineering, Gyeongsang National University, <sup>2</sup>Materials Engineering and Convergence Technology, Gyeongsang National University, <sup>3</sup>Ceramic Engineering, Gyeongsang National University, <sup>4</sup>LLNL</p>
TP1-005	<p><b>Investigation of Annealing Effect on Indium-Zinc-Oxide (IZO) Thin Film Transistor (TFT) by Gamma-ray Radiation</b>                  Do-Kywn Kim<sup>1</sup>, Dong-Seok Kim<sup>2</sup>, Min-Ju Kim<sup>1</sup>, Tae-Eon Kim<sup>1</sup>, and Seung Heon Shin<sup>3</sup>  <sup>1</sup>Department of Semiconductor Materials and Applications, Korea Polytechnics, <sup>2</sup>Korea Multi-Purpose Accelerator Complex, KAERI, <sup>3</sup>Department of Semiconductor Process Equipment, Korea Polytechnics</p>
TP1-006	<p><b>듀얼 게이트 a-ITGZO 박막 트랜지스터의 채널 구조에 따른 전기적 특성 연구</b>                  설민혁<sup>1</sup>, 조경아<sup>1</sup>, 강민구<sup>1</sup>, 김상섭<sup>2</sup>, 김상식<sup>1</sup>  <sup>1</sup>고려대학교 전기전자공학과, <sup>2</sup>Samsung Display Co., Ltd.</p>
TP1-007	<p><b>a-ITGZO 박막트랜지스터의 성능 향상을 위한 Al<sub>2</sub>O<sub>3</sub>/SiO<sub>2</sub> 게이트 절연막의 적용</b>                  강민구<sup>1</sup>, 조경아<sup>1</sup>, 김상섭<sup>2</sup>, 김상식<sup>1</sup>  <sup>1</sup>고려대학교 전기전자공학과, <sup>2</sup>Samsung Display Co., Ltd.</p>
TP1-008	<p><b>HfO<sub>2</sub>/InGaZnO Double-layered Transistor with Low-powered Switching Enabled by Quasi-two-dimensional Electron Channel</b>                  Seyoung Oh<sup>1,2</sup> and Byungjin Cho<sup>1,2</sup>  <sup>1</sup>Department of Urban, Energy, and Environmental Engineering, Chungbuk National University, <sup>2</sup>Department of Advanced Material Engineering, Chungbuk National University</p>
TP1-009	<p><b>Influence of TiO<sub>2</sub> Thin Film Grown by Atomic Layer Deposition on N-Type Bi<sub>2</sub>Te<sub>3</sub>Se<sub>0.3</sub> Thermoelectric Powders</b>                  Su Min Eun<sup>1</sup>, Ji Hyeon Hwang<sup>2</sup>, and Byung Joon Choi<sup>1</sup>  <sup>1</sup>Department of Material Science and Engineering, Seoul National University of Science and Technology, <sup>2</sup>Department of Optometry, Seoul National University of Science and Technology</p>

TP1-010	<p><b>The Enhancement of the Electrical Properties of a-ZTO Thin-Film Transistors through Metal Capping Process</b></p> <p>Jin Woo Lee, Se-Hyeong Lee, So-Young Bak, Dongki Baek, Chan-Yeong Park, Hyeongrok Jang, and Moonsuk Yi</p> <p>Pusan National University</p>
TP1-011	<p><b>Optimization for Enhanced Electrical Properties of ZrO<sub>2</sub>/HfO<sub>2</sub> Laminated Structure for Metal-Insulator-Metal Capacitors</b></p> <p>Yoonchul Shin, Seung Won Lee, and Ji-Hoon Ahn</p> <p>Department of Materials Science and Chemical Engineering, Hanyang University</p>
TP1-012	<p><b>Wafer-scale Thin Film Grown WSe<sub>2</sub> via Molten Salt Method and Device Applications</b></p> <p>Sojeong Park<sup>1</sup>, Hyeongtae Kim<sup>2</sup>, Soobin Shim<sup>2</sup>, and Jun Hong Park<sup>2</sup></p> <p><sup>1</sup>Department of Energy and Mechanical Engineering, Gyeongsang National University, <sup>2</sup>School of Materials Science and Engineering, Gyeongsang National University</p>
TP1-013	<p><b>Two Step Surface Engineering of Transition Metal Dichalcogenide Heterojunction with Metal Oxide-formation and Reduction Processes</b></p> <p>Mingu Kang<sup>1</sup> and Jun Hong Park<sup>1,2</sup></p> <p><sup>1</sup>School of Materials Science and Engineering, Gyeongsang National University, <sup>2</sup>Department of Materials Engineering and Convergence Technology, Gyeongsang National University</p>
TP1-014	<p><b>Optically Simulated Synaptic Behaviors of HfS<sub>2</sub> Grown via Molten Salt Flux Method</b></p> <p>Seunghee Kim<sup>1</sup>, Mi Ji Kwon<sup>2</sup>, Jung Young Cho<sup>3</sup>, and Jun Hong Park<sup>1,2</sup></p> <p><sup>1</sup>School of Materials Science and Engineering, Gyeongsang National University, <sup>2</sup>Department of Materials Engineering and Convergence Technology, Gyeongsang National University, <sup>3</sup>Nano Convergence Materials Center, KICET</p>
TP1-015	<p><b>Low Temperature Processed, Highly Stable CMOS Inverter by integrating Zn-ON and Tellurium Thin-Film Transistors : Journal of Information Display</b></p> <p>Taeung Kim, Muhammad Naqi, Yongin Cho, and Sunkook Kim</p> <p><sup>1</sup>Multifunctional Nano Bio Electronics Lab, Sungkyunkwan University, <sup>2</sup>School of Advanced Materials Science and Engineering, Sungkyunkwan University</p>
TP1-016	<p><b>Intense Pulsed Light을 이용한 선택적 어닐링을 통한 Top-gate Self-aligned 구조의 IGZO TFT 성능 개선</b></p> <p>김희태<sup>1</sup>, 박서학<sup>1</sup>, 정재중<sup>1</sup>, 박영근<sup>1</sup>, 김동빈<sup>1</sup>, 조성행<sup>2</sup>, 최성율<sup>1</sup>, 조병진<sup>1</sup></p> <p><sup>1</sup>한국과학기술원 전기 및 전자공학부, <sup>2</sup>한국전자통신연구원 플렉시블전자소자연구실</p>
TP1-017	<p><b>Unlocking the Functionality of Multi-phase Tungsten Disulfide for Negative Differential Resistance and Random-access Memory Devices</b></p> <p>Jinill Cho<sup>1</sup>, Gunhoo Woo<sup>2</sup>, Jinhyeong Lee<sup>1</sup>, and Taesung Kim<sup>1,2</sup></p> <p><sup>1</sup>School of Mechanical Engineering, Sungkyunkwan University, <sup>2</sup>SKKU Advanced Institute of Nanotechnology, Sungkyunkwan University</p>
TP1-018	<p><b>Multi-stack Ferroelectric Capacitor based on Fluorite Structure Materials for Neuromorphic Computing</b></p> <p>Hyo-Bae Kim and Ji-Hoon Ahn</p> <p>Department of Materials Science and Chemical Engineering, Hanyang University</p>
TP1-019	<p><b>Multilevel Block Copolymers and Polymer Colloids Composites for Sensitive Gas Sensor</b></p> <p>Dong Won You, Geon Gug Yang, and Sang Ouk Kim</p> <p>Department of Material Science &amp; Engineering, KAIST</p>
TP1-020	<p><b>Tungsten Diselenide (WSe<sub>2</sub>) Ambipolar Transistor with Al<sub>2</sub>O<sub>3</sub> Passivation Supported by Ultrathin Al layer for High-stability Logic Device</b></p> <p>Joo-On OH and Sunkook Kim</p> <p>School of Advanced Materials Science &amp; Engineering, Sungkyunkwan University</p>

TP1-021	<p><b>Composition-controllable Growth of GeTe Thin Films by Hollow Cathode Plasma-assisted Atomic Layer Deposition</b></p> <p>Min Gyoo Cho, Ju Hwan Park, Si Eun Jung, and Byung Joon Choi Department of Material Science and Engineering, Seoul National University of Science and Technology</p>
TP1-022	<p><b>High-performance of Hydrogenated Spinel Phase InZnSnO Thin-Film Transistors</b></p> <p>Gwang-Bok Kim and Jae Kyeong Jeong Department of Electronic Engineering, Hanyang University</p>
TP1-023	<p><b>Hydrogen Behavior in Oxide TFTs with Gate Insulator Variation by High-pressure Hydrogen Annealing</b></p> <p>Jin Won Bak and Jae Kyeong Jeong Department of Electronic Engineering, Hanyang University</p>
TP1-024	<p><b>Hydrogen Doped a-IGZTO TFTs with Excellent Reliability and High Field-effect Mobility</b></p> <p>Sang Won Chung and Jae Kyeong Jeong Department of Electronic Engineering, Hanyang University</p>
TP1-025	<p><b>Effect of Ti Interlayer on Ferroelectric HZO Thin Film</b></p> <p>Jaeyoung Joo, Ju-young Jeong, Yoogeun Han, and Hyunchul Sohn Department of Materials Science and Engineering, Yonsei University</p>
TP1-026	<p><b>Optimization of Al-doped HfO<sub>2</sub>/ZrO<sub>2</sub> Layered Structure for Improving Electrical Characteristics</b></p> <p>Yeon-Ji Jeon, Seung Won Lee, and Ji-Hoon Ahn Department of Materials Science and Chemical Engineering, Hanyang University</p>
TP1-027	<p><b>Investigation of IWO TFT for Enhanced Electrical Performance and Long-term Stability Compared to IGZO TFT</b></p> <p>Hyun-Sik Choi, Ki-Ju Park, and Won-Ju Cho Department of Electronic Materials Engineering, Kwangwoon University</p>
TP1-028	<p><b>Inherent Area-selective Atomic Layer Deposition of SiO<sub>2</sub></b></p> <p>Quang Khanh Nguyen, Juyeong Lee, and Myung Mo Sung Department of Chemistry, Hanyang University</p>
TP1-029	<p><b>Inducing the Tetragonal-phase HfO<sub>2</sub> in ZrO<sub>2</sub>/HfO<sub>2</sub> Stack by Introducing the Controlled Interfacial Layer</b></p> <p>Woo Young Park<sup>1,2</sup>, In kyu Lee<sup>1,2</sup>, Young Uk Ryu<sup>1,2</sup>, and Woojin Jeon<sup>1,2</sup> <sup>1</sup>Department of Advanced Materials Engineering for Information and Electronics, Kyung Hee University, <sup>2</sup>Integrated Education Program for Frontier Science &amp; Technology (BK21 Four), Kyung Hee University</p>
TP1-030	<p><b>Hybrid Reactant of HfO<sub>2</sub> Atomic Layer Deposition Process for Metal-insulator-metal Capacitor Applications</b></p> <p>In Gyu Lee<sup>1,2</sup>, Woo Young Park<sup>1,2</sup>, Young Uk Ryu<sup>1,2</sup>, and Woojin Jeon<sup>1,2</sup> <sup>1</sup>Department of Advanced Materials Engineering for Information and Electronics, Kyung Hee University, <sup>2</sup>Integrated Education Program for Frontier Science &amp; Technology (BK21 Four), Kyung Hee University</p>
TP1-032	<p><b>Effects of Electrode Configuration on the Electrical Properties of PEALD HZO Ferroelectric Capacitors</b></p> <p>Ha Jeong Kim, Won Ji Park, and Hee Chul Lee Department of Advanced Materials Engineering, Tech University of Korea</p>
TP1-033	<p><b>Characterization of HZO Films Prepared by Co-Plasma Atomic Layer Deposition for Ferroelectric Memory Application</b></p> <p>Won Ji Park, Jae Hoon Yu, and Hee Chul Lee Department of Advanced Materials Engineering, Tech University of Korea</p>

TP1-034	<p><b>Study of Reactant Gas Characteristics of Silicon Nitride Thin Film Deposited Using 27.12 MHz Frequency</b></p> <p>B.J. Lee<sup>1,2</sup>, H.C. Cho<sup>1,2</sup>, M.H. Cheon<sup>1,2</sup>, H.S. Ru<sup>1,2</sup>, H.C. Moon<sup>1,2</sup>, R. Woo<sup>1,2</sup>, D.W. Seo<sup>1,2</sup>, and J.W. Choi<sup>1,2</sup></p> <p><sup>1</sup>Vacuum Equipment R&amp;D Division, Hanwha Corporation, <sup>2</sup>Semiconductor Research Center, Hanwha Corporation</p>
TP1-035	<p><b>Failure Analysis of Ovonic Threshold Switch from a Thermal Perspective</b></p> <p>Ju Hwan Park<sup>1</sup>, Myeong Jun Jung<sup>1</sup>, Hyun Wook Kim<sup>1</sup>, Su Yeon Lee<sup>2</sup>, Jae Hyuck Jang<sup>3</sup>, Gun Hwan Kim<sup>4</sup>, Min Kyu Yang<sup>2</sup>, and Byung Joon Choi<sup>1</sup></p> <p><sup>1</sup>Department of Materials Science and Engineering, Seoul National University of Science and Technology, <sup>2</sup>Division of AI Convergence Engineering, Sahmyook University, <sup>3</sup>Electron Microscopy and Spectroscopy Team, KBSI, <sup>4</sup>Department of Materials Science and Engineering, Yonsei University</p>
TP1-036	<p><b>Superior Infrared Reflectance and Sheet Resistance of ITO/Ag/ITO/Ag/ITO(IAlAl) Structure as Electrode of Transparent Photovoltaics</b></p> <p>Chanhyuk Choi, JungHyun Lee, and Joondong Kim</p> <p>Department of Electrical Engineering, Incheon National University</p>
TP1-037	<p><b>Functional Design of Optically Transparent Windows by Using Macleod Simulation</b></p> <p>JungHyun Lee, ChanHyuk Choi, and Joondong Kim</p> <p>Incheon National University</p>
TP1-038	<p><b>Implementation of Integrate-and-Fire (IF) Characteristics Using Oxide-based 1T-Neuron</b></p> <p>Jaehee Lee<sup>1,2</sup>, Jieun Kim<sup>1,2</sup>, and Jung Wook Lim<sup>1,2</sup></p> <p><sup>1</sup>ETRI, <sup>2</sup>UST</p>
TP1-039	<p><b>Development of Visible-NIR Responsive Nanoporous Morphology on Large-scale IGZO and Realization of High-performance Image Sensor</b></p> <p>Jaeseong Kim, Anamika Sen, Chaeyoung Im, and Sunkook Kim</p> <p>Department of Advanced Materials Science Engineering, Sungkyunkwan University</p>
TP1-040	<p><b>TiO<sub>2</sub> Interlayer를 이용한 Al/ZnO 접촉저항 개선</b></p> <p>윤성빈<sup>1,2</sup>, 김기영<sup>1,2</sup>, 이해원<sup>1,2</sup>, 김민재<sup>1,2</sup>, 황현준<sup>1,2</sup>, 이병훈<sup>1,2</sup></p> <p><sup>1</sup>CSTC, POSTECH, <sup>2</sup>Department of Electrical Engineering, POSTECH</p>
TP1-041	<p><b>Enhanced Performance and Stability of 2D Sn Halide Perovskite Transistor by Incorporating Alkylammonium Halide Additives</b></p> <p>Hakjun Kim, Bum Ho Jeong, Jongmin Lee, and Hui Joon Park</p> <p>Department of Organic and Nano Engineering, Hanyang University</p>
TP1-042	<p><b>극박막 상복합 ZnO 영미분전도소자의 1/f 노이즈 특성 연구</b></p> <p>이해원<sup>1,2</sup>, 김승모<sup>1,2</sup>, 이용수<sup>1,2</sup>, 김민재<sup>1,2</sup>, 전재현<sup>1,2</sup>, 황현준<sup>1,2</sup>, 이병훈<sup>1,2</sup></p> <p><sup>1</sup>CSTC, POSTECH, <sup>2</sup>Department of Electrical Engineering, POSTECH</p>
TP1-043	<p><b>Performance Improvement of Indium Oxide TFTs with Tungsten Doping</b></p> <p>Juwon Kim<sup>1</sup>, Hyun-Sik Choi<sup>2</sup>, Won-Ju Cho<sup>2</sup>, and Hamin Park<sup>1</sup></p> <p><sup>1</sup>Department of Electronic Engineering, Kwangwoon University, <sup>2</sup>Department of Electronic Materials Engineering, Kwangwoon University</p>
TP1-044	<p><b>플라즈마 처리를 이용한 Tellurium FET 의 히스테리시스 개선</b></p> <p>김규현<sup>1,2</sup>, 김민재<sup>1,2</sup>, 이용수<sup>1,2</sup>, 김승모<sup>1,2</sup>, 이해원<sup>1,2</sup>, 황현준<sup>1,2</sup>, 이병훈<sup>1,2</sup></p> <p><sup>1</sup>CSTC, POSTECH, <sup>2</sup>Department of Electrical Engineering, POSTECH</p>
TP1-045	<p><b>수직 적층 공정을 이용한 ZnO/Te 상보형 전계 효과 트랜지스터</b></p> <p>김기영<sup>1,2</sup>, 김민재<sup>1,2</sup>, 이용수<sup>1,2</sup>, 이해원<sup>1,2</sup>, 전재현<sup>1,2</sup>, 윤성빈<sup>1,2</sup>, 황현준<sup>1,2</sup>, 이병훈<sup>1,2</sup></p> <p><sup>1</sup>CSTC, POSTECH, <sup>2</sup>Department of Electrical Engineering, POSTECH</p>

TP1-046	<p><b>Stable Ferroelectric Properties of Sub-5 nm Hafnium-Zirconium-Oxide Thin Films Deposited via Atomic Layer Deposition</b></p> <p>Gunho Kim<sup>1</sup>, Hyo-Bae Kim<sup>1</sup>, Wonwoo Kho<sup>2</sup>, Yoomi Kang<sup>2</sup>, Seung-Eon Ahn<sup>3</sup>, and Ji-Hoon Ahn<sup>1</sup></p> <p><sup>1</sup>Department of Materials Science and Chemical Engineering, Hanyang University, <sup>2</sup>Department of IT · Semiconductor Convergence Engineering, Tech University of Korea, <sup>3</sup>Department of Nano &amp; Semiconductor Engineering, Tech University of Korea</p>
TP1-047	<p><b>Fabrication of TiO<sub>2</sub> Dispersion Strengthened Nb-based Alloy by Atomic Layer Deposition</b></p> <p>Ji Young Park, Ji Hyeon Jeon, Sumin Eun, Eui Seon Lee, Eunho Ma, Min Seob Jeong, Byoungchul Hwang, Jongmin Byun, Sung-Tag Oh, and Byung Joon Choi</p> <p>Department of Materials Science and Engineering, Seoul National University of Science and Technology</p>
TP1-048	<p><b>Thermal ALD Novel Mo Precursor for Low Resistivity MoN Thin Film Formation</b></p> <p>Myeong-Ho Kim, Yun-Gyeong Yi, Su-min Kim, In-Jae Lee, and Jin-Sik Kim</p> <p>UP Chemical</p>
TP1-049	<p><b>Physical Properties of GeS<sub>x</sub> Thin Films Deposited by RF Sputtering</b></p> <p>Ju Sung Kim, Wan Sun Kim, and Hyunchul Sohn</p> <p>Department of Materials Science and Engineering, Yonsei University</p>
TP1-050	<p><b>Threshold Switching Characteristics of (ZnTe)<sub>x</sub>(ZnS)<sub>1-x</sub> Chalcogenide Alloy Deposited by RF Sputtering</b></p> <p>Wansun Kim, Jusung Kim, and Hyunchul Sohn</p> <p>Department of Materials Science and Engineering, Yonsei University</p>
TP1-051	<p><b>Achieving Molecular Alignment in Semiconducting Polymers: A Step towards Improved Electrical Performance</b></p> <p>Jin Seok Yoon, Nak Hee Kang, Sam Nyung Yi, Hyung Soo Ahn, Kyung Hwa Kim, and Young Tea Chun</p> <p>Division of Electronics and Electrical Information Engineering, Korea Maritime and Ocean University</p>
TP1-052	<p><b>Atomic Layered Deposition of SnO<sub>2</sub> Thin Films Using a Novel Sn Precursor</b></p> <p>Jeong Eun Shin<sup>1</sup>, Heesun Kim<sup>2</sup>, Bo Keun Park<sup>2</sup>, and Jeong Hwan Han<sup>1</sup></p> <p><sup>1</sup>Department of Materials Science and Engineering, Seoul National University of Science and Technology, <sup>2</sup>Thin Film Materials Research Center, KRICT</p>
TP1-053	<p><b>Effect of Electrodes on (NiO)<sub>x</sub>(La<sub>2</sub>O<sub>3</sub>)<sub>1-x</sub> Thin Films</b></p> <p>Jeongwoo Lee and Hyunchul Sohn</p> <p>Department of Materials Science and Engineering, Yonsei University</p>
TP1-054	<p><b>40.68 &amp; 60 MHz 주파수를 이용한 2단계 PE-ALD 공정이 적용된 Silicon Nitride 박막의 특성 비교</b></p> <p>Da-Eun Bae<sup>1</sup>, Hyung Min Kim<sup>1</sup>, Sang Ick Lee<sup>2</sup>, Jae Ho Choi<sup>1</sup>, and Jae Hak Jeong<sup>1</sup></p> <p><sup>1</sup>CN1 Co., Ltd., <sup>2</sup>DNF Co., Ltd.</p>
TP1-055	<p><b>Random-Network Silicon Nanowire Channel Based High-Performance Ca<sup>2+</sup> -Selective Dual-Gate Ion Sensitive Field-Effect Transistors</b></p> <p>Tae-Gyu Hwang, Tae-Hwan Hyun, and Won-Ju Cho</p> <p>Department of Electronic Materials Engineering, Kwangwoon University</p>
TP1-056	<p><b>Morphotropic Phase Boundary 구조를 갖는 Hf 유전막 특성 연구</b></p> <p>이찬빈, 김승모, 황현준, 이병훈</p> <p>CSTC, Department of Electrical Engineering, POSTECH</p>
TP1-057	<p><b>Thermal Annealing of Solution-Processed P-type NiO Transistor</b></p> <p>Yerim Lee<sup>1</sup>, Tae-Gyu Hwang<sup>2</sup>, Won-Ju Cho<sup>2</sup>, and Hamin Park<sup>1</sup></p> <p><sup>1</sup>Department of Electronic Engineering, Kwangwoon University, <sup>2</sup>Department of Electronic Materials Engineering, Kwangwoon University</p>

## D. Thin Film Process Technology **분과**

ZONE 2 (2층 로비)

<p>TP1-058</p>	<p><b>Supercycle of AIO and HfO Using Atomic Layer Deposition for Nanolaminate Capacitor</b> Hyunseok Son, Beomhee Yoon, Hyunho Lee, and Hamin Park Department of Electronic Engineering, Kwangwoon University</p>
<p>TP1-059</p>	<p><b>LiNbO<sub>3</sub> Thin Film for Photonics Devices by Sputtering Method</b> Namhoon Kim<sup>1,2</sup>, Seunghwi Koo<sup>1,2</sup>, Haeri Park<sup>1,3</sup>, Roju Chae<sup>1,3</sup>, Heonjin Choi<sup>2</sup>, and Donghee Park<sup>1</sup> <sup>1</sup>KIST, <sup>2</sup>Department of Material Science and Engineering, Yonsei University, <sup>3</sup>School of Electrical Engineering, Korea University</p>
<p>TP1-060</p>	<p><b>Study of Metal-doped Zinc Oxide-Based Electron Extraction Layer to Improved Performance of Inverted Organic Photodetectors</b> Jaebum Jeong and Jun Young Kim Department of Semiconductor Engineering, Gyeongsang National University</p>
<p>TP1-061</p>	<p><b>A Study of Defect Control Through Heat Transfer in a Furnace System</b> Daeman Seo<sup>1,2</sup>, Sungman Lee<sup>1</sup>, Sungho Jegal<sup>1</sup>, Seungjae Baek<sup>1</sup>, and Inho Lee<sup>2</sup> <sup>1</sup>Device Solution, Samsung Electronics Co., Ltd., <sup>2</sup>Major of Electronic Engineering, Hankyong National University</p>
<p>TP1-062</p>	<p><b>Analysis of Growth Behavior and Electrical Property of TiO<sub>2</sub> Thin Film by Atomic Layer Deposition</b> Jae Hun Hwang, Jong ho Song, and Taeyong Eom Thin Film Materials Research Center, KRICT</p>
<p>TP1-063</p>	<p><b>Demonstration of Atomic Layer Deposition of BeO Using Discrete Feeding Method</b> JongHyun Bae<sup>1</sup>, YoonSeo Jang<sup>1</sup>, Juyung Chae<sup>1</sup>, Christopher W. Bielawski<sup>2</sup>, and Jungwoo Oh<sup>1</sup> <sup>1</sup>School of Integrated Technology, Yonsei University, <sup>2</sup>CMCM IBS, Department of Chemistry, UNIST</p>
<p>TP1-064</p>	<p><b>Understanding Al<sub>2</sub>O<sub>3</sub> Infiltration in PDMS via Atomic Layer Deposition</b> Pengfei Liu<sup>1</sup> and In Soo Kim<sup>1,2</sup> <sup>1</sup>KIST, <sup>2</sup> Sungkyunkwan University</p>
<p>TP1-065</p>	<p><b>Accurate Regulation of Dopant Distribution in both Lateral and Vertical Directions in Sn-doped In<sub>2</sub>O<sub>3</sub> Grown via Atomic Layer Deposition</b> Tae Seok Kim<sup>1,2</sup>, Han Kim<sup>1,2</sup>, and Seong Keun Kim<sup>1,2</sup> <sup>1</sup>KU-KIST Graduate School of Converging Science and Technology, Korea University, <sup>2</sup>Electronic Materials Research Center, KIST</p>

TP1-066	<p><b>Growth Characteristics and Film Properties of Molybdenum Oxide Thin Films by Atomic Layer Deposition with Different Oxygen Sources</b></p> <p>Haram Yang<sup>1</sup>, Hyeongjun Kim<sup>2</sup>, and Woongkyu Lee<sup>1</sup></p> <p><sup>1</sup>Department of Materials Science and Engineering, Soongsil University, <sup>2</sup>Department of Green Chemistry and Materials Engineering, Soongsil University</p>
TP1-067	<p><b>Novel Molybdenum N-alkoxy Carbothioamide Complexes for 2D MoS<sub>2</sub> Thin Films</b></p> <p>Sung Kwang Lee<sup>1,2</sup>, Seung Uk Son<sup>2</sup>, and Taek-Mo Chung<sup>1,3</sup></p> <p><sup>1</sup>Thin Film Materials Research Center, KRICT, <sup>2</sup>Department of Chemistry, Sungkyunkwan University, <sup>3</sup>Department of Chemical Convergence Materials, UST</p>
TP1-068	<p><b>Inhibitor Assisted Si-HfO<sub>2</sub> ALD Process to Improve Si Doping Uniformity</b></p> <p>Duck Hyeon Seo, Jae Min Kim, Ha Na Kim, Ji Yeon Han, Hyeon Sik Cho, Ju Hwan Jung, Hyun Ju Jung, Sun Young Baik, and Kyu Ho Cho</p> <p>EGTM Co. R&amp;D Center</p>
TP1-069	<p><b>Characterization of Capacitors with ITO/HfAlO(HAO)/ITO Structures Deposited by RF-sputtering Operated at Low Frequency</b></p> <p>In-Pyo Hong, He Rui, Ma-Ro Kim, and Chung Wung Barki</p> <p>Gachon University</p>
TP1-070	<p><b>Improving Electrical Properties Using New Al Precursor for Doping</b></p> <p>Sung-Woo Ahn, Jae-Young Min, Ki-Chang Song, and Dr. Jin-Sik Kim</p> <p>UP Chemical</p>
TP1-071	<p><b>Characteristics of Molybdenum Dioxide Atomic Layer Deposition Process</b></p> <p>Hyun June Park, Min Su Cho, and Sung Woong Chung</p> <p>POSTECH</p>
TP1-072	<p><b>Experimental Realization Strain-induced Room Temperature Ferroelectricity in SrMnO<sub>3</sub> Thin Films on Si and Nb-SrTiO<sub>3</sub> Substrates through RF-sputtering High-Temperature Deposition</b></p> <p>Rui He, Maro Kim, and ChungWung Bark</p> <p>Gachon University</p>
TP1-073	<p><b>Delay Time Variation with Applied Voltage Pulses in Te-Based Ovonic Threshold Switching Selectors</b></p> <p>Sangyeop Kim<sup>1,2</sup>, Young-Min Kim<sup>1,2</sup>, Su-Bong Lee<sup>1</sup>, and Jong-Souk Yeo<sup>1,2</sup></p> <p><sup>1</sup>School of Integrated Technology, College of Computing, Yonsei University, <sup>2</sup>BK21 Graduate Program in Intelligent Semiconductor Technology</p>
TP1-074	<p><b>Growth of Scandium - doped Aluminum Nitride Thin Films by Plasma Enhanced Atomic Layer Deposition</b></p> <p>Seung Hoon Oh, Hyeon Roh, and Taeyong Eom</p> <p>Thin Film Materials Research Center, KRICT</p>

TP1-075	<p><b>Ferroelectricity of <math>\text{Hf}_x\text{Zr}_{1-x}\text{O}_2</math> Thin Films Deposited on Epitaxial TiN Bottom Electrodes</b></p> <p>Yoogeun Han, Ju-Young Jeong, Jaeyoung Joo, and Hyunchul Sohn Department of Materials Science and Engineering, Yonsei University</p>
TP1-076	<p><b>New Tin Sulfide Precursor for Semiconductor Materials</b></p> <p>Heenang Choi<sup>1,2</sup> and Taek-Mo Chung<sup>1,3</sup></p> <p><sup>1</sup>Thin Film Materials Research Center, KRICT, <sup>2</sup>Department of Chemistry, Sungkyunkwan University, <sup>3</sup>Department of Chemical Convergence Materials, UST</p>
TP1-077	<p><b>Atomic Layer Deposition of <math>\text{In}_2\text{O}_3</math> with Different Temperatures for n-Type Oxide Semiconductors</b></p> <p>Kyunghun Lyu<sup>1</sup>, Jaejun Lee<sup>2</sup>, and Woongkyu Lee<sup>1,2</sup></p> <p><sup>1</sup>Department of Materials Science and Engineering, Soongsil University, <sup>2</sup>Department of Green Chemistry and Materials Engineering, Soongsil University</p>
TP1-078	<p><b>Combined Experimental and DFT Analysis of Initial Adsorption Behavior in <math>\text{ZrHfO}_2</math> Thin Films on TiN Surface</b></p> <p>Jeong Hyeon Park, Jenam Kim, and Woojin Jeon Department of Advanced Materials Engineering for Information and Electronics, and Integrated Education Program for Frontier Science &amp; Technology (BK21 Four), Kyung Hee University</p>
TP1-079	<p><b>Enhancement of Resistance Switching Behavior of <math>\text{Au}/\text{TiO}_2/\text{Au}</math> Memristors on PDMS Substrate with Pyramid Structure</b></p> <p>Jaejun Lee<sup>1</sup>, Kyunghun Lyu<sup>2</sup>, and Woongkyu Lee<sup>1,2</sup></p> <p><sup>1</sup>Department of Green Chemistry and Materials Engineering, Soongsil University, <sup>2</sup>Department of Materials Science and Engineering, Soongsil University,</p>
TP1-080	<p><b>Effects on Electrical Properties of <math>\text{TiO}_2</math>-Based Capacitors by Improving Bulk and Interface Properties</b></p> <p>Taehyun Kim<sup>1</sup>, Daeun Lim<sup>2</sup>, Juan Hong<sup>2</sup>, and Woongkyu Lee<sup>1,2</sup></p> <p><sup>1</sup>Department of Green Chemistry and Materials Engineering, Soongsil University, <sup>2</sup>Department of Materials Science and Engineering, Soongsil University</p>
TP1-081	<p><b>Contact Resistance Improvement of a-IGZO TFT by Inserting ALD Based AZO Interlayer</b></p> <p>Dongseon Kim and Jae Kyeong Jeong Department of Electronic Engineering, Hanyang University</p>
TP1-082	<p><b>Development of High-performance Broadband Photodetectors Using Hydrogen Plasma-treated IGZO Thin Films</b></p> <p>Hyun <b>철회</b> <sup>1,2</sup>, and SunKook Kim<sup>1</sup></p> <p><sup>1</sup>Multifunctional Nano Bio Electronics Lab, School of Advanced Materials Science and Engineering, Sungkyunkwan University, <sup>2</sup>Swiss Federal Institute of Technology Lausanne</p>
TP1-083	<p><b>Growth of Highly Dense and Conformal GeSe Thin Films by Thermal Atomic Layer Deposition</b></p> <p>Ye Bin Weon<sup>1</sup>, Hyunwook Kim<sup>1</sup>, Junyoung Lim<sup>2</sup>, David Ahn<sup>2</sup>, and Byung Joon Choi<sup>1</sup></p> <p><sup>1</sup>Department of Materials Science and Engineering, Seoul National University of Science and Technology, <sup>2</sup>R&amp;D Division, SK hynix Inc.</p>
TP1-084	<p><b>Study on Multi-layer Stacking Effects of Oxide-Based Thin-films</b></p> <p>Jinyeong Lee, Sungbin Jo, and Jaewook Jeong School of Information and Communication Engineering, Chungbuk National University</p>
TP1-085	<p><b>Atomic Layer Deposition of Ir Thin Films with Tricarbonyl (1,2,3-<math>\eta</math>)-1,2,3-tri(tert-butyl)-cyclopropenyl Iridium (TICP) and <math>\text{O}_3</math></b></p> <p>Han Kim<sup>1,2</sup>, Hong Keun Chung<sup>2,3</sup>, Tae Seok Kim<sup>1,2</sup>, and Seong Keun Kim<sup>1,2</sup></p> <p><sup>1</sup>KU-KIST Graduate School of Converging Science and Technology, Korea University, <sup>2</sup>Electronic Materials Research Center, KIST, <sup>3</sup>Department of Materials Science and Chemical Engineering, Hanyang University</p>



<p>TP1-086</p>	<p><b>Enhancing the Electrical Properties of TiN/ZrO<sub>2</sub>/TiN MIM Capacitor with In<sub>2</sub>O<sub>3</sub> Buffer Layer by Atomic Layer Deposition</b></p> <p>Yoona Choi<sup>1,2</sup>, Seungwoo Lee<sup>1,2</sup>, Donghyun Kim<sup>3</sup>, Hansol Oh<sup>3</sup>, Yongjoo Park<sup>3</sup>, and Woojin Jeon<sup>1,2</sup></p> <p><sup>1</sup>Department of Advanced Materials Engineering for Information and Electronics, Kyung Hee University, <sup>2</sup>Integrated Education Program for Frontier Science &amp; Technology (BK21 Four), Kyung Hee University, <sup>3</sup>Advanced Research Development Team, SK Trichem Co., Lt</p>
<p>TP1-087</p>	<p><b>Controlling Electrical Properties of ZrO<sub>2</sub>-Based Metal-insulator-metal Capacitor via Gd Doping without Sacrificing Tetragonality</b></p> <p>Seungwoo Lee<sup>1,2</sup>, Yoona Choi<sup>1,2</sup>, Jonghwan Jeong<sup>1,2</sup>, Jihun Nam<sup>1,2</sup>, Han sol Oh<sup>3</sup>, Hanbyul Kim<sup>3</sup>, Yongjoo Park<sup>3</sup>, and Woojin jeon<sup>1,2</sup></p> <p><sup>1</sup>Department of Advanced Materials Engineering for Information and Electronics, Kyung Hee University, <sup>2</sup>Integrated Education Program for Frontier Science &amp; Technology (BK21 Four), Kyung Hee University, <sup>3</sup>Advanced Research Development Team, SK Trichem Co., Lt</p>
<p>TP1-088</p>	<p><b>Thermal Atomic Layer Deposition of Aluminum Nitride Thin Film Using Tris(dimethylamido)aluminum and Ammonia</b></p> <p>Okhyeon Kim, Hyunmin Han, Yerim Choi, Jian Heo, Changgyu Kim, Hye-Lee Kim, and Won-Jun Lee</p> <p>Department of Nanotechnology and Advanced Materials Engineering, Sejong University</p>
<p>TP1-089</p>	<p><b>Thermal Atomic Layer Deposition of Gallium Nitride Films Using Tris(dimethylamido)gallium and Ammonia</b></p> <p>Yerim Choi, Okhyeon Kim, Jian Heo, Hye-Lee Kim, and Won-Jun Lee</p> <p>Department of Nanotechnology and Advanced Materials Engineering, Sejong University</p>
<p>TP1-090</p>	<p><b>Study of Electrical Properties of Vanadium Dioxide Thin Films on TiN by Reactive Sputtering</b></p> <p>Seunghwi Koo<sup>1,2</sup>, Haeri Park<sup>1,3</sup>, Namhoon Kim<sup>1,2</sup>, Roju Chae<sup>1,3</sup>, Heonjin Choi<sup>2</sup>, and Donghee Park<sup>1</sup></p> <p><sup>1</sup>Center for Opto-Electronic Materials and Devices, Post-Silicon Semiconductor Institute, KIST, <sup>2</sup>Materials Science and Engineering, Yonsei University, <sup>3</sup>School of Electrical Engineering, Korea University</p>
<p>TP1-091</p>	<p><b>Preparation of Cubic-phase-stabilized Y-doped ZrO<sub>2</sub> Nanoparticles and Thin Films by Solution Methods for SOFC Application</b></p> <p>Taeyoon Kim<sup>1</sup>, Yunbin Kim<sup>2</sup>, and Sangmoon Park<sup>1,2,3</sup></p> <p><sup>1</sup>Department of Electronics-Energy Materials, Silla University, <sup>2</sup>Division of Energy and Chemical Engineering Major in Energy and Applied Chemistry, Silla University, <sup>3</sup>Department of Fire Protection and Safety Management, Silla University</p>
<p>TP1-092</p>	<p><b>Strategies for Precision Control of the Interfacial Layer in ZrO<sub>2</sub>(or HfO<sub>2</sub>)/TiN Structures for DRAM Capacitors</b></p> <p>Myoung Su Jang<sup>1,2</sup>, Ji Hoon Jeon<sup>1,2</sup>, Taikyu Kim<sup>2</sup>, and Seong Keun Kim<sup>1,2</sup></p> <p><sup>1</sup>KU-KIST Graduate School of Converging Science and Technology, Korea University, <sup>2</sup>Electronic Materials Research Center, KIST</p>
<p>TP1-093</p>	<p><b>Variation in Carrier Concentration and Sheet Resistance of Atomic-Layer Deposited InGaSnO Thin Films with Controlling Process Temperatures</b></p> <p>Jae-Hyuk Yoo<sup>1</sup>, Shin-Ho Noh<sup>1</sup>, Young-Ha Kwon<sup>2</sup>, Nak-Jin Seong<sup>2</sup>, Kyu-Jeong Choi<sup>2</sup>, and Sung-Min Yoon<sup>1</sup></p> <p><sup>1</sup>Kyung Hee University, <sup>2</sup>NCD Co., Ltd.</p>
<p>TP1-094</p>	<p><b>Effects of Crystal Structures of TiO<sub>2-x</sub> Film on Their Thermistor Resistance</b></p> <p>Haeri Park<sup>1,2</sup>, Jeongeun Mo<sup>1,3</sup>, Won jun Choi<sup>1</sup>, Gyutae Kim<sup>2</sup>, and Donghee Park<sup>1</sup></p> <p><sup>1</sup>KIST, <sup>2</sup>School of Electrical Engineering, Korea University, <sup>3</sup>School of Advanced Materials Science and Engineering, Sungkyunkwan University</p>

TP1-095	<p><b>Dielectric Engineering for High-Performance Top Gate SnO Thin-Film Transistors toward Vertically Stacked Complementary Inverters</b></p> <p>MinKi Choe<sup>1</sup>, Seung Ho Ryu<sup>2,3</sup>, Taeyong Eom<sup>4</sup>, Taek-Mo Chung<sup>4</sup>, Seong Keun Kim<sup>2,3</sup>, and In-Hwan Baek<sup>1</sup></p> <p><sup>1</sup>Department of Chemical Engineering, Inha University, <sup>2</sup>KU-KIST Graduate School of Converging Science and Technology, Korea University, <sup>3</sup>Electronic Materials Research Center, KIST, <sup>4</sup>Division of Advanced Materials, KRICT</p>
TP1-096	<p><b>Area-selective-deposition (ASD) of Ruthenium (Ru) Thin Film Using Self-assembled Monolayer (SAM) through Surface Modification</b></p> <p>Ji hyeon Sim, Chae Won Kim, Hyun Jin Lim, Ki Sub Kim, Hyeong Jun Kim, Hyo Jin Ahn, and Changhwan Choi</p> <p>Division of Materials Science and Engineering, Hanyang University</p>
TP1-097	<p><b>Tailoring of Ferroelectric Coercive Field and Polarization of MFM Capacitors with Hf<sub>x</sub>Zr<sub>1-x</sub>O<sub>2</sub> Bilayer Structure</b></p> <p>Geon Park and Rino Choi</p> <p>3D Convergence Center and Materials Science and Engineering, Inha University</p>
TP1-098	<p><b>Optoelectronic-synaptic Properties of ReS<sub>2</sub>/MoS<sub>2</sub> Hetero-structure Synthesized by Chemical Vapor Deposition</b></p> <p>Dong Geun Kim, Seung Won Lee, and Ji-Hoon Ahn</p> <p>Department of Materials Science and Chemical Engineering, Hanyang University</p>
TP1-099	<p><b>Correlation between I-V and C-V Characteristics of InGaZnO TFTs Having AlO<sub>x</sub> Gate Insulator</b></p> <p>Jaehyun Ahn, Seungkyun Ham, and Jaewook Jeong</p> <p>School of Information and Communication Engineering, Chungbuk National University</p>
TP1-100	<p><b>The Effect of Seed Layer Engineering on the Performance of HZO-Based Ferroelectric Field Effect Transistor (FeFET)</b></p> <p>JunHyeok Park<sup>1</sup>, Chulwon Chung<sup>2</sup>, Boncheol Ku<sup>1</sup>, Seung Hyeon Yun<sup>1</sup>, Kyungsoo Park<sup>1</sup>, Yu Jeong Choi<sup>1</sup>, and Changhwan Choi<sup>1</sup></p> <p><sup>1</sup>Division of Materials Science and Engineering, Hanyang University, <sup>2</sup>Department of Energy Engineering, Hanyang University</p>
TP1-101	<p><b>8-inch MgO Thin Film Technology for Next-Generation Memory Applications</b></p> <p>Giryun Hong, Beomjoo Ham, Jongseo Park, Jehyun An, Bohyeon Kang, Sung-min Ahn, and Rock-Hyun Baek</p> <p>Department of Electrical Engineering, POSTECH</p>
TP1-102	<p><b>Development of ALD Based VO<sub>2</sub> Thin Film Formation Process Technology and Implementation of Firing Type Threshold Switching Device</b></p> <p>Yong Tae Kim<sup>1</sup>, Yewon Seo<sup>2</sup>, Pyeongkang Hur<sup>2</sup>, Junwoo Son<sup>2</sup>, and Jaeyeong Heo<sup>1</sup></p> <p><sup>1</sup>Chonnam National University, <sup>2</sup>POSTECH</p>
TP1-103	<p><b>Vertical Side-Wall MoS<sub>2</sub> Channel Transistors : Thicknesses of 0.65nm and 6.5nm</b></p> <p>Ki Han Kim<sup>1</sup>, Huimin Lee<sup>2</sup>, Joonki Suh<sup>2</sup>, and Byung Chul Jang<sup>1</sup></p> <p><sup>1</sup>School of Electronic and Electrical Engineering, Kyungpook National University, <sup>2</sup>Department of Materials Science and Engineering, UNIST</p>
TP1-104	<p><b>Multiply and Accumulate Operation with 1 Selector 1 RRAM Device 1K Crossbar Arrays</b></p> <p>June Hyuk Lee, Su Yeon Lee, Hyun Kyu Seo, Se Yeon Jeong, Min Kyung Lee, and Min Kyu Yang</p> <p>Intelligent Electronic Device Lab, Sahmyook University</p>
TP1-105	<p><b>HfO<sub>x</sub>-Based Synaptic Memristor for Neuromorphic Computing</b></p> <p>Se Yeon Jeong, Hyun Kyu Seo, Su Yeon Lee, June hyuk Lee, Min Kyung Lee, and Min Kyu Yang</p> <p>Intelligent Electronic Device Lab, Sahmyook University</p>

TP1-106	<p><b>High Mobility Oxide Thin Film Transistor with Amorphous In-Ga-Sn-O Fabricated by RF-magnetron Sputtering</b></p> <p>Hyunil Jo<sup>1</sup>, Juhan Kim<sup>1</sup>, Sumi Kim<sup>1</sup>, Eunji Kim<sup>1</sup>, Yugyu Jang<sup>1</sup>, Myeongcheol Jo<sup>1</sup>, Boram Shin<sup>1</sup>, Yiryeong Choi<sup>1</sup>, Joon-Hyung Lee<sup>1</sup>, Byeong-Seong Jeong<sup>2</sup>, and Young-Woo Heo<sup>1</sup></p> <p><sup>1</sup>School of Materials Science and Engineering, Kyungpook National University, <sup>2</sup>Department of Hydrogen and Renewable Energy, Kyungpook National University,</p>
TP1-107	<p><b>Methane Gas Detection Sensors based on Carbon Nano Tube</b></p> <p>Da Gyo Yoo, Kyung Eun Kim, Ryang Ha Kim, and Young Lae Kim</p> <p>Department of Electronic Engineering, Gangneung-Wonju National University</p>
TP1-108	<p><b>Nitric Oxide Gas Detection and Analysis by Single-walled Carbon Nanotubes-Based Sensor</b></p> <p>Kyung Eun Kim, Ryang Ha Kim, and Young Lae Kim</p> <p>Gangneung-Wonju National University</p>
TP1-109	<p><b>Mechanism of Hydrogen-Induced Negative Threshold Voltage Shift in InSnZnO TFT under Positive Bias Temperature Stress</b></p> <p>Seong-In Cho and Sang-Hee Ko Park</p> <p>KAIST</p>
TP1-110	<p><b>Non-volatile Behavior in ZrO<sub>2</sub>-Based Ferroelectric-like Memory Devices Using Asymmetric Metal Work-function Engineering</b></p> <p>SeungHyeon Yun<sup>1</sup>, Chulwon Chung<sup>2</sup>, Boncheol Ku<sup>1</sup>, Junhyeok Park<sup>1</sup>, Kyungsoo Park<sup>1</sup>, Yu Jeong Choi<sup>1</sup>, and Changhwan Choi<sup>1</sup></p> <p><sup>1</sup>Division of Materials Science and Engineering, Hanyang University, <sup>2</sup>Department of Energy Engineering, Hanyang University</p>
TP1-111	<p><b>Improved DRAM Electrode/Dielectric Interface Properties Using Nb<sub>2</sub>O<sub>5</sub> and Ta<sub>2</sub>O<sub>5</sub> Ultrathin Layer</b></p> <p>Yong ju Kwon, Woo hyuk Kim, and Woo-Hee Kim</p> <p>Department of Materials Science and Chemical Engineering, BK21 FOUR ERICA-ACE Center, Hanyang University</p>
TP1-112	<p><b>Develop Behavior of Low Temperature Chemical Vapor Deposited Sn-Based Inorganic Dry Resist for Next-generation EUV Lithography</b></p> <p>Hye Kyung Kim and Woo-Hee Kim</p> <p>Department of Materials Science and Chemical Engineering, Hanyang University</p>
TP1-113	<p><b>Multilevel Switching Behavior in Physically Transient Memristor for Biodegradable Electronics</b></p> <p>Mohammad Tauquir Alam Shamim Shaikh<sup>1,2</sup> and You Seung Rim<sup>1,2</sup></p> <p><sup>1</sup>Department of Semiconductor Systems Engineering, Sejong University, <sup>2</sup>Department of Intelligent Mechatronics Engineering and Convergence Engineering for Intelligent Drone, Sejong University</p>
TP1-114	<p><b>Morphology Engineering in Mo-Hf<sub>0.5</sub>Zr<sub>0.5</sub>O<sub>2</sub>-Mo Metal-ferroelectric-metal Capacitor with Surface Pre-treatment</b></p> <p>Seung Yeon Kim, Dong Hee Han, and Woojin Jeon</p> <p>Department of Advanced Materials Engineering for Information and Electronics, Integrated Education Program for Frontier Science &amp; Technology (BK21 Four), Kyung Hee University</p>

## F. Silicon and Group-IV Devices and Integration Technology 분과

ZONE 1 (1층 전시장)

TP1-115	<p><b>수직 적층 실리콘 나노와이어 FBFET의 메모리 특성 연구</b></p> <p>류승호<sup>1</sup>, 조경아<sup>2</sup>, 김상식<sup>1,2</sup>  <sup>1</sup>고려대학교 반도체시스템공학과, <sup>2</sup>고려대학교 전기전자공학과</p>
TP1-116	<p><b>피드백 전계효과 트랜지스터 기반 링 오실레이터 동작 특성 연구</b></p> <p>손재민, 조경아, 김상식          고려대학교 전기전자공학과</p>
TP1-117	<p><b>나노시트 피드백 전계효과 트랜지스터의 Neural Oscillation 동작 연구</b></p> <p>허효주<sup>1</sup>, 신연우<sup>1</sup>, 류승호<sup>2</sup>, 조경아<sup>1</sup>, 김상식<sup>1,2</sup>  <sup>1</sup>고려대학교 전기전자공학과, <sup>2</sup>고려대학교 반도체시스템공학과</p>
TP1-118	<p><b>Radiofrequency Switches based on Vanadium Oxide</b></p> <p>Dahyeon Kim<sup>1</sup>, Jiyeon Ryu<sup>2</sup>, Changwoo Pyo<sup>1</sup>, Seung Chan Lee<sup>1</sup>, Tae-Sik Yoon<sup>2,3</sup>, and Myungsoo Kim<sup>1,2</sup>  <sup>1</sup>Department of Electrical and Computer Engineering, UNIST, <sup>2</sup>Graduate School of Semiconductor Materials and Devices Engineering, UNIST, <sup>3</sup>Department of Materials Science and Engineering, UNIST</p>
TP1-119	<p><b>Characterization Si Micro-single Crystals with Chiral Properties</b></p> <p>Jeongbin Heo<sup>1</sup>, Kyoung Hwa Kim<sup>1</sup>, Suhyun Mun<sup>1</sup>, Seonwoo Park<sup>1</sup>, Hyung Soo Ahn<sup>1</sup>, Jae Hak Lee<sup>1,2</sup>, Min Yang<sup>1</sup>, Young Tea Chun<sup>1</sup>, Sam Nyung Yi<sup>1</sup>, Yeon-Suk Jang<sup>3</sup>, Won Jae Lee<sup>3</sup>, Myeong-Cheol Shin<sup>4</sup>, and Sang-Mo Koo<sup>4</sup>  <sup>1</sup>Department of Nano-Semiconductor Engineering, Korea Maritime and Ocean University, <sup>2</sup>LNBS Co., Ltd., <sup>3</sup>Department of Advanced Materials Engineering, Dong-Eui University, <sup>4</sup>Department of Electronic Materials Engineering, Kwangwoon University</p>
TP1-120	<p><b>HV CMOS 공정에서 인접 소자 영향으로 인한 Parasitic Leakage 개선</b></p> <p>강형근, 이도현, 고대현, 황수진, 이문영, 남명희, 박정수          Department of Technology Development, SK hynix system ic</p>
TP1-121	<p><b>Impact of Work-function Variation in Ferroelectric Field-Effect Transistor</b></p> <p>Su Yeon Jung and Jang Hyun Kim          Department of Intelligence Semiconductor Engineering, Ajou University</p>
TP1-122	<p><b>Effects of Pre-heating Zone on Dopant Activation by Continuous-wave Laser at High Scan Speed</b></p> <p>Dong Hyeok Choi<sup>1</sup>, Seung Hwan Kim<sup>1</sup>, Nak Sun Sung<sup>1</sup>, Sung Wook Jang<sup>2</sup>, and Sang Hee Yang<sup>3</sup>  <sup>1</sup>Laser Advanced Technology Team, AP Systems Co., Ltd., <sup>2</sup>Laser Equipment Department, AP Systems Co., Ltd., <sup>3</sup>Display Equipment Division, AP Systems Co., Ltd.</p>
TP1-123	<p><b>메쉬 타입 플로팅게이트를 이용한 시냅스 트랜지스터 제작</b></p> <p>정소연<sup>1</sup>, 양정목<sup>1</sup>, 김재민<sup>1</sup>, 채수현<sup>1</sup>, 구태환<sup>1</sup>, 장문규<sup>1,2</sup>  <sup>1</sup>School of Nano Convergence Technology, Hallym University, <sup>2</sup>Center of Nano Convergence Technology, Hallym University</p>
TP1-124	<p><b>금 나노 입자 양자점을 이용한 플래시 메모리 기반 시냅스 단일 소자 전기적 특성 연구</b></p> <p>Jae Min Kim<sup>1</sup>, Jeong Mok Yang<sup>1</sup>, So Yeon Jung<sup>1</sup>, Su Hyeon Chae<sup>1</sup>, Tae Hwan Koo<sup>1</sup>, and Moon Gyu Jang<sup>1,2</sup>  <sup>1</sup>School of Nano Convergence Technology, Hallym University, <sup>2</sup>Center of Nano Convergence Technology, Hallym University</p>
TP1-125	<p><b>Large-LRS Vertical ReRAM with Network Semiconductor CNT-Edge Electrodes for Large-scale Array Size</b></p> <p>Sungmin Eum<sup>1</sup>, Haksoon Jung<sup>2</sup>, Hyunho Gu<sup>1</sup>, and Jimin Kwon<sup>1</sup>  <sup>1</sup>Department of Electrical Engineering, UNIST, <sup>2</sup>Department of Chemical Engineering, POSTECH</p>

TP1-126	<p><b>Achieving Both Enhancement-mode Operation and Large On-current in Bottom-gate Indium Tin Oxide Transistors</b></p> <p>Hyeonho Gu<sup>1</sup>, Haksoon Jung<sup>2</sup>, and Jimin Kwon<sup>1</sup></p> <p><sup>1</sup>Department of Electrical-Engineering, UNIST, <sup>2</sup>Department of Chemical Engineering, POSTECH</p>
TP1-127	<p><b>The Impact of Interconnect Resistance on DC Measurement of Test Vehicle at Sub-3nm Technology Node</b></p> <p>Jung Su Kim and Changhwan Shin</p> <p>School of Electrical Engineering, Korea University</p>
TP1-128	<p><b>Quantitative Analysis on Read/Write Performance in GAAFET-Based 6T-SRAM Bit Cell</b></p> <p>Changwoo Han<sup>1</sup>, Yejoo Choi<sup>2</sup>, and Changhwan Shin<sup>1</sup></p> <p><sup>1</sup>School of Electrical Engineering, College of Engineering, Korea University, <sup>2</sup>Department of Electrical and Computer Engineering, Sungkyunkwan University</p>
TP1-129	<p><b>밀리미터파 III-V/Si 단일 3차원 (M3D) 집적을 위한 고성능 Si 수동소자 집적기술 개발</b></p> <p>성민경<sup>1</sup>, 박민식<sup>2</sup>, 정재용<sup>3</sup>, 임정택<sup>4</sup>, 송재혁<sup>4</sup>, 송종현<sup>1,4</sup>, 이원철<sup>1,4</sup>, 심갑섭<sup>1,4</sup>, 서동주<sup>1</sup>, 임유리<sup>1</sup>, 고희호<sup>4</sup>, 김철영<sup>4</sup>, 설우석<sup>1</sup>, 김상현<sup>3</sup>, 이종원<sup>1</sup></p> <p><sup>1</sup>나노융합기술원, <sup>2</sup>한밭대학교, <sup>3</sup>한국과학기술원, <sup>4</sup>충남대학교</p>
TP1-130	<p><b>Investigation of Oxygen-Scavenging Effect on Hf<sub>0.5</sub>Zr<sub>0.5</sub>O<sub>2</sub> Metal-Ferroelectric-Insulator-Semiconductor (MFIS) Stack with CMOS Compatible Gate Structure</b></p> <p>Jinhwan Jung, Seonggeun Kim, and Sangwan Kim</p> <p>Department of Electronic Engineering, Sogang University</p>
TP1-131	<p><b>Charge Storage Memory Utilizing Ge Quantum Dots</b></p> <p>Gyu Bin Lee, Gyeong Min Seo, and Byoung Don Kong</p> <p>Department of Electrical Engineering, POSTECH</p>
TP1-132	<p><b>Impact of RTA on the Way of Forming Filaments in Oxide RRAM Bit Cell</b></p> <p>Gwon Kim<sup>1</sup> and Changhwan Shin<sup>2</sup></p> <p><sup>1</sup>Department of Electrical and Computer Engineering, Sungkyunkwan University, <sup>2</sup>School of Electrical Engineering, Korea University</p>
TP1-133	<p><b>Optimization of T-CMOS Based Ternary Content-Addressable Memory Cell for High-density Application</b></p> <p>Jun Young Park<sup>1</sup>, Young-Eun Choi<sup>1</sup>, Woo-Seok Kim<sup>1</sup>, Myoung Kim<sup>1</sup>, Yesong Jeong<sup>1</sup>, Sang Hun Yeo<sup>1</sup>, Kwan Yong Lee<sup>1</sup>, In Jun Jang<sup>1</sup>, Min Woo Ryu<sup>1,2</sup>, and Kyung Rok Kim<sup>1,2</sup></p> <p><sup>1</sup>Department of Electrical Engineering, UNIST, <sup>2</sup>Ternell Corp.</p>
TP1-134	<p><b>Study of Spacer Material Effects on 3D NAND Flash Memory Characteristics in Retention State</b></p> <p>Yun-Jae Oh<sup>1</sup>, Yunejae Suh<sup>2</sup>, Inyoung Lee<sup>1</sup>, Daewoong Kang<sup>3</sup>, and Il Hwan Cho<sup>1</sup></p> <p><sup>1</sup>Department of Electronic Engineering, Myongji University, <sup>2</sup>Department of Electronic Engineering, Soongsil University, <sup>3</sup>Department of Next Generation Semiconductor Convergence and Open Sharing System, Seoul National University</p>
TP1-135	<p><b>Analysis of Interface Trap Density in Metal-Ferroelectric-Insulator-Semiconductor (MFIS) Capacitor with High-k Dielectrics</b></p> <p>Chankoo Kim<sup>1</sup>, Dong Keun Lee<sup>1</sup>, Seonggeun Kim<sup>1</sup>, Tae-Hyeon Kim<sup>2</sup>, Sihyun Kim<sup>1</sup>, and Sangwan Kim<sup>1</sup></p> <p><sup>1</sup>Department of Electronic Engineering, Sogang University, <sup>2</sup>School of Electrical and Computer Engineering, Georgia Institute of Technology</p>
TP1-136	<p><b>모오스 구동 싸이리스터 기반 전기자동차용 전자식 프리차지 스위치 모듈</b></p> <p>정동윤<sup>1</sup>, 박건식<sup>1</sup>, 김상인<sup>2</sup>, 원종일<sup>1</sup>, 장현규<sup>1</sup>, 이용하<sup>3</sup></p> <p><sup>1</sup>한국전자통신연구원 반도체소부장기술센터, <sup>2</sup>갑승파워시스템, <sup>3</sup>주와이테크</p>

TP1-137	<p><b>Analysis on the Impact of Charge Traps in FeTFET</b></p> <p>Yun Seo Choi<sup>1</sup>, Seungwon Go<sup>1</sup>, Tae-Hyeon Kim<sup>2</sup>, Sihyun Kim<sup>1</sup>, and Sangwan Kim<sup>1</sup></p> <p><sup>1</sup>Department of Electronic Engineering, Sogang University, <sup>2</sup>School of Electrical and Computer Engineering, Georgia Institute of Technology</p>
TP1-138	<p><b>A Simulation Study of Heterojunction FeFET with SiGe Body for Efficient Erase Operation</b></p> <p>Taegun Kim, Dong Keun Lee, Sihyun Kim, and Sangwan Kim</p> <p>Department of Electronic Engineering, Sogang University</p>
TP1-139	<p><b>Multi-bit Vertical Ferroelectric-Metal Field-Effect Transistor (V-FeMFET) Weight Cell for Neuromorphic Computing</b></p> <p>Heebum Kang<sup>1</sup>, Seungmin Kang<sup>1</sup>, Tae-Hyeon Kim<sup>2</sup>, Sangwan Kim<sup>1</sup>, and Sihyun Kim<sup>1</sup></p> <p><sup>1</sup>Department of Electronic Engineering, Sogang University, <sup>2</sup>School of Electrical and Computer Engineering, Georgia Institute of Technology</p>
TP1-140	<p><b>The Impact of Annealing Conditions on the Switching Performance and Grain Size of Metal-Ferroelectric (Hf<sub>0.5</sub>Zr<sub>0.5</sub>O<sub>2</sub>)-Metal Capacitor</b></p> <p>Jiyeong Yoon and Changhwan Shin</p> <p>School of Electrical Engineering, Korea University</p>
TP1-141	<p><b>Impact of Vertical Core Oxide on the Electrical Characteristics of Junctionless Nanosheet FET</b></p> <p>Hyeonjung Park<sup>1</sup> and Changhwan Shin<sup>2</sup></p> <p><sup>1</sup>Department of Electrical and Computer Engineering, Sungkyunkwan University, <sup>2</sup>School of Electrical Engineering, Korea University</p>
TP1-142	<p><b>Simulation Studies of Gate-injection Ferroelectric Flash (GI FeFlash)</b></p> <p>Yelim Jeon<sup>1</sup>, Hyungju Noh<sup>1</sup>, Tae-Hyeon Kim<sup>2</sup>, Sihyun Kim<sup>1</sup>, and Sangwan Kim<sup>1</sup></p> <p><sup>1</sup>Department of Electrical Engineering, Sogang University, <sup>2</sup>School of Electrical and Computer Engineering, Georgia Institute of Technology</p>
TP1-143	<p><b>An Artificial Multimodal Neuron with Associative Learning Capabilities: Acquisition, Extinction, and Spontaneous Recovery</b></p> <p>Sangheon Kim<sup>1,2</sup>, Unhyeon Kang<sup>1,3</sup>, Young Woong Lee<sup>1</sup>, Seungmin Oh<sup>1,3</sup>, Jaewook Kim<sup>1,3</sup>, Daseung Jeong<sup>1</sup>, Jinyeong Hwang<sup>1</sup>, and Suyoun Lee<sup>1,5</sup></p> <p><sup>1</sup>Center for Neuromorphic Engineering, KIST, <sup>2</sup>Department of Materials Science and Engineering, Korea University, <sup>3</sup>Materials Science &amp; Engineering, Seoul National University, <sup>4</sup>Department of Materials Science &amp; Engineering, Seoul National University of Science and Technology, <sup>5</sup>Division of Nano &amp; Information Technology, Korea University of Science and Technology</p>
TP1-144	<p><b>T-CMOS SPICE Compact Modeling for Low Power Ternary-SRAM Design</b></p> <p>Young-Eun Choi<sup>1</sup>, Woo-Seok Kim<sup>1</sup>, Myoung Kim<sup>1,2</sup>, Sang Hun Yeo<sup>1</sup>, Kwan Yong Lee<sup>1</sup>, Jun Young Park<sup>1</sup>, Yesong Jeong<sup>1</sup>, Min Woo Ryu<sup>1,2</sup>, and Kyung Rok Kim<sup>1,2</sup></p> <p><sup>1</sup>Department of Electrical Engineering, UNIST, <sup>2</sup>Ternell Corp.</p>
TP1-145	<p><b>Simulation Study on Accumulation Mode GAAFET with Low Threshold Voltage</b></p> <p>Eungyo Jang and Changhwan Shin</p> <p>School of Electrical Engineering, Korea University</p>
TP1-146	<p><b>Machine-learning Model to Predict the LER (line-edge-roughness)-induced Random Variation in GAAFET</b></p> <p>Myongjin Kim and Changhwan Shin</p> <p>Department of Electrical Engineering, Korea University</p>
TP1-147	<p><b>Analysis of Photoresponse with Asymmetry Ratio for High-performance based on Trantenna</b></p> <p>Min Jae Kim<sup>1</sup>, Sang Hyo Ahn<sup>1</sup>, Yoo Bin Song<sup>1</sup>, Min Woo Ryu<sup>1,2</sup>, and Kyung Rok Kim<sup>1,2</sup></p> <p><sup>1</sup>Department of Electrical Engineering, UNIST, <sup>2</sup>Ternell Corp</p>

TP1-148	<p><b>Non-uniform Interface Trap Density by Halo Ion-implantation Process for Flicker Noise Estimation</b></p> <p>Yoo Bin Song, Sang Hyo Ahn, Min Jae Kim, Min Woo Ryu, and Kyung Rok Kim Department of Electrical Engineering, UNIST</p>
TP1-149	<p><b>Roadmap for Ferroelectric NAND Flash Memory</b></p> <p>Taebaek Lee and Chae <b>철회</b> Department of Semiconductor System Engineering, Korea University</p>
TP1-150	<p><b>Comparative TCAD Analysis of Single-event Transients in Forksheet FETs and Bottom Dielectric Isolation-integrated Forksheet FETs</b></p> <p>Gunhee Choi and Jongwook Jeon Department of Electrical and Computer Engineering, Sungkyunkwan University</p>
TP1-151	<p><b>Effects of Tunnel Oxide on Reliability in Charge Trap Flash Memory Devices</b></p> <p>Jaekyun Son<sup>1</sup>, Jae Yeon Park<sup>1</sup>, Tae-Hyeon Kim<sup>2</sup>, Sihyun Kim<sup>1</sup>, and Sangwan Kim<sup>1</sup> <sup>1</sup>Department of Electronic Engineering, Sogang University, <sup>2</sup>School of Electrical and Computer Engineering, Georgia Institute of Technology</p>
TP1-152	<p><b>Analysis of Memory Characteristics in Charge Trap Flash Devices Depending on Tunnel Oxide</b></p> <p>Jinhong Lee<sup>1</sup>, Jae Yeon Park<sup>1</sup>, Jaekyun Son<sup>1</sup>, Tae-Hyeon Kim<sup>2</sup>, Sihyun Kim<sup>1</sup>, and Sangwan Kim<sup>1</sup> <sup>1</sup>Department of Electronic Engineering, Sogang University, <sup>2</sup>School of Electrical and Computer Engineering, Georgia Institute of Technology</p>
TP1-153	<p><b>High-Speed THz Imager for Low-Noise THz Imaging Applications</b></p> <p>Sang Hyo Ahn<sup>1</sup>, Min Jae Kim<sup>1</sup>, Yoo Bin Song<sup>1</sup>, Myoung Kim<sup>1</sup>, Min Woo Ryu<sup>1,2</sup>, and Kyung Rok Kim<sup>1,2</sup> <sup>1</sup>Department of Electrical Engineering, UNIST, <sup>2</sup>Ternell Corp.</p>
TP1-154	<p><b>Characteristics of Molybdenum and Molybdenum Dioxide Thin Films for IGZO-Based Transistors</b></p> <p>Min-Su Cho, Hyun-June Park, and Sung-Woong Chung POSTECH</p>
TP1-156	<p><b>M3D Hybrid Inverter Using Si p-FETs and Indium-Based Oxide Semiconductor n-TFTs</b></p> <p>Sun Bum Kim<sup>1</sup>, Chan Seul Lee<sup>1</sup>, Gyu Lee Kim<sup>1</sup>, Jae Seok Hur<sup>2</sup>, Ho Young Lee<sup>3</sup>, Jae Kyeong Jeong<sup>2</sup>, and Changhwan Choi<sup>1</sup> <sup>1</sup>Division of Materials Science and Engineering, Hanyang University, <sup>2</sup>Department of Electronic Engineering, Hanyang University, <sup>3</sup>Department of Nanoscale Semiconductor Engineering, Hanyang University</p>
TP1-157	<p><b>A Novel Hybrid Ferroelectric Charge Trap Layer Gate-Injection Flash</b></p> <p>Hyungju Noh, Yelim Jeon, Sihyun Kim, and Sangwan Kim Department of Electrical Engineering, Sogang University</p>
TP1-158	<p><b>A 28-nm Ternary Dual-Port SRAM Cell for Area and Power Efficient On-chip Memory</b></p> <p>Myoung Kim<sup>1,2</sup>, Young Eun Choi<sup>1</sup>, Woo-Seok Kim<sup>1</sup>, Yesong Jeong<sup>1</sup>, Jun Young Park<sup>1</sup>, Sang Hun Yeo<sup>1</sup>, Kwan Yong Lee<sup>1</sup>, In Jun Jang<sup>1</sup>, Min Woo Ryu<sup>1,2</sup>, and Kyung Rok Kim<sup>1,2</sup> <sup>1</sup>Department of Electrical Engineering, UNIST, <sup>2</sup>Ternell Corp.</p>
TP1-159	<p><b>Binary-to-Ternary and Ternary-to-Binary Data Converters for Ternary Memory Interface</b></p> <p>Yesong Jeong<sup>1</sup>, Myoung Kim<sup>1,2</sup>, Young-Eun Choi<sup>1</sup>, Woo-Seok Kim<sup>1</sup>, Jun Young Park<sup>1</sup>, Sang Hun Yeo<sup>1</sup>, Kwan Yong Lee<sup>1</sup>, In Jun Jang<sup>1</sup>, Min Woo Ryu<sup>1,2</sup>, and Kyung Rok Kim<sup>1,2</sup> <sup>1</sup>Department of Electrical Engineering, UNIST, <sup>2</sup>Ternell Corp.</p>
TP1-160	<p><b>Heterogeneous Inverter Using N-type IGTO TFT Prepared by Atomic-layer Deposition with Various Channel Compositions on the P-type Si FET</b></p> <p>Chan Seul Lee, Sun Bum Kim, Gyu Ri Kim, and Changhwan Choi Division of Materials Science and Engineering, Hanyang University</p>

TP1-161	<p><b>Investigation of Self-heating Effects in SOI L-shaped MOSFET with Various Position of the Al<sub>2</sub>O<sub>3</sub> Heat Sink Using 3-D TCAD Simulation</b></p> <p>Un-hyun Im<sup>1</sup>, Dogyun Ahn<sup>1</sup>, Tae-young Yun<sup>1</sup>, Jang Hyun Kim<sup>1</sup>, and Sangwan Kim<sup>2</sup>  <sup>1</sup>Ajou University, <sup>2</sup>Sogang University</p>
TP1-162	<p><b>Implementing Excitatory and Inhibitory Properties in a Neuron Circuit Using Feedback Field Effect Transistor</b></p> <p>Minseon Park, Junhyeong Lee, and Min-Woo Kwon  Department of Electronic Engineering, Gangneung-Wonju National University</p>
TP1-163	<p><b>TCAD-Based Analysis and Modeling of Process Variations in 28-nm Ternary-CMOS Technology</b></p> <p>Kwan Yong Lee<sup>1</sup>, Woo-Seok Kim<sup>1</sup>, Young-Eun Choi<sup>1</sup>, Myoung Kim<sup>1,2</sup>, Sang Hun Yeo<sup>1</sup>, Ye song Jeong<sup>1</sup>, Jun Young Park<sup>1</sup>, In Jun Jang<sup>1</sup>, Min Woo Ryu<sup>1,2</sup>, and Kyung Rok Kim<sup>1,2</sup>  <sup>1</sup>Department of Electrical Engineering, UNIST, <sup>2</sup>Ternell Corp.</p>
TP1-164	<p><b>A Novel Variation Tolerant Silicon-Based Source/Channel Junctionless Ternary Tunnel FET for Energy Efficient Logic and Memory Applications</b></p> <p>Sang Hun Yeo<sup>1</sup>, Woo-Seok Kim<sup>1</sup>, Young-Eun Choi<sup>1</sup>, Myoung Kim<sup>1,2</sup>, Kwan Yong Lee<sup>1</sup>, In Jun Jang<sup>1</sup>, Jun Young Park<sup>1</sup>, Yesong Jeong<sup>1</sup>, Min Woo Ryu<sup>1,2</sup>, and Kyung Rok Kim<sup>1,2</sup>  <sup>1</sup>Department of Electrical Engineering, UNIST, <sup>2</sup>Ternell Corp.</p>
TP1-165	<p><b>Foundry Platform Demonstration of Ternary Logic Circuits by Exploiting Halo Implantation for Ternary-Binary Hybrid System Integration</b></p> <p>Woo-Seok Kim<sup>1</sup>, Young-Eun Choi<sup>1</sup>, Myoung Kim<sup>1,2</sup>, Sang Hun Yeo<sup>1</sup>, Kwan Yong Lee<sup>1</sup>, In Jun Jang<sup>1</sup>, Jun Young Park<sup>1</sup>, Yesong Jeong<sup>1</sup>, Min Woo Ryu<sup>1,2</sup>, and Kyung Rok Kim<sup>1,2</sup>  <sup>1</sup>Department of Electrical Engineering, UNIST, <sup>2</sup>Ternell Corp.</p>
TP1-166	<p><b>Highly Scalable Nanosheet Based Ternary-CMOS Technology</b></p> <p>In jun Jang<sup>1</sup>, Woo-Seok Kim<sup>1</sup>, Young-Eun Choi<sup>1</sup>, Myoung Kim<sup>1</sup>, Sang Hun Yeo<sup>1</sup>, Kwan Yong Lee<sup>1</sup>, Jun Young Park<sup>1</sup>, Yesong Jeong<sup>1</sup>, Min Woo Ryu<sup>1,2</sup>, and Kyung Rok Kim<sup>1,2</sup>  <sup>1</sup>Department of Electrical Engineering, UNIST, <sup>2</sup>Ternell Corp.</p>
TP1-167	<p><b>Nanohole Patterning by Inner-Sidewall Spacer through Time-Controlled Dry Etching</b></p> <p>Soomin Kim<sup>1</sup>, Gyuhoon Lee<sup>2</sup>, Yeji Lee<sup>3</sup>, Sungjun Kim<sup>2</sup>, and Seongjae Cho<sup>1</sup>  <sup>1</sup>Department of Electronic and Electrical Engineering, Ewha Womans University, <sup>2</sup>Department of Electronics and Electrical Engineering, Dongguk University, <sup>3</sup>Department of Electrical and Electronic, and Control Engineering, Hankyong National University</p>
TP1-168	<p><b>A Single-Body Integrated Ultra-Low-Power Logic-Memory Cell</b></p> <p>Gyuhoon Lee<sup>1</sup>, Soomin Kim<sup>2</sup>, Yeji Lee<sup>3</sup>, Myounggon Kang<sup>4</sup>, Sungjun Kim<sup>1</sup>, and Seongjae Cho<sup>2</sup>  <sup>1</sup>Department of Electronics and Electrical Engineering, Dongguk University, <sup>2</sup>Department of Electronic and Electrical Engineering, Ewha Womans University, <sup>3</sup>Department of Electrical and Electronic, and Control Engineering, Hankyong National University, <sup>4</sup>Department of Electronics Engineering, Korea National University of Transportation</p>



# I. MEMS & Sensors Systems 분과

## ZONE 1 (1층 전시장)

TP1-169	<p><b>A Microfabrication Technology Platform of MEMS Actuating Structure and its Pull-in Voltage Characteristics</b></p> <p>Ju Chan Choi, Kwan Soo Kim, Seung Han Ryu, Ji Do Kim, Kwang Woong Jeong, Tae Won Lee, Jung Hun Choi, Myung Hee Nam, and Jeong Soo Park</p> <p>SK hynix system ic</p>
TP1-170	<p><b>MEMS Microphone의 Wafer Level Pull-in Voltage 측정 안정화를 위한 Probe Station의 Wafer Edge Vacuum 방식 Chuck 적용 효과</b></p> <p>Keun Hye Choi, Ju Chan Choi, Jung Hun Choi, Myung Hee Nam, and Jeong Soo Park</p> <p>SK hynix system ic</p>
TP1-171	<p><b>Wafer Level Test에서 Probe Tip의 Contact 압력 및 위치에 따른 MEMS Microphone의 Pull In Voltage 특성 변화</b></p> <p>Se Been Jung, Ju Chan Choi, Jung Hun Choi, Myung Hee Nam, and Jeong Soo Park</p> <p>SK hynix system ic</p>
TP1-172	<p><b>Ultra-Sensitive Charge Based Antibiotics Detection Inside a Micro-Dielectrophoretic Device</b></p> <p>Young Woo Gwak, Gyeong Jun Min, Jin Seon Park, and Sang Woo Lee</p> <p>Department of Biomedical Engineering, Yonsei University</p>
TP1-173	<p><b>HMDSO Poisoning Prevention with CeO<sub>2</sub>-rGO/Pd/ZnO MOS Film</b></p> <p>Rajesh Gudala, Seung Jun Jeon, Gab Joong Jeong, and Yun Sik Lee</p> <p>SensorWithU Co., Ltd.</p>
TP1-174	<p><b>Nanoporous MoS<sub>2</sub> FET-Based Bioelectric Sensor Capable of Highly Selective and Sensitive Detection of Ethanol by Mimicking Drosophila Olfactory System</b></p> <p>Junoh Shim, Anamika Sen, Heekyeong Park, Arindam Bala, Mincheol Park, and Sunkook Kim</p> <p>Department of Advanced Materials Science and Engineering, Sungkyunkwan University</p>
TP1-175	<p><b>Effective Detection of BSA with High-performance DG-ISFET and Surface Treated Sensing Membranes</b></p> <p>Dong-Gyun Mah, Yeong-Ung Kim, and Won-Ju Cho</p> <p>Department of Electronic Materials Engineering, Kwangwoon University</p>
TP1-176	<p><b>pH-dependent Tunable Sensitivity in Electric-Double-Layer Transistors with Extended-Gate for Neuromorphic Biosensors</b></p> <p>Dong Hee Lee, Hwi-Su Kim, and Won-Ju Cho</p> <p>Department of Electronic Materials Engineering, Kwangwoon University</p>
TP1-177	<p><b>Nano-physical Unclonable Function Created by Nanopatterns from Block Copolymer Self-assembly</b></p> <p>Hyeon Ju Ko, Jang Hwan Kim, and Sang Ouk Kim</p> <p>Department of Material Science &amp; Engineering, KAIST</p>
TP1-178	<p><b>High-current, Large-area Organic Photovoltaics for Indoor Applications</b></p> <p>Jooyeong Kim<sup>1</sup>, Hyeonjeong Choi<sup>2</sup>, Selim Han<sup>2</sup>, Biswas Swarup<sup>2</sup>, and Hyeok Kim<sup>2</sup></p> <p><sup>1</sup>Department of Intelligent Semiconductor Engineering, University of Seoul, <sup>2</sup>School of Electrical and Computer Engineering, University of Seoul</p>
TP1-179	<p><b>Magnetic Hydrogel를 활용한 초소형 생분해성 로봇 구동</b></p> <p>이어진, 정구윤, 유정민, 박윤석</p> <p>경희대학교 정보전자신소재공학과</p>

TP1-180	<b>Bioinspired Artificial Photonic Synapses based on <math>\beta</math>-Ga<sub>2</sub>O<sub>3</sub> for Neuromorphic Computing</b> Youngbin Yoon, Youngki Kim, Wan Sik Hwang, and Myunghun Shin Korea Aerospace University
TP1-181	<b>환경 반응형 마이크로 액추에이터</b> 허연희, 유정민, 박윤석 경희대학교 정보전자신소재공학과
TP1-182	<b>인체 움직임 감지를 위한 압저항 PDMS 스펀지</b> 김수현, 허연희, 박윤석 경희대학교 정보전자신소재공학과
TP1-183	<b>마이크로 칩의 선택적 전사를 위한 다공성 스탬프</b> 강가은, 박윤석 경희대학교 정보전자신소재공학과
TP1-184	<b>Versatile Motion Feedback Systems via Epidermal Device Networks</b> Sang Uk Park and Sang Min Won Electrical and Computer Engineering, Sungkyunkwan University
TP1-185	<b>Magnetically Actuated TENG for Wireless Energy Transfer</b> Junyeop Kim <sup>1</sup> , Hongjoon Yoon <sup>2</sup> , and Yoonseok Park <sup>1</sup> <sup>1</sup> Department of Advanced Materials Engineering for Infomation & Electronics, Kyunghee University, <sup>2</sup> Department of Electronic Engineering, Gachon University
TP1-186	<b>자기 구동식 생체 영감 심장판막 시스템</b> 유정민, 정구윤, 박윤석 경희대학교 정보전자신소재공학과
TP1-187	<b>가변적 강성 구조의 3차원 자성 기계적 메타물질</b> 정구윤, 김준엽, 최태훈, 박윤석 경희대학교 정보전자신소재공학과
TP1-188	<b>Piezoresistive 2-dimensional In<sub>2</sub>Se<sub>3</sub> Nanosheets for Flexible Pressure Sensor</b> Shenawar Ali Khan and Woo Young Kim Department of Electronic Engineering, Jeju National University
TP1-189	<b>Effect of Forming Gas Annealing on Reliability of Embedded Poly-silicon Micro-heater</b> Jinwoo Park, Gyuweon Jung, Wonjun Shin, Chayoung Lee, Donghee Kim, Kangwook Choi, Hunhee Shin, Min-Kyu Park, Joon Hwang, Jae-Joon Kim, and Jong-Ho Lee Department of Electrical and Computer Engineering and ISRC Seoul National University
TP1-190	<b>Dry EEG Electrodes Integrated with Earphones</b> Byeong Woon Lee and Sang Min Won Department of Electrical and Computer Engineering, Sungkyunkwan University
TP1-191	<b>Wireless, Epidermal Platform for Diagnosing Pulmonary Disease</b> Hee Kyu Lee and Sang Min Won Department of Electrical and Computer Engineering, Sungkyunkwan University
TP1-192	<b>인체부착형 마찰전기 기반 움직임 감지 센서</b> 한윤승 <sup>1</sup> , 윤희준 <sup>2</sup> , 박윤석 <sup>1</sup> <sup>1</sup> 경희대학교 정보전자신소재공학과, <sup>2</sup> 가천대학교 전자공학부
TP1-193	<b>Enhancement of Gas Sensing Performance in CuO Resistor-type Gas Sensors via Pre-Bias Voltage</b> Kangwook Choi, Gyuweon Jung, Wonjun Shin, Jinwoo Park, Chayoung Lee, Donghee Kim, Hunhee Shin, Woo Young Choi, and Jong-Ho Lee Department of Electrical and Computer Engineering and Inter-university Semiconductor Research Center, Seoul National University

TP1-194	<p><b>Thermally Mediated Capacitive Assisted Wireless Body Temperature Sensor</b></p> <p>Doyoung Kim <b>첼희</b></p> <p>Department of Electrical and Computer Engineering, Sungkyunkwan University</p>
TP1-195	<p><b>Self-driven Resistive Pulse Sensing System for Point-of-care Diagnostic</b></p> <p>Hyunjun Kim, June Soo Kim, Jae Yong Lee, Seung Deok Kim, Noah Jang, Jiajie Wang, Da Ye Kim, Yujin Nam, Jinkyung Kim, Maeum Han, and Seong Ho Kong</p> <p>Kyungpook National University</p>
TP1-196	<p><b>Wearable Capacitive Type Hydration Sensor Packaged in Porous PDMS for Breathability</b></p> <p>Hyejun Kim, Seongu Kim, and Jeonghyun Kim</p> <p>Department of Electronics Convergence Engineering, Kwangwoon University</p>
TP1-197	<p><b>Development of Flexible and Transparent Bilayer Electrodes for Aptamer Biosensors Using Graphene and PEDOT:PSS</b></p> <p>Sookyong Kim and Dong-Wook Park</p> <p>School of Electrical and Computer Engineering, University of Seoul</p>
TP1-198	<p><b>IZO/ZnO Nanowire Heterostructure for Enhanced Biomolecule Sensing Performance of Heterostructure-Based TFT</b></p> <p>June Soo Kim, Jae Yong Lee, Seung Deok Kim, Da Ye Kim, Hyunjun Kim, Noah Jang, Jiajie Wang, Yujin Nam, Jinkyung Kim, Maeum Han, and Seong Ho Kong</p> <p>School of Electronics and Electrical Engineering, Kyungpook National University</p>
TP1-199	<p><b>Nanostructured Zinc Oxide Thin Film : An Innovative pH Sensing Solution</b></p> <p>Noah Jang, June Soo Kim, Maeum Han, Seung Deok Kim, Jae Yong Lee, Jiajie Wang, Hyunjun Kim, Da Ye Kim, Yujin Nam, Jinkyung Kim, and Seong Ho Kong</p> <p>School of Electronic and Electrical Engineering, Kyungpook National University</p>
TP1-202	<p><b>SPAD-Based LiDAR Sensor with Adaptive Power Saving Scheme</b></p> <p>Dahwan Park, Eun-chang Lee, Min-Kyu Kim, Sang-Young Lee, Yong-Seop Lee, Min-Seok Shin, and Hoesam Jeong</p> <p>SK hynix</p>
TP1-203	<p><b>A Smart Ring for Real-Time Blood Pressure Monitoring</b></p> <p>Junyeong Lee, Minjoo Lee, and Jeonghyun Kim</p> <p>Department of Electronic Convergence Engineering, Kwangwoon University</p>
TP1-204	<p><b>Non-Invasive Real-Time Blood Glucose Monitoring for Reducing Variations in Diabetes Care</b></p> <p>Seongu Kim and Jeonghyun Kim</p> <p>Department of Electronic Convergence Engineering, Kwangwoon University</p>
TP1-205	<p><b>Integration of Semiconductor Components Using 3D Stacking Technology and Sensory-Neuromorphic Application</b></p> <p>Se Gi Lee and Sang Min Won</p> <p>Sungkyunkwan University</p>
TP1-206	<p><b>Application of Innovative Wiring Method of In-vivo Experiments</b></p> <p>Janghoon Joo and Sang Min Won</p> <p>Sungkyunkwan University</p>
TP1-207	<p><b>Flexible Artificial Tactile System Using Morphotropic Phase Boundary of <math>Hf_xZr_{1-x}O_2</math> Thin Film by Low-Temperature Annealing</b></p> <p>Seungyeob Kim, Minhyun Jung, Jinwook Ha, and Sanghun Jeon</p> <p>School of Electrical Engineering, KAIST</p>

<p><b>TP1-208</b></p>	<p><b>단일 벽 탄소 나노튜브를 이용한 황화수소 가스 센서의 제작과 검출</b>  Ryang Ha Kim, Kyung Eun Kim, Beom Jun Jung, and Young Lae Kim  Electronic Engineering, Gangneung-Wonju National University</p>
<p><b>TP1-209</b></p>	<p><b>Wireless, Battery Free Temperature Sensor based on Morphotropic Phase Boundary of <math>Hf_xZr_{1-x}O_2</math> Thin Film</b>  Ketong Yang, Seungyeob Kim, Minhyun Jung, and Sanghun Jeon  KAIST</p>
<p><b>TP1-210</b></p>	<p><b>In-Situ Electron Density Measurement in Inductively Coupled Plasma Using Microwave Reflectometer by Wi-Fi Antenna on Wafer</b>  Seong-Yong Lim, Gi-Won Shin, Woo-Jae Kim, Hee-Tae Kwon, Ji-Hwan Kim, In-Young Bang, Jae-Hyeon Kim, Hyeon-Jo Kim, Seong-Hee Cho, Seo-Yeon Kim, and Gi-Chung Kwon  Department of Electrical and Biological Physics, Kwangwoon University</p>
<p><b>TP1-211</b></p>	<p><b>P-Type Copper Oxide-Based Solar-blind Ultraviolet (UV) Photodetector Capable of Low-Photocurrent Operation with Plasma-Enhanced Atomic Layer Deposition (PEALD)</b>  Minah Park<sup>1</sup>, Jaewook Yoo<sup>1</sup>, Hyeonjun Song<sup>1</sup>, Soyeon Kim<sup>1</sup>, Hongseung Lee<sup>1</sup>, Seongbin Lim<sup>1</sup>, Seohyeon Park<sup>1</sup>, Peide D. Ye<sup>2</sup>, and Hagyoul Bae<sup>1</sup>  <sup>1</sup>Jeonbuk National University, <sup>2</sup>Purdue University</p>

TP1-212	<b>Two-step Classification Neuron Circuits for Highly Integrated SNN Systems</b> Dahyeon Youn and Soo Youn Kim Department of Semiconductor Science, Dongguk University
TP1-213	<b>An Automatic Salt-water-spray Roadway-deicing System with Surface Detection</b> Ki-Duk Kim <sup>1</sup> and Hyung-Min Lee <sup>2</sup> <sup>1</sup> C&Tech Co., Ltd., <sup>2</sup> Korea University
TP1-214	<b>Aggregator Hardware Design for Preventing Backdoor Attacks in Federated Learning</b> YeJi Lee, JoonSeok Kim, KyuMin Cho, and SeokHyung Kang Department of Electrical Engineering, POSTECH
TP1-215	<b>50G-PON 용 LDPC 부호기 FPGA 구현</b> 최정원 <sup>1</sup> , 김광옥 <sup>2</sup> , 두경환 <sup>2</sup> , 정환석 <sup>2</sup> , 이영주 <sup>1</sup> <sup>1</sup> 포항공과대학교 전자전기공학과, <sup>2</sup> 한국전자통신연구원 입체통신연구소 네트워크연구본부 광네트워크연구실
TP1-216	<b>HDL Code Coverage Verification Method</b> 엄유진, 양희훈, 김도훈, 유호영 충남대학교 전자공학과
TP1-217	<b>GPS CRC-24Q 디코더 구현</b> 황용택, 황지우, 유호영 충남대학교 전자공학과
TP1-218	<b>노외중성자속 감시계통 검증을 위한 FPGA 신호생성기 개발</b> 신건, 양희훈, 박요한, 노윤진, 유호영 충남대학교 전자공학과
TP1-219	<b>링 오실레이터 인버터 수에 따른 PUF 성능 분석</b> 박지호, 양희훈, 유호영 충남대학교 전자공학과
TP1-220	<b>Verification Methodology for Rate Control Unit in VDC-M Decoder</b> Jiyoung Lee, Huijin Roh, Sohyeon Kim, Saeyeon Kim, Hannah Yang, and Ji-Hoon Kim Department of Electronic and Electrical Engineering, Ewha Womans University
TP1-221	<b>Multi-Stage Rate Control Architecture for VDC-M Decoder</b> Huijin Roh, Jiyoung Lee, Sohyeon Kim, Saeyeon Kim, Hannah Yang, and Ji-Hoon Kim Department of Electronic and Electrical Engineering, Ewha Womans University
TP1-222	<b>Design of Custom DRAM Memory Controller for ALPG Testing</b> Seoyeon Park, Saeyeon Kim, Eunkyung Ham, Sunyoung Park, and Ji-Hoon Kim Department of Electronic and Electrical Engineering, Ewha Womans University

## Q. Metrology, Inspection, Analysis, and Yield Enhancement 분과

ZONE 3 (2층 로비)

TP1-223	<p><b>비 균일 격자 마크를 이용한 라지 오버레이 문제 개선 방법</b></p> <p>Hyun Chul Lee<sup>1,3</sup>, Hyun Jin Chang<sup>1</sup>, Ho Sung Woo<sup>2</sup>, and Won Gyu Lee<sup>3</sup>  <sup>1</sup>AUROS Technology, Inc., <sup>2</sup>Korea National Open University, <sup>3</sup>Korea University</p>
TP1-224	<p><b>Power Spectral Density Analysis for SEM Line Pattern Roughness</b></p> <p>Ra Seong Ki<sup>1</sup>, Jong Hoi Cho<sup>1</sup>, Sung Hun Lim<sup>1</sup>, Jun Ho Lee<sup>1</sup>, Hyun Jin Lee<sup>1</sup>, Ran Alkoken<sup>2</sup>, You Jin Kim<sup>2</sup>, Jeong Ho Yeo<sup>2</sup>, Jung Woo Sung<sup>3</sup>, Kyung Ju Han<sup>3</sup>, and Kyu Young Kim<sup>1</sup>  <sup>1</sup>SK hynix, <sup>2</sup>PDC Business Group, Applied Materials, Israel, <sup>3</sup>PDC Business Group, Applied Materials, Korea</p>
TP1-225	<p><b>Fourier Transform Infrared Spectroscopy(FTIR) in Characterizing Borophosphosilicate Glass(BPSG)</b></p> <p>MinYoung Lee  Semilab Korea Co., Ltd.</p>
TP1-226	<p><b>Development of Dual-rotating Polarizer Spectroscopic Ellipsometry</b></p> <p>Jongkyoon Park, Sukhyun Choi, Yong Jai Cho, Junho Choi, and Chegal Won  Division of Advanced Instrumentation Institute, KRISS</p>
TP1-227	<p><b>CMOS Image Sensors의 암 전류를 감소시키는 Shallow Trench Isolation(STI) Sac Oxide Process Module 적용</b></p> <p>Cheoleon Park, Jea Young Park, Ki Young Kim, Sun Choi, and Won Ho Lee  R&amp;D Division, SK hynix system ic</p>
TP1-228	<p><b>Determination of Outdoor Airborne Nano-particle Impact on Defect by Development of New Data Processing Algorithm</b></p> <p>Jongmin Lee<sup>1,2</sup>, Jungtae Park<sup>1,2</sup>, Il-Jin Kim<sup>2</sup>, Haeun Lee<sup>2</sup>, and Sehoon Park<sup>2</sup>  <sup>1</sup>Department of Materials Science &amp; Engineering, Yonsei University, <sup>2</sup>Samsung Electronics Co., Ltd.</p>
TP1-229	<p><b>CIS (CMOS Image Sensor) BSI 제품 ML (Micro Lens) Stripe Defect 개선 방법</b></p> <p>Joo Young Jeong, Ki Young Kim, Han Yi Jin, Sun Choi, and Won Ho Lee  R&amp;D Division, SK hynix system ic</p>
TP1-230	<p><b>Real-time 3D Surface Reconstruction of Deflectometry Using Deep Learning</b></p> <p>In-Kyu Park<sup>1,2</sup>, Young-Sik Ghim<sup>1,2</sup>, and Hyug-Gyo Rhee<sup>1,2</sup>  <sup>1</sup>KRISS, <sup>2</sup>Department of Precision Measurement, UST</p>
TP1-231	<p><b>In-depth DOS Profiles in Solution-processed IZO Semiconductor Depending on the In Doping Using Photocurrent Spectroscopy</b></p> <p>Dongwook Kim<sup>1</sup>, Hyeonju Lee<sup>1</sup>, Soo-Kyoung Cha<sup>2</sup>, Chanho Jeong<sup>2</sup>, Youngjun Yun<sup>2</sup>, and Jaehoon Park<sup>2</sup>  <sup>1</sup>School of Information Science, Hallym University, <sup>2</sup>School of Semiconductor-Display Technology, Hallym University</p>
TP1-232	<p><b>Contact Holes in Vertical Electrode Structures Analyzed by GISAXS</b></p> <p>Gyungtae Kim<sup>1</sup>, Tae Gun Kim<sup>1</sup>, Young Jun Chang<sup>2</sup>, and Young Yong Kim<sup>3</sup>  <sup>1</sup>NNFC, <sup>2</sup>University of Seoul, <sup>3</sup>Pohang Accelerator Laboratory</p>
TP1-233	<p><b>Physically Unclonable Functions via Disordered Heteronanostructure of 2D Semiconducting Material: Enhancing Entropy and Parameter Space</b></p> <p>Jaeseo Park<sup>1</sup>, Jun Oh Kim<sup>1</sup>, Won Chegal<sup>1</sup>, and Sang-Woo Kang<sup>1,2</sup>  <sup>1</sup>Advanced Instrumentation Institute, KRISS, <sup>2</sup>Precision Measurement, UST</p>
TP1-234	<p><b>Enhancement of Electrical Properties in MOCVD-Grown MoS<sub>2</sub>-Based Field-Effect Transistors: A Comparative Study of Contact Strategies</b></p> <p>Junghyun Lee<sup>1,2</sup>, Jaeseo Park<sup>1</sup>, Hyeonji Kim<sup>1,3</sup>, Bongjoong Kim<sup>2</sup>, Sang-Woo Kang<sup>1,4</sup>, and Jun Oh Kim<sup>1</sup>  <sup>1</sup>KRISS, <sup>2</sup>Hongik University, <sup>3</sup>Kyungpook National University, <sup>4</sup>UST</p>

TP1-235	<p><b>EUV 펠리클에 포집된 임계 크기의 입자가 마스크 이미지 전사특성에 미치는 영향에 대한 실험적 연구</b></p> <p>문승찬<sup>1,3</sup>, 이동기<sup>2,3</sup>, 홍준호<sup>2,3</sup>, 안진호<sup>1,2,3</sup></p> <p><sup>1</sup>한양대학교 나노반도체공학과, <sup>2</sup>한양대학교 신소재공학과, <sup>3</sup>EUV-IUCC</p>
TP1-236	<p><b>Parameter Optimization for Precision Improvement in Thickness Measured with Spectroscopic Ellipsometry</b></p> <p>Inhee Joh, Seojin Park, Myeongrok Oh, Hwanseong Moon, Mita Park, Kyusik Kim, and Tae Dong Kang</p> <p>AUROS Technology, Inc.</p>
TP1-237	<p><b>Imaging Spectroscopic Ellipsometer based on One-piece Polarizing Interferometer: Characterization of the 2D Van Der Waals Materials</b></p> <p>Suk Hyun Choi<sup>1,2</sup>, Guk Hyeon Hwang<sup>1</sup>, Saeid Kheiryzadehkhanghah<sup>1</sup>, Yong Jai Cho<sup>2</sup>, Junho Choi<sup>2</sup>, Jongkyoon Park<sup>2</sup>, Won Chegal<sup>2</sup>, and Dae Suk Kim<sup>1</sup></p> <p><sup>1</sup>Jeonbuk National University, <sup>2</sup>KRISS</p>
TP1-238	<p><b>Optical Simulation of Measurement Sensitivity on Critical Dimension of Cu Micro-bumps for Semiconductor Packaging Process</b></p> <p>Shinyoung Ryu<sup>1</sup>, Jiwon Lee<sup>1</sup>, Minhyeok Lee<sup>1</sup>, Kwangwoo Kim<sup>2</sup>, Jongjeong Kim<sup>2</sup>, and Tae Dong Kang<sup>1</sup></p> <p><sup>1</sup>AUROS Technology, Inc., <sup>2</sup>Haedosa, Inc.</p>
TP1-239	<p><b>Development of High Precision Micro-ellipsometer Enhanced by Pixelated Polarizing Camera</b></p> <p>Dong-Geun Yang<sup>1,2</sup>, Young-Sik Ghim<sup>1,2</sup>, and Hyug-Gyo Rhee<sup>1,2</sup></p> <p><sup>1</sup>Optical Imaging and Metrology Team, KRISS, <sup>2</sup>Department of Measurement Engineering, UST</p>
TP1-240	<p><b>반사형 대물렌즈를 이용한 분광 타원계측기 편광상태 변화 보정</b></p> <p>서선일, 주기남</p> <p>조선대학교</p>
TP1-241	<p><b>고분해능 3차원 패턴 조사 현미경</b></p> <p>조민서, 박종규, 주기남</p> <p>조선대학교</p>
TP1-242	<p><b>In-situ Liquid Cell TEM Study for Water Splitting Using Mesoporous Graphitic Carbon Nitride Hetero-structures</b></p> <p>V. Navakoteswara Rao, Jung Ho Yoo, and Jun-Mo Yang</p> <p>Nano-convergence Technology Division, NNFC, KAIST</p>
TP1-243	<p><b>Reverse Engineering Case Study Using Atomic Layer Ion Beam Delayer</b></p> <p>Jon Won Koh, Myung Keun Lee, Seung Joon Cha, and Yun Chang Park</p> <p>NNFC</p>
TP1-244	<p><b>터보분자펌프 성능 평가 지표의 신뢰성 향상을 위한 계측기 보정 및 분산 데이터의 통계학적 프로세싱 방법에 관한 연구</b></p> <p>민병현<sup>1,3</sup>, 임성규<sup>2</sup>, 문지훈<sup>1</sup>, 강상우<sup>1,3</sup></p> <p><sup>1</sup>한국표준과학연구원 첨단측정장비연구소, <sup>2</sup>나노융합기술연구원 나노공정기술부, <sup>3</sup>과학기술연합대학원대학교 정밀측정전공</p>
TP1-245	<p><b>벽면 오염에 따른 식각 드리프트 제어 운전 알고리즘 개발</b></p> <p>이인규, 유상원, 권지원, 박지훈, 김근호</p> <p>서울대학교 공과대학 에너지시스템공학부</p>
TP1-246	<p><b>TLB Coalescing Using Page Table Compression</b></p> <p>Tran Dai Duong and Jae Young Hur</p> <p>Department of Electronic Engineering, Jeju National University</p>
TP1-247	<p><b>점진적 패리티로 대용량 NAND Flash Memory의 Open Block 문제 완화</b></p> <p>Min-Jin Oh<sup>1</sup> and Jaeho Kim<sup>1,2</sup></p> <p><sup>1</sup>School of Aerospace and Software Engineering, Gyeongsang National University, <sup>2</sup>Department of AI Convergence Engineering, Gyeongsang National University</p>

<p><b>TP1-248</b></p>	<p><b>Deep Learning Computation Acceleration through Automatic Tuning of Execution Code</b>          Yongin Kwon<sup>1,2</sup>  <sup>1</sup>ETRI, <sup>2</sup>UST</p>
<p><b>TP1-249</b></p>	<p><b>ZNS SSD의 자원 경쟁 분석</b>          Gyupin Moon and Donghyun Kang          Gachon University</p>
<p><b>TP1-250</b></p>	<p><b>Improved Mobile Application Performance through Database Redesign</b>          Jung Kyu Park<sup>1</sup>, and Eun Young Park<sup>2</sup>  <sup>1</sup>Changshin University, <sup>2</sup>Shinhan University</p>
<p><b>TP1-251</b></p>	<p><b>PoP-Cache: Hit Ratio 예측과 사전 퇴출에 의한 캐시 교체 정책의 성능 향상</b>          Hyemi Jeong<sup>1</sup>, Kyeongmin Kim<sup>1</sup>, and Jeaho Kim<sup>1,2</sup>  <sup>1</sup>School of Aerospace and Software Engineering, Gyeongsang National University, <sup>2</sup>Department of AI Convergence Engineering, Gyeongsang National University</p>



## S. Chip Design Contest 분과

### ZONE 1 (1층 전시장)

TP1-252	<p><b>An Arbitrary-Waveform-Capable Neural Stimulator in Standard CMOS</b></p> <p>Jeongyoon Wie and Junhyup Lee Electrical Engineering and Computer Science, DGIST</p>
TP1-253	<p><b>A Pulse Counting Digital FOCV-Based 41ms Fast Startup Compact Boost Converter for TEG in 28 nm CMOS</b></p> <p>Seong-Yeon Moon, R. M. I. U. Rajapaksha, and Jong-Wook Lee Department of Electronics and Information Convergence Engineering, Kyung Hee University</p>
TP1-254	<p><b>Object Tracking Lensless Light Field Image Sensor through a Parallel Bank of Pulse Computational Blocks and Post DNN Using Robot Arm-Based Data Collection</b></p> <p>Sang Hoon Hong, Eon Gyeong Lee, and Han Joon Kim Kyung Hee University</p>
TP1-255	<p><b>Wide Bandwidth Continuous-time Noise Shaping SAR ADC</b></p> <p>Sein Oh, Gichan Yun, and Minkyu Je School of Electrical Engineering, KAIST</p>
TP1-256	<p><b>Wide Bandwidth and High PSR Capacitorless LDO Regulator based on Flipped-voltage Follower</b></p> <p>Jaerim Baek, Daejeong Kim, and Hyun sun Mo Kookmin University</p>
TP1-257	<p><b>Design of a Phase-locked Loop with Improved Jitter Performance Using Phase-lock Detector</b></p> <p>Young Hun Kim, Dae Jeong Kim, and Hyun Sun Mo Kookmin University</p>
TP1-258	<p><b>A 1.4-8 Gb/s Low Power Quarter-rate Single-loop Reference-less Clock and Data Recovery Circuit with Unlimited Capture Range</b></p> <p>Jin-Ho Kim, Yujin Na, and Jin-Ku Kang Department of Electrical and Computer Engineering, Inha University</p>
TP1-259	<p><b>부채널 신호 분석을 위한 하드웨어 백도어 IC 칩 설계</b></p> <p>Sun Bhin Kim, Jun Hui Nam, and Dong Kyue Kim Department of Electronics Engineering, Hanyang University</p>
TP1-260	<p><b>Power Management IC for Supercapacitor Applications</b></p> <p>Donghyun Kim, Jaehyeong Lee, Jinwoo Oh, Seungyeon Lee, Jeonghee Jeon, and Joongho Choi University of Seoul</p>
TP1-261	<p><b>Portable Functional Brain Imaging Chip for Frequency-Domain NIRS Method</b></p> <p>Bumjun Koh, Kyeongha Kwon, and Hyeon-Min Bae KAIST</p>
TP1-262	<p><b>A Mobile 3D-CNN Processor with Dual-Grained Sparsity-Aware Computation Utilizing Inter-Frame Variation</b></p> <p>Seungbin Kim, Hoichang Jeong, Wuyoung Jang, Keonhee Park, Bokyoung Seo, Jueun Jung, and Kyuho Lee UNIST</p>
TP1-263	<p><b>A 8GHz Delay Locked Loop with 16 Multi-phases in 65nm CMOS for BOST Skew Compensation</b></p> <p>Jinsoo Bae, Jongchan An, Gwangmyeong An, Hyunsu Jang, Taeho Kim, Myeongju Park, Yoonsang Lee, Songi Cheon, Hyanghee Park, Yunseo Song, and Junyoung Song Department of Electronics Engineering, Incheon National University</p>

TP1-265	<p><b>Dual-band CMOS Down-conversion Mixer for 5G NR FR2 Applications</b></p> <p>Eunsoo Kim, Segyeong Kim, Gyuwon Kim, and Junghwan Han Chungnam National University</p>
TP1-266	<p><b>A Temperature Insensitive 4GS/s 7-bit Time-domain ADC Using Replica Feedback Loop</b></p> <p>Gyuchan Cho and Jintae Kim Konkuk University</p>
TP1-267	<p><b>Binary Neural Networks Using Nanoelectromechanical Memory Switches</b></p> <p>Geun Tae Park<sup>1,2</sup> and Woo Young Choi<sup>1,2</sup> <sup>1</sup>Department of Electrical and Computer Engineering, Seoul National University, <sup>2</sup>ISRC, Seoul National University</p>
TP1-268	<p><b>Switching Voltage Analysis of Nanoelectromechanical Memory Switches</b></p> <p>Jin Wook Lee<sup>1,2</sup> and Woo Young Choi<sup>1,2</sup> <sup>1</sup>Department of Electrical and Computer Engineering, Seoul National University, <sup>2</sup>ISRC, Seoul National University</p>
TP1-269	<p><b>Energy-efficient Computing-in-memory Based System-on-chip Controlled by RISC-V Processor</b></p> <p>Jihoon Park<sup>1</sup>, Hyunmyung Oh<sup>2</sup>, Jehun Lee<sup>1</sup>, Jaeyong Jang<sup>1</sup>, Sanghyeok Han<sup>1</sup>, and Jae-Joon Kim<sup>1</sup> <sup>1</sup>Seoul National University, <sup>2</sup>POSTECH</p>
TP1-270	<p><b>Upper-mid Band 6G향 커플러 기반 차동 신호 보상 기법이 적용된 전압제어 발진기 소형화 연구</b></p> <p>윤태영<sup>1,2</sup>, 오정석<sup>1,2</sup> <sup>1</sup>서울대학교 전기정보공학부, <sup>2</sup>서울대학교 뉴미디어통신공동연구소</p>
TP1-271	<p><b>Seamless Noise Buck-boost Converter with Continuous Input/Output Current</b></p> <p>Seokhee Han, Jaewon Ryu, and Chulwoo Kim Department of Electrical Engineering, Korea University</p>
TP1-272	<p><b>Efficient CNN Accelerator: Enabling Inference and Training</b></p> <p>Geonhui Jang, SangBo Park, GiTae Park, Thaising Taing, Bogeun Jung, and Hyungwon Kim Chungbuk National University</p>
TP1-273	<p><b>A 4-GS/s 6-bit PVT-Variation Tolerant Time-Domain ADC with Delay Locked Loop</b></p> <p>Doona Song, Gyuchan Cho, and Jintae Kim Konkuk University</p>
TP1-274	<p><b>Triple-stacked Distributed Amplifiers Using CMOS 28 nm Process</b></p> <p>Hosung Kang, Cheonsang Song, and Jihoon Kim Kyonggi University</p>
TP1-275	<p><b>Area Efficient DAC with Switched Capacitor Amplifier Scheme for AMOLED Source Driver IC</b></p> <p>Min-Woo Kim, Sang-Min Lee, Yu-Guan Kim, Won-Jo Lee, Yun-Su Kim, and Byung-do Yang Department of Electronics Engineering, Chungbuk National University</p>
TP1-276	<p><b>A D-band Low Noise Amplifier based on 28-nm CMOS Technology</b></p> <p>Wooyong Keum, Jaeman Lee, Giyeong Nam, Jaewon Jang, Minsuk Choi, and Jae-Sung Rieh School of Electrical Engineering, Korea University</p>

TP1-277	<p><b>180nm 공정을 사용한 최대 1.6A의 전류를 구동할 수 있는 다상 통합 전압 레귤레이터 설계</b></p> <p>김기원, 김경민, 정현준, 김소영 성균관대학교 정보통신대학</p>
TP1-278	<p><b>A Single-TL, Simultaneous, Bi-directional, Skew-compensated and Multi-access Transceiver Link System</b></p> <p>Seong-Min Ko, Jun-Hyeok Park, and Dong-Woo Jee Ajou University</p>
TP1-279	<p><b>시스템 EMI 노이즈 분석을 위한 On-chip Embedded 오실로스코프의 설계</b></p> <p>Kyung Hoon Lee and Jin Gook Kim UNIST</p>
TP1-280	<p><b>LR-SoC: A Lightweight RISC-V SoC</b></p> <p>Min Young Lee<sup>1</sup>, Soo Min Rho<sup>1</sup>, Chan Hoon Kim<sup>1</sup>, Dae Eun Wi<sup>1</sup>, Sang Soo Park<sup>2</sup>, and Ki-Seok Chung<sup>1</sup> <sup>1</sup>Hanyang University, <sup>2</sup>Device Solutions, Samsung Electronics Co., Ltd.</p>
TP1-281	<p><b>다중 분할 병렬 결합 변압기를 사용한 5G 고효율 전력증폭기 설계</b></p> <p>김근태, 오규택, 유상진, 이옥구 부산대학교 전기전자공학과</p>
TP1-282	<p><b>Highly Sensitive Plasmonic Terahertz Detector with Integrated Sub-wavelength Aperture based on Trantenna</b></p> <p>Min Jae Kim<sup>1</sup>, Sang Hyo Ahn<sup>1</sup>, Yoo Bin Song<sup>1</sup>, Min Woo Ryu<sup>1,2</sup>, and Kyung Rok Kim<sup>1,2</sup> <sup>1</sup>Department of Electrical Engineering, UNIST, <sup>2</sup>Ternell Corp.</p>
TP1-283	<p><b>저전력 37uW 10-bit 모노톤닉 축차비교형 아날로그-디지털 변환기</b></p> <p>신술몬<sup>1</sup>, 최예광<sup>1</sup>, 권미정<sup>1</sup>, 박유현<sup>1</sup>, 이원제<sup>2</sup>, 장성민<sup>2</sup>, 김영식<sup>1</sup> <sup>1</sup>한동대학교 전산전자공학부, <sup>2</sup>한동대학교 전산전자공학과</p>
TP1-284	<p><b>A 28-Gb/s ISI-Resistant Digital CDR with Extended Pattern Utilization</b></p> <p>Suil Kang and Kwansoo Park Yonsei University</p>
TP1-285	<p><b>A 57-66 GHz Up-converter in 65-nm CMOS for WiGig Applications</b></p> <p>Geon Woo Park, Jin Man Myung, Ho Kim, Seungjik Lee, and Ilku Nam Pusan National University</p>
TP1-286	<p><b>Two-stage Operational Transconductance Amplifier with Controllable Reference Voltage</b></p> <p>Jiwon Lee and Byoung-ho Kim Hanyang University</p>
TP1-287	<p><b>저전력 센서 어플리케이션을 위한 Glitch-free 포스트 디바이더를 포함한 광대역 주파수 생성기</b></p> <p>정상돈, 전정훈 Department of Semiconductor and Display Engineering, Sungkyunkwan University</p>
TP1-288	<p><b>A 230-GHz ×12 Frequency Multiplier Chain in 250-nm InP HBT Technology</b></p> <p>Giyeong Nam, Wooyong Keum, Jaeman Lee, Jaewon Jang, Minseok Choi, Myeongjae Kim, and Jae Sung Rieh School of Electrical Engineering, Korea University</p>
TP1-289	<p><b>Electromagnetic Analysis Countermeasure Circuit for AES Crypto Module</b></p> <p>Dongmin Lee and Byong-Deok Choi Department of Electronic Engineering, Hanyang University</p>

TP1-290	<p><b>교차 쌍대의 증폭 구조를 활용한 소형화된 Upper-mid 대역 이득 가변 가능한 능동형 양방향 위상천이기</b> 박의찬<sup>1,2</sup>, 오정석<sup>1,2</sup> <sup>1</sup>서울대학교 전기정보공학부, <sup>2</sup>서울대학교 뉴미디어통신공동연구소</p>
TP1-291	<p><b>실시간 저면적 BDS B1C 수신기 구현</b> 황용택, 황지우, 이유석, 유호영 충남대학교 전자공학과</p>
TP1-292	<p><b>A Low Power and Compact 12bit 17MS/s SAR-ADC with Dual-Split Capacitor DAC</b> Taell Hwang, Malik Summair Asghar, and HyungWon Kim Department of Electronic Engineering, Chungbuk National University</p>
TP1-293	<p><b>A Low-Power, Low-Noise 3rd-Order Delta-Sigma ADC Using an Inverter-Based Pseudo-Pseudo Differential Integrator</b> Dong-Jick Kim and Jae Hoon Shim Kyungpook National University</p>
TP1-294	<p><b>A Bandwidth and Resolution Reconfigurable Noise-Shaping SAR ADC for PIM Applications</b> Dongwook Kim, Donggu choi, Junghyup Lee, and Jong-hyeok Yoon DGIST</p>
TP1-295	<p><b>Charge Sharing Based Computation-In-Memory for Energy Efficient Machine Learning Algorithm</b> Jaehyeon Woo<sup>1</sup>, Dongho Kim<sup>1</sup>, Seokhun Kim<sup>1</sup>, Hongwon Kim<sup>1</sup>, Taesung Kim<sup>1</sup>, Sangheon Lee<sup>1</sup>, Junseo Lee<sup>1</sup>, Jihwan Park<sup>1</sup>, Inseong Jeon<sup>1</sup>, Ijun Jang<sup>1</sup>, Jisu Kang<sup>1</sup>, Jaeseung Baik<sup>1</sup>, and Hanwool Jeong<sup>1,2</sup> <sup>1</sup>Kwangwoon University, <sup>2</sup>Articron Inc.</p>
TP1-296	<p><b>Efficient Pillar-Based 3D Object Detection Accelerator</b> Minjae Lee, Dowon Kim, and Jungwook Choi Hanyang University</p>
TP1-297	<p><b>A 7-Bit 32x Time-Interleaved SAR ADC with 2-Then-1-Bit/Cycle Conversion</b> Kyungmin Lee, Jonghyun Kim, and Hyungil Chae Konkuk University</p>
TP1-298	<p><b>Low-voltage Charge Pump based on Internal Gate-bias Boosting for Energy Harvesting Systems</b> So-Bin Lee and Ickjin Kwon Department of Electrical and Computer Engineering, Ajou University</p>
TP1-299	<p><b>A Low-Power IR-UWB CMOS Transmitter for Energy Harvesting Application</b> Dong-Won Lee and Ickjin Kwon Department of Electrical and Computer Engineering, Ajou University</p>
TP1-300	<p><b>A Scalable Dual-chip Neural Interface System</b> Joonyoung Lim, Chae-Eun Lee, Chieun Choi, and Yoon-Kyu Song Graduate School of Convergence Science and Technology, Seoul National University</p>
TP1-301	<p><b>A Low-power 8-b 500MS/s Loop-unrolled SAR ADC with Comparator Offset Calibration</b> Seunghyun Kim and Minjae Lee School of Electrical Engineering and Computer Science, GIST</p>
TP1-302	<p><b>A 500-kSPS Split-SAR ADC for Foreground Calibration</b> Myeong Gyu Gil<sup>1</sup> and Byoung Ho Kim<sup>1</sup> Hanyang University</p>
TP1-303	<p><b>A Wideband LO Generator for 5G FR1 Using a Single LC-VCO-Based SSPLL and a Ring-VCO-Based Fractional-Resolution Frequency Multiplier</b> Yongwoo Jo<sup>1</sup>, Juyeop Kim<sup>1</sup>, Yuhwan Shin<sup>1</sup>, and Jaehyouk Choi<sup>2</sup> <sup>1</sup>KAIST, <sup>2</sup>Seoul National University</p>

TP1-304	<p><b>Dedicated Processing Engines for Depth-wise Separable Convolution</b> Hyeon Seok Hong<sup>1,2</sup> and Hyun Kim<sup>1,2</sup></p> <p><sup>1</sup>Department of Electrical and Information Engineering, Seoul National University of Science and Technology, <sup>2</sup>Research Center for Electrical and Information Technology, Seoul National University of Science and Technology</p>
TP1-305	<p><b>SRAM-Based Near-Memory Computing for Accelerators for Efficient and Accurate Floating Point Computations</b> Myeong Eun Kwon, Je Hun Lee, and Jae-Joon Kim</p> <p>Seoul National University</p>
TP1-306	<p><b>웨이블릿 계수 분포를 활용한 Fast Domain Generalization</b> Jin Shin<sup>1,2</sup> and Hyun Kim<sup>1,2</sup></p> <p><sup>1</sup>Department of Electrical and Information Engineering, Seoul National University of Science and Technology, <sup>2</sup>Research Center for Electrical and Information Technology, Seoul National University of Science and Technology</p>
TP1-307	<p><b>정확하고 효율적인 부동소수점 행렬-곱 연산을 위한 정수 기반 이상치 인지 시스틀릭 배열 뉴럴 네트워크 가속기</b> Jehun Lee and Jae-Joon Kim</p> <p>Seoul National University</p>
TP1-308	<p><b>A CNN Accelerator based on 3D NAND Flash Memory with Input Reuse</b> In-Seok Lee, Jae-Joon Kim, and Jong-Ho Lee</p> <p>Department of Electrical and Computer, Seoul National University</p>
TP1-309	<p><b>Analog 기반 Triplet-Based STDP 학습 알고리즘 On-chip Learning 구조 설계</b> Hyeon-Seong Im and Jung-Hoon Chun</p> <p>Department of Semiconductor and Display Engineering, Sungkyunkwan University</p>
TP1-310	<p><b>Neural Network Framework – SW Architecture and Implementation for a Hardware Accelerator for Deep Reinforcement Learning</b> Dohyun Kim, Junghwan Choi, and Shiho Kim</p> <p><sup>1</sup>School of Integrated Technology, Yonsei University, <sup>2</sup>BK21 Graduate Program in Intelligent Semiconductor, Yonsei University</p>
TP1-311	<p><b>플래시 메모리 기반의 SNN 인공지능칩 연구</b> 이왕주, 이성현, 김진하, 김상훈, 박정우, 박민아, 정순규, 손민균, 서동우</p> <p>한국전자통신연구원</p>
TP1-312	<p><b>Optimizing Cu-CMP via Deep Learning to Predict Polyurethane Pad Durability</b> Seunghwan Lee<sup>1</sup>, Jaewon Lee<sup>1</sup>, Pengzhan Liu<sup>1</sup>, Sanghuck Jeon<sup>1</sup>, and Taesung Kim<sup>1,2</sup></p> <p><sup>1</sup>School of Mechanical Engineering, Sungkyunkwan University, <sup>2</sup>SKKU Advanced Institute of Nano Technology, Sungkyunkwan University</p>
TP1-313	<p><b>Highly Linear Charge Trap/DeTrap of Charge Trap FET Using Regulated Pulse</b> Jeong-In Choi and Kee-Won Kwon</p> <p>Department of Electrical and Computer Engineering, Sungkyunkwan University</p>
TP1-314	<p><b>Training-Aware Fixed-Point Simulation for Deep Learning Model</b> Seung Hwan Yoon and Young Ho Seo</p> <p>Kwangwoon University</p>

<b>TP1-315</b>	<b>Effects of Nonlinear Conductance Update of Synaptic Devices on On-Chip Learning in Hardware Neural Network</b> Seung Whan Kim, Jae-Joon Kim, and Jong-Ho Lee Seoul National University
<b>TP1-316</b>	<b>CNN Preprocessing Based Embedded AI Strawberry Classifier</b> Jinyeol Kim, Jongwon Oh, Joungmin Park, and Seung Eun Lee Department of Electronic Engineering, Seoul National University of Science and Technology
<b>TP1-317</b>	<b>keti.re.kr Neural Network Accelerator with Quantization for Edge Computing</b> Ji Hun Joe, Min Geon Shin, Han Ul Ryu, and Sung Ho Lee KETI

TP1-318	<p><b>Granular Adhesive for Injection-on-skin Interface</b>          Jaepyo Jang<sup>1</sup>, Sungjun Yoon<sup>2</sup>, and Donghee Son<sup>1,2</sup>  <sup>1</sup>Department of Electrical and Computer Engineering, Sungkyunkwan University, <sup>2</sup>Department of Artificial Intelligence System Engineering, Sungkyunkwan University</p>
TP1-319	<p><b>Enhanced Sensitivity of Si BioFETs with Ag Nanowire for CHIKV Virus Detection</b>          Jongmin Son, Wonyoung Choi, Seonghwan Shin, Jeonghyeon Do, and Jeong-Soo Lee          Department of Electrical Engineering, POSTECH</p>
TP1-320	<p><b>임피던스 바이오센싱 응용 분야를 위한 ECIS 기반의 Multi-well Array Impedance Biosensor 제작 및 연구</b>          Seok Gyu Kim<sup>1</sup>, Da Hyun Kang<sup>1</sup>, Su Gwon Nam<sup>1</sup>, and Moon Gyu Jang<sup>1,2</sup>  <sup>1</sup>School of Nano Convergence Technology, Hallym University, <sup>2</sup>Center of Nano Convergence Technology, Hallym University</p>
TP1-321	<p><b>An Implantable UVC Sterilization Capsule Device for Biomedical Applications</b>          Keodan Kim, Sangho Park, and Gunchul Shin          School of Materials Science &amp; Engineering, University of Ulsan</p>
TP1-323	<p><b>Adhesive Hydrogel-integrated Soft Wearable Liquid Metal Composite Electrode by Direct Laser Patterning</b>          Jaehyon Kim<sup>1</sup> and Donghee Son<sup>1,2</sup>  <sup>1</sup>Department of Electrical and Computer Engineering, Sungkyunkwan University, <sup>2</sup>Department of Artificial Intelligence System Engineering, Sungkyunkwan University</p>
TP1-324	<p><b>Injectable and Conductive Hydrogels for Neural Interfacing and Regeneration of Biological Tissues</b>          Subin Jin, Heewon Choi, Donghee Son, and Mikyung Shin          Sungkyunkwan University</p>
TP1-325	<p><b>Comparison of NIH/3T3 Cell Capacitance according to Impedance Pattern Size</b>          Da Hyun Kang<sup>1</sup>, Seok Gyu Kim<sup>1</sup>, Su Gwon Nam<sup>1</sup>, and Moon Gyu Jang<sup>1,2</sup>  <sup>1</sup>School of Nano Convergence Technology, Hallym University, <sup>2</sup>Center of Nano Convergence Technology, Hallym University</p>
TP1-326	<p><b>A Highly Power-efficient LDO with Reliable Low Input Voltage Operation</b>          Woojin Jang and Junghyup Lee          DGIST</p>
TP1-327	<p><b>Self-healing Bioelectronic Artificial Vascular Graft with Antithrombotic Capability</b>          Soojung An, Heewon Choi, and Donghee Son          Department of Electrical and Computer Engineering, Sungkyunkwan University</p>

<p><b>TP1-328</b></p>	<p><b>Quantum Monte Carlo Simulation for Predicting Radiation Therapy Dose</b>                  Hyeon Seong Jung, Ui Min Lee, Pamul Yadav, Jun Yong Lee, and Shi Ho Kim                  School of Integrated Technology, Yonsei University</p>
<p><b>TP1-329</b></p>	<p><b>Efficient Node Search in Binary Tree Using Quantum Walk</b>                  Pamul Yadav, Junyong Lee, Uimin Lee, Hyeonseong Jung, and Shiho Kim                  School of Integrated Technology, Yonsei University</p>
<p><b>TP1-330</b></p>	<p><b>Implementation of Five-qubit Quantum Information Processing in Silicon Device: A Preliminary Investigation</b>                  Junghee Ryu and Hoon Ryu                  KISTI</p>
<p><b>TP1-331</b></p>	<p><b>Constructing Ytterbium Ion Trap System for Quantum Computing Using Cryostat</b>                  Junhee Cho, Myunghun Kim, Sehyeon Gwon, Keumhyun Kim, Hyegoo Lee, Sangsoo Han, and Moonjoo Lee                  Department of Electrical Engineering, POSTECH</p>



TP1-332	<p><b>A PVT-Compensated 14-Bit Time-to-Digital Converter for LiDAR Applications</b></p> <p>Yongjin Kwon, Yeseung Choi, and Shinwoong Kim Department of Electrical and Electronic Engineering, Handong Global University</p>
TP1-333	<p><b>Skin-adhesive Hydrocolloid Based OLED for Enhanced Light Therapeutics</b></p> <p>Yujin Kwak<sup>1</sup>, Seohyeon Kim<sup>1</sup>, Youngwoo Kim<sup>2</sup>, DongWoon Lee<sup>2</sup>, Yeji Shin<sup>1</sup>, Eou-Sik Cho<sup>2</sup>, Sang Jik Kwon<sup>2</sup>, HyoungSoon Youn<sup>3</sup>, JinHong Jeong<sup>3</sup>, and Yongmin Jeon<sup>1</sup></p> <p><sup>1</sup>Department of Biomedical Engineering, Gachon University, <sup>2</sup>Department of Electronic Engineering, Gachon University, <sup>3</sup>T&amp;L Company</p>
TP1-334	<p><b>Thickness-dependent Electrical Properties of SnSe<sub>2</sub> Field-Effect Transistors Using Reactive Ion Etching</b></p> <p>HanWoong Choi<sup>1</sup>, Jin-Hoo Seong<sup>1,2</sup>, Hyo-Chang Lee<sup>3</sup>, Sang-il Kim<sup>4</sup>, and TaeWan Kim<sup>1</sup></p> <p><sup>1</sup>Department of Electrical Engineering and Smart Grid Research Center, Jeonbuk National University, <sup>2</sup>Advanced Instrumentation Institute, KRISS, <sup>3</sup>Department of Semiconductor Science, Engineering and Technology, Korea Aerospace University, <sup>4</sup>Department of Materials Science and Engineering, University of Seoul</p>
TP1-335	<p><b>Adaptability of 4D Radar in Autonomous Driving: A PointNet-Based Point Cloud Data Analysis</b></p> <p>In Su Lee, Min Jun Kwon, Won Jun Choi, Ki Chan Kim, and Tae Ik Kang Department of Electronic Engineering, Myongji University</p>
TP1-336	<p><b>Double Gate MOSFET 에서의 HKMG 의 적용과 두께 조절을 통한 성능 최적화 연구</b></p> <p>최훈<sup>1</sup>, 김대술<sup>1</sup>, 김도엽<sup>1</sup>, 전영우<sup>2</sup>, 김동현<sup>2</sup>, 김진우<sup>3</sup></p> <p><sup>1</sup>중앙대학교 전자전기공학부, <sup>2</sup>중앙대학교 화학신소재공학부, <sup>3</sup>광운대학교 전자공학과</p>
TP1-338	<p><b>웨이퍼 레벨 3D 적층 메모리 제조의 수율 효율성에 관한 연구</b></p> <p>정광휘, 권윤후, 김서영, 황찬우, 김사라은경 서울과학기술대학교 지능형반도체공학과</p>
TP1-339	<p><b>1200V급 <math>\beta</math>-Ga<sub>2</sub>O<sub>3</sub> Schottky Barrier Diode의 Edge Termination에 대한 연구</b></p> <p>이태은, 송창우, 박준영, 우솔아 부경대학교 전자공학과</p>
TP1-340	<p><b>Gate Controlled Thyristor 1T-DRAM의 Retention Time에 대한 연구</b></p> <p>손지민, 우솔아 부경대학교 전자공학과</p>
TP1-341	<p><b>구리/옥사이드 하이브리드 본딩 전 다양한 플라즈마 영향 연구</b></p> <p>임동현, 김민재, 권범성, 김혜교, 안종현, 김사라은경 서울과학기술대학교 지능형반도체공학과</p>
TP1-342	<p><b>2D PN (Te-MoS<sub>2</sub>) Semiconductor-Based High-performance Infrared Photodetector</b></p> <p>Shinhoi Kim<sup>1</sup> and Byungjin Cho<sup>1,2</sup></p> <p><sup>1</sup>Department of Advanced Material Engineering, Chungbuk National University, <sup>2</sup>Department of Urban, Energy, and Environmental Engineering, Chungbuk National University</p>
TP1-343	<p><b>Modulation of Lattice Structure and Electrical Properties of Graphene and MoS<sub>2</sub> through Surface Plasma Treatments</b></p> <p>Yoona Hwang<sup>1</sup>, Taehyeon Kim<sup>1</sup>, Seongho Kim<sup>1</sup>, Danbi Lee<sup>1</sup>, Yasir Hassan<sup>1</sup>, Minji Kang<sup>2</sup>, Hyeong-U Kim<sup>2</sup>, and Min Sup Choi<sup>1</sup></p> <p><sup>1</sup>Chungnam National University, <sup>2</sup>KIMM</p>

TP1-344	<p><b>Comparison of Electrical Characteristics of MoS<sub>2</sub> Transistors with Different h-BN Stacking and Contact Methods</b></p> <p>Sungbin Lee, Wonseop Lee, Taehwan Lee, Minju Kim, and Min Sup Choi Department of Materials Science and Engineering, Chungnam National University</p>
TP1-345	<p><b>Effect of Oxidation on Doping Concentration of ZnSnN<sub>2</sub> Grown by Reactive RF Magnetron Sputtering</b></p> <p>Dohyun Kim<sup>1</sup>, Juchan Hwang<sup>1</sup>, and Kwangwook Park<sup>1,2</sup> <sup>1</sup>Division of Advanced Materials Engineering, Jeonbuk National University, <sup>2</sup>Hydrogen and Fuel Cell Research Center, Jeonbuk National University</p>
TP1-346	<p><b>Ferroelectric-metal Field-effect Transistor의 Metal Work Function Variation 특성에 대한 연구</b></p> <p>하병주<sup>1</sup>, 김동영<sup>2</sup>, 윤택한<sup>2</sup>, 우솔아<sup>2</sup> <sup>1</sup>부경대학교 물리학과, <sup>2</sup>부경대학교 전자공학과</p>
TP1-347	<p><b>Ferroelectric-metal Field-effect Transistor의 Memory Window 특성에 대한 연구</b></p> <p>김동영<sup>1</sup>, 하병주<sup>2</sup>, 윤택한<sup>1</sup>, 우솔아<sup>1</sup> <sup>1</sup>부경대학교 전자공학과, <sup>2</sup>부경대학교 물리학과</p>
TP1-348	<p><b>Oxidized MoS<sub>2</sub>-Based Synapse with Robust and Low Power Operation</b></p> <p>Changwoo Pyo, Hyunsoo Kim, Juyeong Jung, and Myungsoo Kim UNIST</p>
TP1-349	<p><b>Interplay between Optoelectronic and Structural Changes during Thermal Annealing of 3D Multi-cation Metal Halide Perovskite Thin Films</b></p> <p>Taehyun Kong<sup>1</sup>, Yongjin Kim<sup>1</sup>, Heebeom Ahn<sup>1</sup>, Hyeonmin Choi<sup>1</sup>, Eunje Park<sup>1</sup>, Youhyun Nam<sup>1</sup>, Takhee Lee<sup>2</sup>, and Keehoon Kang<sup>1</sup> <sup>1</sup>Department of Materials Science and Engineering, Seoul National University, <sup>2</sup>Department of Physics and Astronomy, Seoul National University</p>
TP1-350	<p><b>Xe-LPP 방식에서의 EUV 광원 생성 효율의 최적화 연구를 위한 다중물리(열-기계-광학 연계) 해석</b></p> <p>오세형<sup>1</sup>, 전호성<sup>1</sup>, 오성현<sup>1</sup>, Dong Gun Lee<sup>3</sup>, Haekweon Jung<sup>3</sup>, 이은호<sup>1,2</sup> <sup>1</sup>Department of Mechanical Engineering, Sungkyunkwan University, <sup>2</sup>Department of Smart Fab. Technology, Sungkyunkwan University, <sup>3</sup>RnD Center, Esol Inc.</p>
TP1-351	<p><b>High Responsive InSe Based Photodetector Using RF Magnetron Sputtering</b></p> <p>Yedam Kim<sup>1</sup>, Minyoung Choi<sup>1</sup>, and Byungjin Cho<sup>1,2</sup> <sup>1</sup>Department of Advanced Material Engineering, Chungbuk National University, <sup>2</sup>Department of Urban, Energy, and Environmental Engineering, Chungbuk National University</p>
TP1-352	<p><b>Reduction of Contact Resistance in Tellurium Field-Effect Transistor Achieved by Graphene Interlayer</b></p> <p>Yeongeun Kwon<sup>1</sup> and Byungjin Cho<sup>1,2</sup> <sup>1</sup>Department of Advanced Material Engineering, Chungbuk National University, <sup>2</sup>Department of Urban, Energy, and Environmental Engineering, Chungbuk National University</p>
TP1-353	<p><b>Dielectric Properties of MIS Capacitors Utilizing the Nb<sub>2</sub>O<sub>5</sub> Oxidized from 2D NbS<sub>2</sub></b></p> <p>Minhee Kim<sup>1</sup> and Byungjin Cho<sup>1,2</sup> <sup>1</sup>Department of Advanced Material Engineering, Chungbuk National University, <sup>2</sup>Department of Urban, Energy, and Environmental Engineering, Chungbuk National University</p>
TP1-354	<p><b>Enhancing Schottky Diodes Performance with MSM-structured Organic Semiconductors for High-performance Electronics</b></p> <p>Bum Hwan Kim, Ji Hyeok Hwang, Jae Eun Kim, Da Un Jeong, Jin Seok Yoon, Nak Hee Kang, Sam Nyung Yi, Hyung Soo Ahn, Kyoung Hwa Kim, and Young Tea Chun Division of Electronics and Electrical Information Engineering, Korea Maritime and Ocean University</p>

TP1-355	<p><b>Solution-processed MoS<sub>2</sub> Based Robust RRAM with Low Power Switching and High Uniformity for Large-scale Fabrication</b></p> <p>Seungchan Lee, Changwoo Pyo, Dahyeon Kim, Seunghyeon Seo, and Myungsoo Kim UNIST</p>
TP1-356	<p><b>열처리 분위기에 따른 CuI 기반 반도체 박막의 특성 연구</b></p> <p>정혜린, 전희설, 홍기현 Chungnam National University</p>
TP1-357	<p><b>InAs 나노와이어의 전기적 특성 측정과 분석</b></p> <p>Choi Yuri, Yeon Hak Mu, and Jae Cheol Shin Dongguk University</p>
TP1-359	<p><b>금-은 나노입자 혼합 잉크 및 3차원 나노프린팅 기반 복합 플라즈모닉 구조 제작 및 특성 분석</b></p> <p>남관문, 김현우, 허다문, 구선화, 이예원, 이종민 Hallym University</p>
TP1-360	<p><b>Optimum Design of InGaAs/InGaAsP/InP SAGCM APD with a Hybrid Absorption Layer Structure</b></p> <p>Min Ju Moon, Sung Un Baek, and Jae Chul Shin Dongguk University</p>
TP1-361	<p><b>Study on the Electrical Properties of Monolayer MoS<sub>2</sub> PN Junction</b></p> <p>Min Su Kim<sup>1</sup>, Won Jun Lee<sup>2</sup>, and Jae Cheol Shin<sup>1</sup> <sup>1</sup>School of Electronic and Electrical Engineering, Dongguk University, <sup>2</sup>School of Electrical Engineering, Korea University</p>
TP1-362	<p><b>AI-Based SRAM Design and Performance Analysis for Cache Memory</b></p> <p>Junhyeok Kim<sup>1</sup>, Eunseo Kwon<sup>1</sup>, Jiyong Kim<sup>2</sup>, Sanggil Park<sup>1</sup>, Eunjin Choi<sup>1</sup>, and Taigon Song<sup>3</sup> <sup>1</sup>School of Electronic and Electrical Engineering, Kyungpook National University, <sup>2</sup>Department of Chemistry, Kyungpook National University, <sup>3</sup>School of Electronics Engineering, Kyungpook National University</p>
TP1-363	<p><b>Measurement of Wafer Edge Profiles Using Telecentric Illumination and Imaging Optics for Semiconductor Machine Vision</b></p> <p>Younghoo Kim<sup>1,2</sup>, Taehyup Kim<sup>1,2</sup>, Lee Jun<sup>1,2</sup>, Taeil Han<sup>1,2</sup>, Sang Jeon Hong<sup>2,3</sup>, and Garam Kim<sup>1,2</sup> <sup>1</sup>Department of Electronics Engineering, Myongji University, <sup>2</sup>Semiconductor Equipment Engineering Program, Myongji University, <sup>3</sup>Department of Semiconductor Engineering, Myongji University</p>
TP1-364	<p><b>Growth of Rutile TiO<sub>2</sub> Thin Film by Plasma-Enhanced Atomic Layer Deposition and Its Impact on Capacitance</b></p> <p>Su Min Eun<sup>1</sup>, Ji Hyeon Hwang<sup>2</sup>, Ha Hyeon Yoon<sup>1</sup>, and Byung Joon Choi<sup>1</sup> <sup>1</sup>Department of Material Science and Engineering, Seoul National University of Science and Technology, <sup>2</sup>Department of Optometry, Seoul National University of Science and Technology</p>
TP1-365	<p><b>3D 나노프린팅 기반 금/은 하이브리드 나노구조 제작 및 특성 분석</b></p> <p>은강민, 강문수, 허다문, 이예원, 구선화, 이종민 Hallym University</p>
TP1-366	<p><b>Optical and Electrical Characteristics of InGaAs APD with Different Types of Structures</b></p> <p>백성운<sup>1</sup>, 문민주<sup>1</sup>, 이윤재<sup>2</sup>, 김홍학<sup>2</sup>, 신재철<sup>1</sup> <sup>1</sup>동국대학교 전자전기공학부, <sup>2</sup>KOPTI</p>
TP1-367	<p><b>Proper GTECH Cells for Balanced Ternary Logic Synthesis</b></p> <p>Hanmok Park, Seounghoon Kim, Hyeonjin Kim, Inhye Hur, Hyungpyo Kim, and Taigon Song School of Electronics Engineering, Kyungpook National University</p>

TP1-368	<p><b>A Wearable and Stretchable Gold Nanomembrane Electrode with Adhesive Hydrogel for Electrocardiogram Monitoring</b></p> <p>Hyelim Lee<sup>1</sup>, and Donghee Son<sup>2</sup></p> <p><sup>1</sup>School of Electronic and Electrical Engineering, Sungkyunkwan University, <sup>2</sup>Department of Electrical and Computer Engineering, Sungkyunkwan University</p>
TP1-369	<p><b>Achieving Low Resistivity and Superior Thermal Stability of Sub-5 nm Atomic Layer Deposited Ru Films by Introducing Ultrathin Oxide Capping Layers</b></p> <p>Eun Ji Joo, Jae Hyeon Lee, and Jeong Hwan Han</p> <p>Department of Materials Science and Engineering, Seoul National University of Science and Technology</p>
TP1-370	<p><b>Facile Formation of Multicolored Quantum Dot Stack Films for Efficient White Light-Emitting Diodes</b></p> <p>Eun A Kim<sup>1</sup> and Seong-Yong Cho<sup>2</sup></p> <p><sup>1</sup>Department of Materials Science and Engineering, Myongji University, <sup>2</sup>Department of Photonics and Nanoelectronics, Hanyang University</p>
TP1-371	<p><b>An 8-bit Low Power Asynchronous SAR ADC for Sensor Node Application</b></p> <p>Ji-Hun Son, Min-Seok Kim, Hong-Sung Kim, and Jimin Cheon</p> <p>Kumoh National Institute of Technology</p>
TP1-372	<p><b>Contact Resistance in Emerging Semiconductors: A Comparative Study on GaN, In<sub>2</sub>O<sub>3</sub>, and ZnO Using Quantum and Semiclassical Methods</b></p> <p>Hyeongjun Jang, KiHoon Lee, GeonWoo Kim, Taehyun Kim, and Changwook Jeong</p> <p>UNIST</p>
TP1-373	<p><b>Vacancy Engineering for Improvement of GaN Power Semiconductor</b></p> <p>Min Ji Sun, Se Young Jang, and Sangwoo Ryu</p> <p>Department Advanced Material Engineering, Kyonggi University</p>
TP1-374	<p><b>A 12-bit Single Slope ADC with Dual CDS for a CMOS Image Sensor</b></p> <p>Ji-Min Ye, Du-San Baek, Yun-Ha Jeong, Jun-Soo Park, and Jimin Cheon</p> <p>Kumoh National Institute of Technology</p>
TP1-375	<p><b>패키지 별 솔더 보이드 비율에 따른 전력반도체의 접합온도 수치 해석 연구</b></p> <p>Yun-Jae Lee and Sung-Uk Zhang</p> <p>Digital Twin Laboratory, Dong-eui University</p>
TP1-376	<p><b>Tailoring Composition of N-doped In<sub>2</sub>O<sub>3</sub> Grown by Atomic Layer Deposition for Optimizing the Ferromagnetic and Semiconductor Properties</b></p> <p>Na Yeon Lee and Jeong Hwan Han</p> <p>Department of Material Science and Engineering, Seoul National University of Science and Technology</p>
TP1-377	<p><b>Optimization of Red, Green, and Blue Top-emitting Tandem Quantum Dot Light-emitting Diodes on Silicon for Microdisplay Applications</b></p> <p>Suyun Kim<sup>1</sup>, Sohee Kim<sup>1</sup>, Sumin Kim<sup>1</sup>, Soobin Sim<sup>1</sup>, Chun-Won Byun<sup>2</sup>, and Hyunkoo Lee<sup>1</sup></p> <p><sup>1</sup>Department of Electrical Engineering, Sookmyung Women's University, <sup>2</sup>Reality Display Research Section, ETRI</p>
TP1-378	<p><b>Enhancing Retention Time in Capacitor-less 2T DRAM Using IGZO</b></p> <p>Hee Su Kim, Chang Young Lim, Yeon Seok Kim, and Min-Woo Kwon</p> <p>Department of Electric Engineering, Gangneung-Wonju National University</p>
TP1-379	<p><b>Theoretical Analysis on the Surface Reactions Governing Composition of Atomic Layer Deposited Multicomponent Zinc Chalcogenides</b></p> <p>Chi Hun Kang and Bonggeun Shong</p> <p>Hongik University</p>

TP1-380	<b>Theoretical Analysis on the Effect of Organic Sulfur Sources for ALD of MoS<sub>2</sub></b> Myeong Kyun Nam and Bonggeun Shong Hongik University
TP1-381	<b>셀룰로오스 기반 고분자 전하트랩층을 이용한 생분해성 단기 저장 트랜지스터 메모리의 전기적 특성</b> 이정인, 성백상, 이종희, 김민회 Department of Creative Convergence Engineering, Hanbat National University
TP1-382	<b>상부 금속 도입을 통한 넓은 밴드갭 반도체 기반 전하트랩 메모리의 효율적인 전기적 지우기 동작</b> Hayoung Kim <sup>1</sup> , Amos A. Boampong <sup>2,3</sup> , Chang-Hyun Kim <sup>4</sup> , and Min-Hoi Kim <sup>1</sup> <sup>1</sup> Department of Creative Convergence Engineering, Hanbat National University, <sup>2</sup> Research Institute of Printed Electronics & 3D Printing, Hanbat National University, <sup>3</sup> Industry University Cooperation, Hanbat National University, <sup>4</sup> School of Electronic Engineering, Gachon University
TP1-383	<b>다양한 일함수의 전극을 활용한 전하트랩 메모리의 지우기 동작 전압 크기 감소</b> 김우석 <sup>1</sup> , 권진혁 <sup>2,3</sup> , 김민회 <sup>1,2,3</sup> <sup>1</sup> Department of Creative Convergence Engineering, Hanbat National University, <sup>2</sup> Research Institute of Printed Electronics & 3D Printing, Hanbat National University, <sup>3</sup> Industry University Cooperation Foundation, Hanbat National University
TP1-384	<b>저항변화메모리를 이용한 가변 커패시터</b> Hui-Su Yang and Min-Hoi Kim Department of Creative Convergence Engineering, Hanbat National University
TP1-385	<b>올리고머 유기물 반도체 메모리의 전기적 지우기 동작을 위한 구조적 접근</b> Yu-Jeong Hwang, Ha-young Kim, and Min-Hoi Kim Department of Creative Convergence Engineering, Hanbat National University
TP1-386	<b>P(VDF-TrFE)를 사용한 산화물 박막 트랜지스터의 바이어스 스트레스로 인한 강유전성 메모리 점멸비 향상</b> Bon Seong Gu, Eun Seo Park, Jin Hyuk Kwon, and Min Hoi Kim Department of Creative Convergence Engineering, Hanbat National University
TP1-387	<b>Copper Iodide Thin Film as a Transparent Conductors</b> Sungsan Kang and Sangyeon Pak School of Electronic and Electrical Engineering, Hongik University
TP1-388	<b>전해질 게이트 트랜지스터의 고분자 반도체 표면 형상과 이온 도핑 효과</b> 강평, 전희설, 흥기현 Chungnam National University
TP1-389	<b>Area-selective Atomic Layer Deposition of Al<sub>2</sub>O<sub>3</sub> Thin Films for Metal versus Dielectric Selectivity Using Vapor-dosed Alkanethiols</b> Jiwoo Oh, Jinseon Lee, Donghyeon Im, and Woo-Hee Kim Department of Materials Science and Chemical Engineering, Hanyang University
TP1-390	<b>The Effect of Edge Termination on the Performance of 4H-SiC Schottky Barrier Diode: The TCAD Study</b> Seok Hyun Byun <sup>1</sup> , Hoyoung Cho <sup>2</sup> , Sungsik Lee <sup>1</sup> , and Jeongkyun Roh <sup>2</sup> <sup>1</sup> Department of Electronics Engineering, Pusan National University, <sup>2</sup> Department of Electrical Engineering, Pusan National University
TP1-391	<b>Electrical and Optical Characteristics of MoS<sub>2</sub> and InP heterostructure</b> Dong Hwi Choi <sup>1</sup> , Jae Hyeop Lee <sup>1</sup> , Hong Hyuk Kim <sup>2</sup> , and Jae Cheol Shin <sup>1</sup> <sup>1</sup> Dongguk University, <sup>2</sup> KOPTI
TP1-392	<b>Current Fluctuation in Ambipolar Tellurium Thin Film Transistors: Hole versus Electron</b> Min Cheong, Dahyun Choi, Eunji Sim, Minji Chae, and Min-Kyu Joo Department of Applied Physics, Sookmyung Women's University

TP1-393	<p><b>열처리 공정 중 분위기가스 변화를 통한 P-Type 트랜지스터 성능 향상</b></p> <p>강평, 오윤주, 홍기현 Chungnam National University</p>
TP1-394	<p><b>입출력 요청 인터페이스 분석</b></p> <p>Chanyong Lee and Donghyun Kang Gachon University</p>
TP1-395	<p><b>Enhanced Ferroelectricity of <math>Hf_{1-x}Zr_xO_2</math> Deposited via Atomic Layer Deposition Using a Novel Precursor with Improved Thermal Stability</b></p> <p>Hye-Won Cho<sup>1</sup>, Hyo-Bae Kim<sup>1</sup>, Seung-Eon Ahn<sup>2,3</sup>, and Ji-Hoon Ahn<sup>1</sup> <sup>1</sup>Department of Materials Science and Chemical Engineering, Hanyang University, <sup>2</sup>Department of IT·Semiconductor Convergence Engineering, Tech University of Korea, <sup>3</sup>Department of Nano &amp; Semiconductor Engineering, Tech University of Korea</p>
TP1-396	<p><b>가비지 컬렉션 및 압축 기법에 의한 아파치 카프카 생성자 성능 분석</b></p> <p>Hyunwoo Kim and Donghyun Kang Gachon University</p>
TP1-397	<p><b>ANN-enhanced Compact Modeling for FET Design: Bridging Neural Networks with SPICE for Efficient Simulations</b></p> <p>Usubov Tural, Gi Young Hong, and Changwook Jeong UNIST</p>
TP1-398	<p><b>Timing-aware Tier Partitioning for 3D ICs with Critical Path Consideration</b></p> <p>Sojung Park and Heechun Park Kookmin University</p>
TP1-399	<p><b>Deep Learning Driven Pre-route Arc Length Prediction Considering Routing Priority</b></p> <p>Hyunmin Jo and Heechun Park Kookmin University</p>
TP1-400	<p><b>Electrical Properties of P-MoS<sub>2</sub> by Using Transmission Line Model</b></p> <p>Gyeong Min Kim<sup>1</sup>, Guen Hyung Oh<sup>2</sup>, Tae Wan Kim<sup>2</sup>, Tae Jin Jeong<sup>3</sup>, Sung Kim<sup>3</sup>, and Jae Cheol Shin<sup>1</sup> <sup>1</sup>Dongguk University, <sup>2</sup>Jeonbuk National University, <sup>3</sup>Kyunghee University</p>
TP1-401	<p><b>2D MoS<sub>2</sub> Field Effect Transistor with Asymmetric Contact</b></p> <p>Jinhyeok Pyo and Sangyeon Pak School of Electronic and Electrical Engineering, Hongik University</p>
TP1-402	<p><b>Chiplet Placement with Sequence Pair Based Tree and Branch-and-bound Method Considering Chiplet Ordering</b></p> <p>Gang-Min Jeon and Heechun Park Kookmin University</p>
TP1-403	<p><b>Cr 기반 음성 접촉 확보를 위한 열처리 공정 최적화</b></p> <p>박창준<sup>1</sup>, 방수빈<sup>1</sup>, 차정혁<sup>1</sup>, 김도균<sup>2</sup>, 김종원<sup>1</sup>, 최성규<sup>2</sup>, 손남기<sup>2</sup> 김용수<sup>1</sup> <sup>1</sup>울산대학교, <sup>2</sup>다다코리아</p>
TP1-404	<p><b>Improvement of BEOL Compatible Indium-based-oxide TFT for DRAM</b></p> <p>Dahui Jeon, InHong Hwang, and In-Hwan Baek Department of Chemical Engineering, Inha University</p>
TP1-405	<p><b>Electrical and Optical Properties of 2D TMD Heterojunction Structures</b></p> <p>Jae Hyeop Lee<sup>1</sup>, Dong Hwi Choi<sup>1</sup>, Guen Hyung Oh<sup>2</sup>, Tae Wan Kim<sup>2</sup>, and Jae Cheol Shin<sup>1</sup> <sup>1</sup>Dongguk University, <sup>2</sup>Jeonbuk National University</p>

TP1-406	<p><b>Fabrication of Atomic-layer-deposited Ru/Mo<sub>2</sub>N Bilayer as Bottom Electrode for Next-generation DRAM Capacitor</b></p> <p>Seon Gu Choi<sup>2</sup>, Wangu Kang<sup>1</sup>, and Jeong Hwan Han<sup>1</sup></p> <p><sup>1</sup>Department of Materials Science and Engineering, Seoul National University of Science and Technology, <sup>2</sup>Department of Materials Science and Engineering, Kangwon National University</p>
TP1-407	<p><b>3D 나노프린팅 기반 양자점 나노구조체 제작 및 특성 분석</b></p> <p>채형진, 김진원, 허다문, 이예원, 구선화, 이종민</p> <p>Hallym University</p>
TP1-408	<p><b>Solution-Phase Synthesis of 1D Cs<sub>3</sub>Cu<sub>2</sub>I<sub>5</sub> Single Crystal for Device Applications</b></p> <p>Hyunmi <b>철희</b> Kang</p> <p>Hanyang University</p>
TP1-409	<p><b>Enhanced Efficiency of GaN Light-Emitting Diodes with a Si Hole Injector</b></p> <p>Min Su Kim, Kyungmi Yang, Ju Mi Go, Yoolim Han, Go Eun Ham, and Kwangeun Kim</p> <p>School of Electronics and Information Engineering, Korea Aerospace University</p>
TP1-410	<p><b>반도체 테스트 장비의 DPS 데이터 전송 효율 개선을 위한 FPGA 기반 SPI 모듈 설계</b></p> <p>Jonghee Park<sup>1</sup>, Hwarang Baek<sup>1</sup>, Jiseok Lee<sup>1</sup>, Junhyeong Ji<sup>1</sup>, and Youbean Kim<sup>2</sup></p> <p><sup>1</sup>Department of Electronic Engineering, Myongji University, <sup>2</sup>Department of Semiconductor Engineering, Myongji University</p>
TP1-411	<p><b>Investigation of Ferroelectric Properties of ALD-(Hf,Zr)O<sub>2</sub> Thin Films from Cryogenic to Room Temperatures</b></p> <p>Yeseo Choi, Hye Ryeon Park, Seongbin Park, Jongmug Kang, Juntak Jeong, and Si Joon Kim</p> <p>Kangwon National University</p>
TP1-412	<p><b>Sub-1V Operation of Memristor Devices via Vacancy Controlled MoS<sub>2</sub></b></p> <p>Sohyeon Park, Seonyou Park, and Sangyeon Pak</p> <p>Hongik University</p>
TP1-413	<p><b>A 1.8 GHz Charge-pump PLL for DDR3 Interface of MRAM Controller</b></p> <p>Hyeon-Ho Kim, Seong-Yun Kim, Dong-Seob Shin, and Young-Chan Jang</p> <p>Electronic Engineering, Kumoh National Institute of Technology</p>
TP1-414	<p><b>낮은 온저항을 가지는 1.2 kV 급 SiC Double Trench MOSFET의 CSL 농도 최적화 설계</b></p> <p>김진훈, 윤효원, 김상엽, 박수민, 백두산, 이승연, 석오균</p> <p>금오공과대학교</p>
TP1-415	<p><b>Electrodeposition of Single Crystal Cu for Sub-<math>\mu</math>m Scale Vias of BEOL</b></p> <p>Jae-Wook Lee<sup>1</sup> and Jae Yong Song<sup>2</sup></p> <p><sup>1</sup>Department of Electronic Materials Engineering, Kwangwoon University, <sup>2</sup>Department of Semiconductor Engineering, POSTECH</p>
TP1-416	<p><b>Design of PAM4 Transmitter in 28-nm CMOS Technology</b></p> <p>Yu Jin Byeon and Min Seong Choo</p> <p>Department of Electronic Engineering, Hanyang University</p>
TP1-417	<p><b>Modeling of DSP-Based Receiver and Analysis Data Phase With Stochastic Method</b></p> <p>Jee Hyun Kwon, Tae Hyun Kim, and Min Seong Choo</p> <p>Department of Electronic Engineering, Hanyang University</p>
TP1-418	<p><b>매닉스커스 유도 기반 3차원 나노 프린팅으로 제작된 CNT 나노구조물</b></p> <p>Kim JaeMin, Choi JaeWon, Heo DaMun, Lee YeWon, Gu SeonHwa, and Lee JongMin</p> <p>School of Semiconductor · Display, Hallym University</p>

TP1-419	<p><b>Technology of Channel Equalization at the Receiver in 28nm CMOS</b></p> <p>Dong-Eun Lee, Tae-Hyeon Kim, and Min-Seong Choo Department of Electronic Engineering, Hanyang University</p>
TP1-420	<p><b>Development of A Web-Based Simulation for Understanding MOSFETs</b></p> <p>Hyeri Hong, Jiyeon Oh, Seungwoo Han, Taejun Kim, Guna Park, and Kiwon Lee Department of Electronic Engineering, Wonkwang University</p>
TP1-421	<p><b>Logic-in-Memory Technology Mapping Framework for Memristor Crossbar with Maximized Parallelism</b></p> <p>Ik-Kyum Kim and Heechun Park Kookmin University</p>
TP1-422	<p><b>Effect of Gate Dielectric Interfacial Layer on the Performance of Organic CMOS Logic Gates</b></p> <p>Gyu-Young Kim, Gun-Ryeol Cho, Gab-Jin Sung, Jin-Hong Ahn, Moohyun Kim, Kyoungun Lee, Yeyun Bae, and Jeongkyun Roh Department of Electrical Engineering, Pusan National University</p>
TP1-423	<p><b>Floating Gate Flash와 Charge Trap Flash의 최적 Tunneling Oxide 두께 비교</b></p> <p>서상혁, 조성주, 채한수, 전예림, 김상완 서강대학교 전자공학과</p>
TP1-424	<p><b>Channel Shape and Gate Thickness Design of GAAFET for 3D-DRAM</b></p> <p>Myeongjae Choi, Hyeongseop Lim, and Changhwan Shin Department of Semiconductor Engineering, Korea University</p>
TP1-425	<p><b>A Redox-Mediator-Integrated Stretchable and Flexible Energy Storage System with Improved Energy Storage Ability</b></p> <p>SunWoo Lee<sup>1</sup>, Jung Hyeon Kang<sup>1</sup>, Suok Lee<sup>2</sup>, Young-Woo Lee<sup>2</sup>, and A-Rang Jang<sup>1</sup> <sup>1</sup>Division of Electrical, Electronic and Control Engineering, Kongju National University, <sup>2</sup>Department of Energy Engineering, Soonchunhyang University</p>
TP1-426	<p><b>Copper Oxide Decorated Laser-induced Graphene Based Highly Sensitive and Flexible Non-enzymatic Glucose Sensor</b></p> <p>Gye Hyeon Lee<sup>1</sup>, Minsoo Lee<sup>1</sup>, Young-Woo Lee<sup>2</sup>, and A-Rang Jang<sup>1</sup> <sup>1</sup>Division of Electrical, Electronic and Control Engineering, Kongju National University, <sup>2</sup>Department of Energy Engineering, Soonchunhyang University</p>
TP1-427	<p><b>Study of the Soluble Organic Light Emitting Diode According to Different TFB Molecular Weight as a Hole Transport Layer</b></p> <p>Seok Hwan Jang and Jun Young Kim Department of Semiconductor Engineering, Gyeongsang National University</p>
TP1-428	<p><b>Study of the Inverted Polymer Solar Cell Using IGZO Electron Extraction Layer</b></p> <p>Gun Woong Kim and Jun Young Kim Department of Semiconductor Engineering, Gyeongsang National University</p>
TP1-429	<p><b>A 32 Gb/s 0.84 pJ/b Referenceless Baud-Rate CDR with Integrated Pattern Decoding</b></p> <p>Yoojin Jung, Youngwook Kim, and Kwanso Park Yonsei University</p>
TP1-430	<p><b>Analysis of Temperature Dependent Characteristics of Photodetector based on Feedback Field Effect Transistor</b></p> <p>Jeongmin Koo<sup>1</sup>, Yonghwan Kim<sup>2</sup>, Dahee Jin<sup>3</sup>, and Il Hwan Cho<sup>1</sup> Department of Electronic Engineering, Myongji University</p>



TP1-431	<p><b>Low-Cost Maskless Photolithography System based on Digital Micromirror Device</b></p> <p>Gyu Rin Shin, Yun Seong Choi, Jae Seong Pyo, Moohyun Kim, Kyoungun Lee, Hoyoung Cho, and Jeongkyun Roh</p> <p>Department of Electrical Engineering, Pusan National University</p>
TP1-432	<p><b>Fast-Response Low-Dropout Regulator with Slew-Rate Enhanced Error-Amp</b></p> <p>Yun-su Kim, Min-Woo Kim, Yu-Guan Kim, Won-Jo Lee, and Byung-do Yang</p> <p>Department of Electronics Engineering, Chungbuk National University</p>
TP1-433	<p><b>A Wearable Hydrogen Sensor Using Porous PDMS Sponge Coated with Pd Nanoparticles Decorated CNTs</b></p> <p>Min-Hyuk Lim, SunWoo Lee, Han Gyeol Choi, and A-Rang Jang</p> <p>Division of Electrical, Electronic and Control Engineering, Kongju National University</p>
TP1-434	<p><b>Multilayer MoS<sub>2</sub> Based Vertical Memristor with Low Power Operation Using Copper Active Electrode</b></p> <p>Juyeong Jung, Changwoo Pyo, Seungchan Lee, SeongJin Park, YoungJoon Lee, Dahyeon Kim, and Myungsoo Kim</p> <p>UNIST</p>
TP1-435	<p><b>Light-induced Modulation of the Structural and Optical Properties of Perovskite Nano-structures</b></p> <p>Min Jin Kim, Ga Eun Kim, and Sang Hyun Lee</p> <p>School of Chemical Engineering, Chonnam University</p>
TP1-436	<p><b>Revealing Impact of Parasitic Capacitance and Introducing Concealed Architecture to Boost Electrical Performance in 2-D Channel Devices</b></p> <p>Hak Jun Ban, Seung Won Lee, and Seul Ki Hong</p> <p>Department of Semiconductor Engineering, Seoul National University of Science and Technology</p>
TP1-437	<p><b>Investigation of the Characteristics of 3D NAND Flash Combining Wave Shaped and Tapered Channel Effects</b></p> <p>Jueun Kim, Hyunseo Oh, Hyeongjun So, and Il Hwan Cho</p> <p>Department of Electronic Engineering, Myongji University</p>
TP1-438	<p><b>A Study on the Equivalent Oxide Thickness of Hf<sub>1-x</sub>Zr<sub>x</sub>O<sub>2</sub> Thin Films for Next-generation DRAM Applications</b></p> <p>Hyeonhong Min, Jongmug Kang, Seongbin Park, Hye Ryeon Park, Juntak Jeong, Yeseo Choi, Seungbin Lee, and Si Joon Kim</p> <p>Kangwon National University</p>
TP1-439	<p><b>ZrO<sub>2</sub> 절연막을 이용한 IGZO FET의 특성 향상 연구</b></p> <p>Junyeoung Hong<sup>1</sup>, Hyeonseo Do<sup>1</sup>, Jaemin Jo<sup>1</sup>, Seungmo Kim<sup>2</sup>, Hyunjun Hwang<sup>2</sup>, and Byeong-Hun Lee<sup>2</sup></p> <p><sup>1</sup>Department of Semiconductor Engineering, POSTECH, <sup>2</sup>Department of Electrical Engineering, POSTECH</p>
TP1-440	<p><b>Optimization of ALD BeO Gate Dielectrics for 3D CMOS Devices</b></p> <p>Semi An<sup>1</sup>, Jong Hyun Bae<sup>2</sup>, Sangoh Han<sup>2</sup>, Yoonseo Jang<sup>2</sup>, W. Bielawski<sup>3</sup>, and Jungwoo Oh<sup>2</sup></p> <p><sup>1</sup>Integrated Science and Engineering Division, Yonsei University, <sup>2</sup>School of Intergrated Technology, Yonsei University. <sup>3</sup>CMCM IBS, Department of Chemistry, UNIST</p>
TP1-441	<p><b>Design of Wearable Transparent Rectenna System Using Roll-to-Roll Lithography for Energy Harvesting and Microwave Power Transfer</b></p> <p>Se Hyun Jeong<sup>1</sup>, Hyun Woo Jeong<sup>1</sup>, Jeong-Wook Kim<sup>2</sup>, Sang-Chan Park<sup>1</sup>, Young-Dam Kim<sup>1</sup>, and Jae-Hyuk Ahn<sup>1</sup></p> <p><sup>1</sup>Department of Electronics Engineering, Chungnam National University, <sup>2</sup>Electronics and Telecommunications Research Institute</p>

TP1-442	<p><b>고성능 광센서를 위한 CsPbBr<sub>3</sub>/MoS<sub>2</sub> 이종접합 특성 연구</b></p> <p>Young Jun Rho, Min Jin Kim, Jun Woo Kim, Dong Yeong Kim, and Sang Hyun Lee School of Chemical Engineering, Chonnam National University</p>
TP1-443	<p><b>Atomic Layer Deposited Mg-doped ZnO for Quantum Dot Light-Emitting Diodes</b></p> <p>Min Seok Kim<sup>1</sup>, Hyo Geun Lee<sup>2</sup>, Hyeonseung Ban<sup>2</sup>, Jisu Han<sup>3</sup>, Jaehoon Lim<sup>3,4</sup>, and Seong-Yong Cho<sup>2</sup> <sup>1</sup>Department of Materials Science and Engineering, Myongji University, <sup>2</sup>Department of Photonics and Nanoelectronics, Hanyang University, <sup>3</sup>Department of Energy Science, Center for Artificial Atoms, Sungkyunkwan University, <sup>4</sup>SKKU Institute of Energy Science and Technology (SIEST), DFEE, Sungkyunkwan University</p>
TP1-444	<p><b>Flexible Device with Resistive Random-access Memory Using Organic Polymer for Transient Electronics and Neuromorphic Application</b></p> <p>Ho Jung Jeon<sup>1</sup> and You Seung Rim<sup>1,2</sup> <sup>1</sup>Department of Intelligent Mechatronics Engineering and Convergence Engineering for Intelligent Drone, <sup>2</sup>Department of Semiconductor System Engineering, Sejong University</p>
TP1-445	<p><b>A Study of Embedded Microprocessors in the Automotive Field</b></p> <p>Ji Hye Yang Kyungpook National University</p>
TP1-446	<p><b>커패시터 충전 효율 개선을 위한 정류 및 Charge Pump 시스템의 최적화 연구</b></p> <p>김야현, 김지민, 박준영, 윤유빈, 이상목, 허준영, 윤광석 Department of Electronic Engineering, Sogang University</p>
TP1-447	<p><b>Palladium-deposited Molybdenum Disulfide-Based Hydrogen Sensor Using Machine Learning Technology for Environmental Adaptation</b></p> <p>Taeha Kim, U Jin Cho, Dongjun Jang, Youhyeong Jeon, and Min-Woo Kwon Department of Electric Engineering, Gangneung-Wonju National University</p>
TP1-448	<p><b>Optimization of Process Conditions of ZrO<sub>2</sub> Thin Films Deposited by Atomic Layer Deposition Using a New Precursor</b></p> <p>Ji-Hwan Kim, Seung Won Lee, Yoonchul Shin, Yeon-Ji Jeon, and Ji-Hoon Ahn Department of Materials Science and Chemical Engineering, Hanyang University</p>
TP1-449	<p><b>재구성 가능한 실리콘 트랜지스터의 채널 길이에 따른 전기적 특성 연구</b></p> <p>김나현, 임두혁 경기대학교</p>
TP1-450	<p><b>테라헤르츠 시간영역 분광법을 이용한 실리콘 기판의 광 전도도 분석</b></p> <p>박수정, 이재영, 김튼튼 울산대학교 물리학과</p>
TP1-451	<p><b>A Study of Monolayer Multicomponent Thin Films of Dysprosium-Doped HfO<sub>2</sub> Grown by Atomic Layer Deposition</b></p> <p>Hui-Jin Kim<sup>1</sup>, Geun-Ha Oh<sup>2</sup>, Young Min Song<sup>2</sup>, Soon-Kyeong Park<sup>1</sup>, and Il-Kwon Oh<sup>1,2</sup> <sup>1</sup>Department of Electrical and Computer Engineering, Ajou University, <sup>2</sup>Department of Intelligence Semiconductor Engineering, Ajou University</p>
TP1-452	<p><b>재구성 가능한 실리콘 트랜지스터 기반 NAND 게이트의 Logic-In-Memory 특성 연구</b></p> <p>고예연, 임두혁 경기대학교</p>
TP1-453	<p><b>원자층 증착법을 활용한 HfAlO 및 TiN 기반의 MFM Capacitor 특성 연구</b></p> <p>심유하, 박종문, 임두혁 경기대학교</p>

TP1-454	<p><b>실리콘 PIM 소자 기반 Inverter의 전기적 특성 연구</b></p> <p>김다운, 임두혁 경기대학교 전자공학부</p>
TP1-455	<p><b>재구성 가능한 실리콘 트랜지스터 기반 NOR 게이트의 로직-메모리 특성 연구</b></p> <p>김선혁, 임두혁 경기대학교</p>
TP1-456	<p><b>Atomic Layer Deposition of Titanium Dioxides Thin Films Using New-Ti Precursor on Different Substrates</b></p> <p>Juan Hong<sup>1</sup>, Taehyun Kim<sup>2</sup>, and Woongkyu Lee<sup>1,2</sup> <sup>1</sup>Department of Materials Science and Engineering, Soongsil University, <sup>2</sup>Department of Green Chemistry and Materials Engineering, Soongsil University</p>
TP1-457	<p><b>Surface Planarization Issues in Multi-layered RDL Interposer Fabrication</b></p> <p>Jinho Jang<sup>1</sup>, Minji Kang<sup>1</sup>, Injoo Kim<sup>2</sup>, and Sungdong Kim<sup>1</sup> <sup>1</sup>Department of Mechanical System Design Engineering, Seoul National University of Science and Technology, <sup>2</sup>Department of Mechanical Design and Robot Engineering, Seoul National University of Science and Technology</p>
TP1-458	<p><b>Optimizing Cu-Cu Bonds in Hybrid Bonding through O<sub>2</sub> Plasma and Wet Processes</b></p> <p>Wookyung Lee<sup>1</sup>, Siye Lee<sup>1</sup>, Injoo Kim<sup>2</sup>, and Sungdong Kim<sup>1</sup> <sup>1</sup>Department of Mechanical System Design Engineering, Seoul National University of Science and Technology, <sup>2</sup>Department of Mechanical Design and Robot Engineering, Seoul National University of Science and Technology</p>
TP1-459	<p><b>Temperature Effects on Cu-Cu Bonding for Hybrid Bonding</b></p> <p>Siye Lee<sup>1</sup>, Wookyung Lee<sup>1</sup>, Injoo Kim<sup>2</sup>, and Sungdong Kim<sup>1</sup> <sup>1</sup>Department of Mechanical System Design Engineering, Seoul National University of Science and Technology, <sup>2</sup>Department of Mechanical Design and Robot Engineering, Seoul National University of Science and Technology</p>
TP1-460	<p><b>A 4.5-GHz Duty Cycle Corrector with a 15%-85% Input Duty Range for DRAM Applications</b></p> <p>류희철, 이원영 서울과학기술대학교 스마트ICT융합공학과</p>
TP1-461	<p><b>Advancing Solvent Orthogonality via Refined Solution Phase Ligand Exchange Techniques for Colloidal Quantum Dot Photodetectors</b></p> <p>Hong Gu Kang<sup>1</sup>, Ju Young Woo<sup>2</sup>, and Seong-Yong Cho<sup>3</sup> <sup>1</sup>Department of Materials Science and Engineering, Myongji University, <sup>2</sup>Department of Digital Transformation R&amp;D, KITECH, <sup>3</sup>Department of Photonics and Nanoelectronics, Hanyang University</p>
TP1-462	<p><b>Impact of Dielectric Wall Variations of Forksheet FET</b></p> <p>Jin ho Park and Hyunwoo Kim Department of Electrical and Electronics Engineering, Konkuk University</p>
TP1-463	<p><b>A Novel TFT-Based Active Pixel Sensor Enabling High Gain and Readout Speed</b></p> <p>Minju Kim, Junghun Kim, Myeonghyun Jeon, and Jiwon Lee Department of Photonics and Nanoelectronics, Hanyang University</p>
TP1-464	<p><b>Adaptive CMOS RF-DC Converter for RF Energy Harvesting</b></p> <p>Ye-Won Kim and Ickjin Kwon Department of Electrical and Computer Engineering, Ajou University</p>
TP1-465	<p><b>Ti silicide를 이용한 Cross Bridge Kelvin Resistor의 측정 오차 최적화</b></p> <p>Chang Min Chae, Hyung Ju Noh, and Sangwan Kim Department of Electrical Engineering, Sogang University</p>

TP1-466	<p><b>DAC 선동작을 통해 채널 동작시간을 증가시킨 OLED 소스 드라이버 IC</b></p> <p>Won-Jo Lee, Yu-Guan Kim, Min-Woo Kim, Yun-Su Kim, and Byung-do Yang Department of Electronics Engineering, Chungbuk National University</p>
TP1-467	<p><b>실리콘 기판 위 구현된 NIR 대역 양자점 포토다이오드</b></p> <p>Doheon Lee, Junghun Kim, Hyeonsoo Ahn, and Jiwon Lee Department of Photonics and Nanoelectronics, Hanyang University</p>
TP1-468	<p><b>Automatic Display Defect Detection System Using Image Processing</b></p> <p>Min-Rak Son, Ji-Soo Sin, Min-Jin Kim, and Won Il Lee Kumoh National Institute of Technology</p>
TP1-469	<p><b>Analysis of Single-Event Transient in Nanosheet Gate-All-Around Structured Tunneling-Based Ternary CMOS</b></p> <p>Hyeong Chan Son and Hyunwoo Kim Department of Electrical and Electronics Engineering, Konkuk University</p>
TP1-470	<p><b>고성능 듀얼 게이트 HfO<sub>2</sub>/MoS<sub>2</sub>/SiO<sub>2</sub> FET의 특성 연구</b></p> <p>Jun Woo Kim, Young Jun Rho, Dong Yeong Kim, and Sang Hyun Lee School of Chemical Engineering, Chonnam National University</p>
TP1-471	<p><b>Lateral Growth of Single Crystalline Cu for Low Resistance Trench of BEOL</b></p> <p>Giho Jeong<sup>1</sup> and Jae Yong Song<sup>2</sup> <sup>1</sup>Department of Materials Science and Engineering, Hanyang University, <sup>2</sup>Department of Semiconductor Engineering, POSTECH</p>
TP1-472	<p><b>Design of UART Module and Digital Controlled Current Mirror in TSMC 28 nm Process</b></p> <p>Yong Woo Kim<sup>1</sup>, Jung Nam Kim<sup>1</sup>, Minsuk Koo<sup>2</sup>, and Yoon Kim<sup>1</sup> <sup>1</sup>Department of Electrical and Computer Engineering, University of Seoul, <sup>2</sup>Department of Computer Science and Engineering, Incheon National University</p>
TP1-473	<p><b>A Study on the Characteristics of the TFT by Optimizing the Sputtered InWZnO Thin Film</b></p> <p>Tae Gun Kim, Yu Jin Yang, Seung Hyeok Lee, and Se Rim Lee Technology University of Korea</p>
TP1-474	<p><b>Optimization of Channel Layer Thickness for Improved Performance in Hetero-Structure AOS FETs</b></p> <p>Jung Wan Noh<sup>1,2</sup>, Tae Hyun Noh<sup>1,2</sup>, and Younghyun Kim<sup>1,2</sup> <sup>1</sup>Department of Photonics and Nanoelectronics, Hanyang University, <sup>2</sup>BK21 FOUR ERICA-ACE Center, Hanyang University</p>
TP1-475	<p><b>Enhancing Charge Trap Memory with Oxygen-Deficient HfO<sub>x</sub> Charge Trap Layer for Non-Volatile Memory</b></p> <p>Hyunji Jeong<sup>1,2</sup>, Seoungmin Park<sup>1,2</sup>, and Younghyun Kim<sup>1,2</sup> <sup>1</sup>Department of Photonics and Nanoelectronics, Hanyang University, <sup>2</sup>BK21 FOUR ERICA-ACE Center, Hanyang University</p>
TP1-476	<p><b>JEP183 Measurement TCAD Simulation in Planar 1.2kV 4H-SiC Power MOSFETs</b></p> <p>Oh Seong Eun, Kim Beom Jin, Yoo Dahui, and Ho-Jun Lee Department of Electrical Engineering, Pusan National University</p>
TP1-477	<p><b>Comparing Results of JEP183 Measurement in Planar and Trench 1.2kV 4H-SiC Power MOSFETs</b></p> <p>Kim Beom Jin, Kang Min Jae, Jeong Dong Hun, YOO DAHUI, and Ho-Jun Lee Department of Electrical Engineering, Pusan National University</p>
TP1-479	<p><b>경량 블록암호 SIMECK과 EC-DH를 이용한 하드웨어 가속기 구조의 IoT 보안 시스템 구현</b></p> <p>이주형, 이송희, 신경욱 금오공과대학교 전자공학부 반도체시스템전공</p>

TP1-480	<p><b>Cu Grain Size에 따른 SAC305/Cu 접합부 금속간화합물 성장 거동 분석</b></p> <p>한다경, 노은채, 윤정원 충북대학교 신소재공학과</p>
TP1-481	<p><b>TLP Bonding Using Sn/Ni/Sn-foil Laminated Solder Preform</b></p> <p>Dong-Bok Lee, Yeong-Jin Seo, and Jeong-Won Yoon Department of Advanced Materials Engineering, Chungbuk National University</p>
TP1-482	<p><b>고선형성 가중치 프로그래밍이 가능한 IGZO 2T Synaptic Device</b></p> <p>고찬영<sup>1</sup>, 성수원<sup>1</sup>, 박성민<sup>1</sup>, 하태준<sup>1</sup>, 조현영<sup>1</sup>, 정윤영<sup>1,2,3</sup> <sup>1</sup>Department of Electrical Engineering, POSTECH, <sup>2</sup>Department of Semiconductor Engineering, POSTECH, <sup>3</sup>CSTC, POSTECH</p>
TP1-483	<p><b>Sn-2.3Ag Flip-chip Solder Bump의 고온 장기 신뢰성 평가</b></p> <p><b>A Study of Long-term Temperature Reliability of Sn-2.3Ag Flip-Chip Solder Bump</b></p> <p>장은수, 윤정원 충북대학교 신소재공학과</p>
TP1-484	<p><b>등온 시효 처리에 따른 리플로우 및 레이저 솔더링 접합부 특성 비교 연구</b></p> <p>Hyo-Won Lee, Eun-Chae Noh, Da-Gyeong Han, and Jeong-Won Yoon Department of Advanced Materials Engineering, Chungbuk National University</p>
TP1-485	<p><b>Keyword Spotting 성능 향상을 위한 CPU-NPU 하이브리드 프로세서 설계</b></p> <p>Yoono Kim, Jiwoong Chio, Gisan Ji, and Sungju Ryu Department of Electronic Engineering, Sogang University</p>
TP1-486	<p><b>Designing a Hybrid RISC-V CPU and NPU System for Image Classification Optimization</b></p> <p>Minse Kim, Junhee Lee, Gisan Ji, and Sungju Ryu Department of Electronic Engineering, Sogang University</p>
TP1-487	<p><b>A Random Number Generator based on Stochastic Ferroelectric Tunnel Junction</b></p> <p>Dong-Jun Kim<sup>1</sup>, Seo-Eun Jang<sup>1</sup>, Sungjun Kim<sup>2</sup>, and Min-Hwi Kim<sup>1</sup> <sup>1</sup>Chung-Ang University, <sup>2</sup>Dongguk University</p>
TP1-488	<p><b>A Simulation of Electrical Properties in the Induced Systems</b></p> <p>Se Hun Kim<sup>1</sup>, Jik Hyeon Ham<sup>1</sup>, and Seock-Kyun Son<sup>1,2</sup> <sup>1</sup>Department of Physics, Kyung Hee University, <sup>2</sup>Department of Information Display, Kyung Hee University</p>
TP1-489	<p><b>VVV 특화 RISC-V 프로세서 기반 CPU-NPU 하이브리드 프로세서 설계</b></p> <p>Jaeseok Lee, Jeonghwan Ahn, Gisan Ji, and Sungju Ryu Department of Electronic Engineering, Sogang University</p>
TP1-490	<p><b>Improving the Current Density of IGZO TFT by Corrugated Substrate</b></p> <p>Ye Won Jeong<sup>1</sup>, Jeong Ha Yoon<sup>1</sup>, Taewon Seo<sup>1</sup>, and Yoonyoung Chung<sup>1,2,3</sup> <sup>1</sup>Department of Electrical Engineering, POSTECH, <sup>2</sup>Department of Semiconductor Engineering, POSTECH, <sup>3</sup>Center for Semiconductor Technology Convergence, POSTECH</p>
TP1-491	<p><b>Highly-stable a-IGZO TFT under PBS Condition by Passivation with Hydrogen Plasma Treatment</b></p> <p>Jeongha Yoon<sup>1</sup>, Yewon Jeong<sup>1</sup>, Taewon Seo<sup>1</sup>, and Yoonyoung Chung<sup>1,2,3</sup> <sup>1</sup>Department of Electrical Engineering, POSTECH, <sup>2</sup>Department of Semiconductor Engineering, POSTECH, <sup>3</sup>Center for Semiconductor Technology Convergence, POSTECH</p>
TP1-492	<p><b>BaZrO<sub>3</sub>/MgO Templated Epitaxy Enables Three Orders of Magnitude Conductivity Increase in Ba<sub>0.95</sub>La<sub>0.05</sub>SnO<sub>3</sub> Films on Al<sub>2</sub>O<sub>3</sub> Substrates, Promoting Very High Transparency and X-band Electromagnetic Shielding</b></p> <p>Youngkyoung Ha<sup>1</sup>, Jingyeong Jeon<sup>1</sup>, Subhin Hwang<sup>1</sup>, Judith L. MacManus-Driscoll<sup>2</sup>, and Shinbuhm Lee<sup>1</sup> <sup>1</sup>DGIST, <sup>2</sup>University of Cambridge</p>

TP1-493	<p><b>Random Resistance of Graphene according to Self-Assembled Monolayers and Application of Physically Unclonable Functions</b></p> <p>Eun Bee Ko<sup>2</sup>, Su Bin Lee<sup>1</sup>, Si Heon Lim<sup>2</sup>, Min Seo Kim<sup>1</sup>, Byung Cheol Jang<sup>3</sup>, Ho Cheon Yoo<sup>1</sup>, and Hyun Ho Kim<sup>2</sup></p> <p><sup>1</sup>Department of Electronic Engineering, Gachon University, <sup>2</sup>Department of Energy Engineering Convergence, Kumoh National Institute of Technology, <sup>3</sup>School of Electronics and Electrical Engineering, Kyungpook University</p>
TP1-494	<p><b>하프늄 기반 산화물을 활용한 실리콘 나노선 메모리 소자에 대한 특성 연구</b></p> <p>박종문, 임두혁</p> <p>경기대학교</p>
TP1-495	<p><b>Stacked Structure Infrared Photodetector Utilizing Colloidal Quantum Dots</b></p> <p>Ji Hyeon Woo and Seong-Yong Cho</p> <p>Department of Photonics and Nanoelectronics, Hanyang University ERICA</p>
TP1-496	<p><b>메모리 효율성 향상을 위한 DNN 경량화 기술연구</b></p> <p>Hoyong Jeong, Jaeseok Moon, Jinsung Lee, Jaeseong Byun, Sehyun Hwang, Dongseok Oh, Jincheol Yang, and Sukju Kang</p> <p>Department of Electrical Engineering, Sogang University</p>
TP1-497	<p><b>Understanding Process Instability Triggered by Built-in Dipole Moments in Janus MoSSe</b></p> <p>Seon Yeon Choi<sup>1</sup>, Sun Woo Kim<sup>1,2</sup>, Si Heon Lim<sup>1,2</sup>, Eun Bee Ko<sup>1</sup>, Seunghyun Kim<sup>3</sup>, Yun Chang Park<sup>4</sup>, Sunghun Lee<sup>5</sup>, and Hyun Ho Kim<sup>1,2</sup></p> <p><sup>1</sup>School of Materials Science and Engineering, Kumoh National Institute of Technology, <sup>2</sup>Department of Energy Engineering Convergence, Kumoh National Institute of Technology, <sup>3</sup>Department of Chemical Engineering, POSTECH, <sup>4</sup>Department of Measurement and Analysis, NNFC, <sup>5</sup>Division of Nanotechnology, Convergence Research Institute, DGIST</p>
TP1-498	<p><b>Analysis of Hot Carrier Injection (HCI) and Fowler-Norheim (FN) Tunneling Mechanisms in Charge Trap Flash (CTF) Memory Device</b></p> <p>Youn Seok Kye, Jae Yeon Park, and Sangwan Kim</p> <p>Department of Electronic Engineering, Sogang University</p>
TP1-499	<p><b>DRAM Write Recovery Speed 연구</b></p> <p>Ji Won Son, Jeon Woong Kang, Seo Yoon Lee, and Sung-Woong Chung</p> <p>POSTECH</p>
TP1-500	<p><b>Analysis on Electrical Performance of Nanosheet FET with Asymmetric Inner Spacer Thickness</b></p> <p>Won Gi Hong and Hyunwoo Kim</p> <p>Department of Electrical and Electronics Engineering, Konkuk University</p>
TP1-501	<p><b>Solution-Processed Metal-Oxide Thin-Film Transistors Fabricated at Low Temperatures by Metal Ion Doping</b></p> <p>Eun-Ha Kim, Chae-Eun Kim, Ho-Jun Cha, Yeon-Eui Lee, Su-Been Kim, Se-Ryong Park, and Tae-Jun Ha</p> <p>Department of Electronic Materials Engineering, Kwangwoon University</p>
TP1-502	<p><b>An Overall Study of Raman Spectroscopy for Two-dimensional Materials</b></p> <p>Mubin Park<sup>1</sup>, Jyyoun Han<sup>1</sup>, and Seok-Kyun Son<sup>1,2</sup></p> <p><sup>1</sup>Department of Physics, Kyung Hee University, <sup>2</sup>Department of Information Display, Kyung Hee University</p>
TP1-503	<p><b>Voltage Dependence of Kink Effect in Floating Body PD-SOI MOSFETs</b></p> <p>Wongi Cho and Seonghearn Lee</p> <p>Department of Electronics Engineering, Hankuk University of Foreign Studies</p>

TP1-504	<p><b>Incandescent of Graphene and High Electrical Characteristics on Ge Wafer by CVD Method</b>  Gyu-Seock Ko<sup>1</sup>, Do-Hoon Kim<sup>1</sup>, Hyeon-Sik Jang<sup>2</sup>, and Seok-Kyun Son<sup>1,3</sup>  <sup>1</sup>Department of Physics, Kyung Hee University, <sup>2</sup>School of Semiconductor Science &amp; Technology, Jeonbuk National University, <sup>3</sup>Department of Information Display, Kyung Hee University</p>
TP1-505	<p><b>Transfer Methods of Monolayer Graphene</b>  Minjun Kang, Jiyong Park, and Yong-Sun Kim  Ajou University</p>
TP1-506	<p><b>High-Performance Resistive Random Access Memory based on Solution-Processed High-k Dielectrics</b>  Chae-Eun Kim, Eun-Ha Kim, Da-Bin Seo, Se-Ryong Park, and Tae-Jun Ha  Department of Electronic Materials Engineering, Kwangwoon University</p>
TP1-507	<p><b>Analyzing of Self-heating Effect of a-ITZO Thin Film Transistor by Using Thremoreflectance Microscopy for Better Heat Dissipation in Channel Thickness</b>  Yongjin Shin, Taewon Jin, Sanghoon Shin and Younghyun Kim  Department of Photonics and Nanoelectronics, BK21 FOUR ERICA-ACE Center, Hanyang University</p>
TP1-508	<p><b>Wearable ECG and GSR Acquisition System with Motion Artifacts Robustness</b>  Seokhan Jeong, Jiho Kim, Minho Sung, Jeongmin Cha, Taeryoung Seol, and Junghyup Lee  DGIST</p>
TP1-509	<p><b>Enhancing Nonlinearity of LTP/LTD in HfO<sub>2</sub>-Based Synaptic Devices for Spiking Neural Networks</b>  Jong Min Baek<sup>1</sup>, Jung Hyeon Gong<sup>1</sup>, Chae Min Yeom<sup>1</sup>, Hyeon Seung Lee<sup>1</sup>, Hyuk Min Kwon<sup>2</sup>, and Hi Deok Lee<sup>1</sup>  <sup>1</sup>Chungnam National University, <sup>2</sup>Semiconductor Convergence Campus, Korea Polytechnics College</p>
TP1-510	<p><b>Attention in Attention-Based One-Encoder-Two-Decoder Network for Image Deblurring</b>  Ji-Soo Sin and Ho Sub Lee  Kumoh National Institute of Technology</p>
TP1-511	<p><b>Multi-Kernel Strip Pooling-Based Attention Network for Super Resolution</b>  Jong Youn Lee, Gwang Nam An, Do Hyeon Seo, Chan Mee Kim, and Ho Sub Lee  Kumoh National Institute of Technology</p>
TP1-512	<p><b>Study on the Methods to Improve Switching Variability and Reliability in Self-rectifying Resistive Switching Memory</b>  Yura Oh, Sua Han, and Hae Jin Kim  Department of Materials Science and Engineering, Myongji University</p>
TP1-513	<p><b>CNN-LSTM 모델 기반 반도체 제조 공정 이상 탐지 방안</b>  Sejin Park<sup>1</sup> and Hye-Jung Yoon<sup>2</sup>  <sup>1</sup>University of Seoul, <sup>2</sup>Seoul National University</p>
TP1-514	<p><b>Optimizing MoS<sub>2</sub> Properties through Substrate-Heated Sputter Deposition: Exploring Crystallinity and Deposition Characteristics</b>  Ha Yeon Choi<sup>1</sup>, Tae Gyu Ryu<sup>1</sup>, Hye Seong Park<sup>1</sup>, Hyuk Min Kwon<sup>2</sup>, and Hi Deok Lee<sup>1</sup>  <sup>1</sup>Chungnam National University, <sup>2</sup>Semiconductor Convergence Campus of Korea Polytechnics College</p>
TP1-515	<p><b>2차 고조파 측정법을 이용한 강자성체 소자의 스핀 토크 측정</b>  피진주, 김종도, 김하늘, 임은지, 김상훈  울산대학교 물리학과</p>
TP1-516	<p><b>Hash Table을 활용한 Adaptive Learning-Based FTL</b>  Myung hoon Hyun  Sungkyunkwan University</p>

TP1-517	<p><b>동적 비전 센서의 Verilog 디지털회로설계 및 시뮬레이션</b></p> <p>김성주</p> <p>성균관대학교 반도체시스템공학과</p>
TP1-518	<p><b>Improving the Reliability Characteristics Using Doping Layer between WLs in 3D NAND Flash Memory</b></p> <p>Hyewon Kyung<sup>1,2</sup>, Jungil Bae<sup>1,2</sup>, Donghoon Lee<sup>1,2</sup>, Kijun Lim<sup>1,2</sup>, Yunejae Suh<sup>1,3</sup>, Sanghyuk Lee<sup>1,3</sup>, and Daewoong Kang<sup>1</sup></p> <p><sup>1</sup>Next Generation Semiconductor Convergence and Open Sharing System, <sup>2</sup>Chung-Ang University, <sup>3</sup>Soongsil University</p>
TP1-519	<p><b>Analysis of Cell Characteristics Depending on Vertical Channel Structure in 3D NAND Flash</b></p> <p>Donghoon Lee<sup>1,2</sup>, Hyewon Kyung<sup>1,2</sup>, Jungil Bae<sup>1,2</sup>, Yunjae Seo<sup>1,3</sup>, Sanghyuk Lee<sup>1,4</sup>, Kijun Lim<sup>1,2</sup>, and Daewoong Kang<sup>1</sup></p> <p><sup>1</sup>Next Generation Semiconductor Convergence and Open Sharing System, Seoul National University, <sup>2</sup>School of Electrical and Electronics Engineering, Chung-ang University, <sup>3</sup>Department of Electronic Engineering, Soongsil University, <sup>4</sup>Department of Materials Science and Engineering, Soongsil University</p>
TP1-520	<p><b>A New Concept to Improve the Retention Characteristics in 3D NAND Flash</b></p> <p>Yunejae Suh<sup>1,2</sup>, Sanghyuk Lee<sup>1,3</sup>, Hyewon Kyung<sup>1,4</sup>, Jungil Bae<sup>1,4</sup>, Donghoon Lee<sup>1,4</sup>, Kijun Lim<sup>1,4</sup>, and Daewoong Kang<sup>1</sup></p> <p><sup>1</sup>Next Generation Semiconductor Convergence and Open Sharing System, <sup>2</sup>Department of Electronic Engineering, Soongsil University, <sup>3</sup>Department of Materials Science and Engineering, Soongsil University, <sup>4</sup>School of Electrical and Electronics Engineering, Chung-ang University</p>
TP1-521	<p><b>New Process to Fabricate the CT(Charge Trap)-Cut in 3D NAND Flash to Improve Reliability</b></p> <p>Kijun Lim<sup>1,2</sup>, Hyewon Kyung<sup>1,2</sup>, Jungil Bae<sup>1,2</sup>, Yunjae Suh<sup>1,3</sup>, Donghoon Lee<sup>1,2</sup>, Sanghyuk Lee<sup>1,3</sup>, and Daewoong Kang<sup>1</sup></p> <p><sup>1</sup>Next Generation Semiconductor Convergence and Open Sharing System, <sup>2</sup>School of Electrical and Electronics Engineering, Chung-ang University, <sup>3</sup>Department of Electronic Engineering, Soongsil University, <sup>4</sup>Department of Materials Science and Engineering, Soongsil University</p>
TP1-522	<p><b>Analysis of Trap Effect in Back Oxide to Control the Cell Current in 3D NAND Flash</b></p> <p>Sanghyuk Lee<sup>1,2</sup>, Yunejae Suh<sup>1,3</sup>, Hyewon Kyung<sup>1,4</sup>, Jungil Bae<sup>1,4</sup>, Donghoon Lee<sup>1,4</sup>, Kijun Lim<sup>1,4</sup>, and Daewoong Kang<sup>1</sup></p> <p><sup>1</sup>Next Generation Semiconductor Convergence and Open Sharing System, <sup>2</sup>Department of Materials Science and Engineering, Soongsil University, <sup>3</sup>Department of Electronic Engineering, Soongsil University, <sup>4</sup>School of Electrical and Electronics Engineering, Chung-ang University</p>
TP1-523	<p><b>A New Approach to Improve Cell Characteristics of 3D NAND Flash Using Indium-gallium-zinc-oxide Channels.</b></p> <p>Jungil Bae<sup>1,2</sup>, Hyewon Kyung<sup>1,2</sup>, Donghun Lee<sup>1,2</sup>, Kijun Lim<sup>1,2</sup>, Yunejae Suh<sup>1,3</sup>, Sanghyuk Lee<sup>1,4</sup>, and Daewoong Kang<sup>1</sup></p> <p><sup>1</sup>Next Generation Semiconductor Convergence and Open Sharing System, <sup>2</sup>Department of Electrical and Electronics Engineering, Chung-Ang University, <sup>3</sup>Department of Electronic Engineering, Soongsil University, <sup>4</sup>Department of Materials Science and Engineering, Soongsil University</p>



2024년 1월 26일(금) 09:00-17:25

저자 Q&amp;A 세션: 10:45-11:25

## A. Interconnect &amp; Package 분과

ZONE 4 (3층 로비)

FP1-001	<p><b>Optimization of O<sub>2</sub> Plasma Treatment on Cu Surface for Hybrid Cu Bonding</b></p> <p>Sangwoo Park<sup>1</sup>, Sangmin Lee<sup>1</sup>, Junyoung Choi<sup>2</sup>, and Sarah Eunkyung Kim<sup>1</sup></p> <p><sup>1</sup>Department of Semiconductor Engineering, Seoul National University of Science and Technology, <sup>2</sup>Department of Electrical and Information Engineering, Seoul National University of Science and Technology</p>
FP1-002	<p><b>Potential Use of Fly Cutting Method for Cu/Polymer Planarization in Hybrid Bonding</b></p> <p>Sangmin Lee<sup>1</sup>, Suin Jang<sup>2</sup>, Sangwoo Park<sup>1</sup>, and Sarah Eunkyung Kim<sup>1</sup></p> <p><sup>1</sup>Department of Semiconductor Engineering, Seoul National University of Science and Technology, <sup>2</sup>Research Center for Advanced Semiconductor Packaging, Seoul National University of Science and Technology</p>
FP1-003	<p><b>Evaluation of PVD SiCN for Cu/SiCN Hybrid Bonding</b></p> <p>Junyoung Choi<sup>1</sup>, Sangwoo Park<sup>2</sup>, Sangmin Lee<sup>2</sup>, and Sarah Eunkyung Kim<sup>2</sup></p> <p><sup>1</sup>Department of Electrical and Information Engineering, Seoul National University of Science and Technology, <sup>2</sup>Department of Semiconductor Engineering, Seoul National University of Science and Technology</p>
FP1-004	<p><b>A Study of Surface Treatment on SiO<sub>2</sub>/SiO<sub>2</sub> Bonding for Cu/SiO<sub>2</sub> Hybrid Wafer Bonding</b></p> <p>Joong-Heon Kim<sup>1</sup>, Sung-Min Park<sup>1</sup>, Sang Hyun Jung<sup>1</sup>, and Kyung-Ho Park<sup>2</sup></p> <p><sup>1</sup>System IC Platform Lab, <sup>2</sup>Advanced Packaging TF, KANC</p>
FP1-005	<p><b>Reliability Investigations of Polymer-Based Redistribution Layers (RDL) by Oxygen and Moisture</b></p> <p>Ji-Youn Kwak<sup>1</sup>, Emmanuel Chery<sup>2</sup>, Julien Bertheau<sup>2</sup>, John Slabbekoorn<sup>2</sup>, Joke De Messemaeker<sup>2</sup>, Eric Beyne<sup>2</sup>, and Ju-Young Kim<sup>1</sup></p> <p><sup>1</sup>UNIST, <sup>2</sup>imec</p>
FP1-006	<p><b>ALD ZnO 확산방지층이 Cu와 Ru 배선의 계면접착에너지에 미치는 영향</b></p> <p>정대윤<sup>1,2</sup>, 김가희<sup>1,2</sup>, 김민진<sup>1,2</sup>, 손예슬<sup>3</sup>, Yuki Mori<sup>3,4</sup>, 김수현<sup>3,5</sup>, 박영배<sup>1,2</sup></p> <p><sup>1</sup>안동대학교 신소재공학부, <sup>2</sup>안동대학교 청정에너지 소재기술연구센터, <sup>3</sup>울산과학기술원 반도체 소재부품 대학원, <sup>4</sup>Chemical Materials Development Department, TANAKA Precious Metals, <sup>5</sup>울산과학기술원 신소재공학과</p>
FP1-007	<p><b>Low-temperature Hybrid Bonding for Enhanced Semiconductor Integration and Reliability</b></p> <p>Youngju Sim, Gyeong-Seok Hwang, and Ju-Young Kim</p> <p>UNIST</p>
FP1-008	<p><b>The Study of the Erosion and Dishing Shape in the Cu CMP Process for 3D Hybrid Bonding</b></p> <p>Sang-Soo Kim, Su-Jeong Kang, Won-Youl Shin, Ju-Young An, Min-Jae Kim, Sungmin Park, Dongkeun Lee, and Kyung-Ho Park</p> <p>Advanced Packaging TF, KANC</p>
FP1-009	<p><b>저온 구리 접합 성능 향상을 위한 금속 패시베이션 결정성에 관한 연구</b></p> <p>Min Seong Jeong, Sang Woo Park, Yeon Ju Kim, Ji Hoon Kim, and Jong Kyung Park</p> <p>Seoul National University of Science and Technology</p>
FP1-010	<p><b>대기압 플라즈마 표면 처리 활성화를 이용한 웨이퍼 본딩 기술</b></p> <p>Wonyoung Choi, Bumki Moon, Kyeongbin Lim, Yongjoo Lee, Yongin Lee, Seung ho Han, Nungpyo Hong, and Minwoo Rhee</p> <p>Mechatronics Research, Samsung Electronics Co., Ltd.</p>

FP1-011	<p><b>Low Temperature Cu/Polymer Hybrid Bonding for 3D Multi-chip Stacking Process</b></p> <p>Ji-Hun-Kim, Yeon-Ju Kim, Min-Seong Jung, Sang-Woo Park, and Jong Kyung Park Department of Semiconductor Engineering, Seoul National University of Science and Technology</p>
FP1-012	<p><b>AI 및 수치해석 시뮬레이션을 활용한 반도체 패키지 열 기계적 유효 물성 모델링 방법 설계</b></p> <p>Jeong-Hyeon Park<sup>1</sup>, Sukwon Jang<sup>2</sup>, Sunggu Kang<sup>2</sup>, Sungho Mun<sup>2</sup>, Jaechoon Kim<sup>2</sup>, and Eun-Ho Lee<sup>1</sup> <sup>1</sup>Sungkyunkwan University, <sup>2</sup>Samsung Electronics Co., Ltd.</p>
FP1-013	<p><b>Reflow Temp Profile 제어를 통한 Sn Micro-bump Ball Shape 개선 연구</b></p> <p>Beomwoo Lee SK hynix</p>
FP1-014	<p><b>Analysis of Fermi Level Pinning of Metal-InGaZnO Junction with Interfacial Self-assembled Monolayer</b></p> <p>Sungbin Lim<sup>1</sup>, Dong-Gyun Mah<sup>2</sup>, Won-Ju Cho<sup>2</sup>, and Hamin Park<sup>1</sup> <sup>1</sup>Department of Electronic Engineering, Kwangwoon University, <sup>2</sup>Department of Electronic Materials Engineering, Kwangwoon University</p>
FP1-015	<p><b>A Study of Signal Integrity in Hybrid Bonding with Void</b></p> <p>Chan-Woong Park<sup>1,2</sup> and Kee-Won Kwon<sup>1,2</sup> <sup>1</sup>Department of Electrical and Computer Engineering, Sungkyunkwan University, <sup>2</sup>Department of Semiconductor Convergence Engineering, Sungkyunkwan University</p>
FP1-016	<p><b>The Study of the Effects of Cu-density and Pad Size in the CMP Process for 3D Hybrid Boding</b></p> <p>Su-Jeong Kang, Sang-Soo Kim, Won-Youl Shin, Min-Jae Kim, Sungmin Park, Dongkeun Lee, and Kyung-Ho Park Advanced Packaging TF, KANC</p>
FP1-017	<p><b>Effect of Adhesion on Compression Fatigue Reliability of Cu Interconnect.</b></p> <p>Jun Hyeok Hyun, Min Ju Kim, Jeong A Heo, and So-Yeon Lee Department of Materials Science and Engineering, Kumoh National Institute of Technology</p>
FP1-018	<p><b>Effects of Plasma Power on Properties of SiCOH Low Dielectric Constant Films in Plasma Enhanced Chemical Vapor Deposition Process Using the Tris(trimethylsiloxy)silane Precursor</b></p> <p>Namwuk Baek<sup>1</sup>, Chanyong Seo<sup>1</sup>, Jihwan Cha<sup>1</sup>, Hyewon Han<sup>1,2</sup>, Kyubeom Bae<sup>1</sup>, Jeongbeom Choi<sup>1</sup>, Jaeyeon Kim<sup>1</sup>, and Donggeun Jung<sup>1</sup> <sup>1</sup>Department of Physics, Sungkyunkwan University, <sup>2</sup>Research Laboratory, L&amp;P Lab Co., Ltd.</p>
FP1-019	<p><b>Microwave-Reduced Graphene Oxide with Doping towards VLSI Interconnect</b></p> <p>Jaegyung Kim, Cheol-Hyeon Yoon, and Byoung Don Kong Department of Electrical Engineering, POSTECH</p>
FP1-020	<p><b>시간 및 첨가제에 따른 Through-hole via Fill 거동 연구</b></p> <p>Eun-Bi Lee<sup>1</sup>, So-Yeon Lee<sup>1</sup>, Kyung-A Won<sup>2</sup>, and Seung-Yong Lee<sup>2</sup> <sup>1</sup>Kumoh National Institute of Technology, <sup>2</sup>LG Innotek</p>
FP1-021	<p><b>3D Printing of Through-Hole-Embedded Organic Interposer Substrates</b></p> <p>Guk Cho<sup>1</sup>, Haksoon Jung<sup>1,2</sup>, Yechan Han<sup>1</sup>, Seongmin Eum<sup>1</sup>, and Jimin Kwon<sup>1</sup> <sup>1</sup>Department of Electrical Engineering, UNIST, <sup>2</sup>Department of Chemical Engineering, POSTECH</p>
FP1-022	<p><b>Etch-Free Formation of Vertical Conductive Path in Silicon-Based Dielectrics for Enhanced Semiconductor Integration and Reliability</b></p> <p>Soon Joo Yoon, Jin Tae Park, and Yoon Kyeung Lee Division of Advanced Materials Engineering, Jeonbuk National University</p>
FP1-023	<p><b>Area Shrinkage 에 따른 Fringing Cap의 BEOL 성능에 대한 영향성 분석</b></p> <p>Seon Gyo Jang, Jun Nyeong Lee, Hye Jun Jin, Jeong Hoon Ahn, and Jong Ho Lee Foundry Business, Samsung Electronics Co., Ltd.</p>

FP1-024	<b>Investigation of Size-Dependent Electrical Properties in Schottky Barrier Diodes</b> 설유진 <sup>1</sup> , 김현규 <sup>1</sup> , 황해철 <sup>1</sup> , 윤봉노 <sup>1</sup> , 남은서 <sup>1</sup> , 김정식 <sup>3</sup> , 김기현 <sup>1,2</sup> <sup>1</sup> 전북대학교 전자정보공학부, <sup>2</sup> 전북대학교 전자공학부, <sup>3</sup> 경상대학교 전기공학과
FP1-025	<b>Effects of ALD Al<sub>2</sub>O<sub>3</sub> Layer on Interfacial Reaction of Sn-3.0Ag-0.5Cu Solder Joints</b> Eun-Chae Noh and Jeong-Won Yoon Department of Advanced Materials Engineering, Chungbuk National University
FP1-026	<b>Bridge-contact Resistance Method to Precisely Evaluate the Electrical Contact Characteristics of Nano-scale Semiconductor Devices</b> Huiyun Jung, Jiyeong Yun, and Hongsik Park School of Electronic and Electrical Engineering, Kyungpook National University
FP1-027	<b>DAF-less Chip Bonding Package Process by Using Self-assembled Monolayer</b> 김원빈 <sup>1</sup> , 최성재 <sup>1</sup> , 이선기 <sup>1</sup> , 김병준 <sup>2</sup> , 주영창 <sup>1</sup> <sup>1</sup> 서울대학교 재료공학부, <sup>2</sup> 한국공학대학교 신소재공학과
FP1-028	<b>3차원 반도체 패키징 접합부의 기계적 신뢰성 평가</b> Youngju Sim, Ji-Youn Kwak, and Ju-Young Kim UNIST
FP1-029	<b>Effect of Bending Frequency on Cu Flexible Interconnect</b> 이선기 <sup>1</sup> , 현준혁 <sup>2</sup> , 이소연 <sup>2</sup> , 주영창 <sup>1</sup> <sup>1</sup> 서울대학교 재료공학부, <sup>2</sup> 금오공과대학교 신소재공학과
FP1-030	<b>Enhancing Heat Dissipation in Chiplet-Based AI Semiconductors: A Comprehensive Modeling Approach</b> Sam Yaw Anaman <sup>1</sup> , Min-Jun Cheon <sup>1</sup> , Jung-Won Lee <sup>2</sup> , Lewis Kang <sup>2</sup> , Jung Ho Kim <sup>3</sup> , Jae Yong Song <sup>4</sup> , Inhak Han <sup>5</sup> , and Hoon-Hwe Cho <sup>1</sup> <sup>1</sup> Hanbat National University, <sup>2</sup> Nepes, <sup>3</sup> Asciland, <sup>4</sup> POSTECH, <sup>5</sup> Baum
FP1-032	<b>WBG 및 UWBG 전력반도체 모듈의 열적 성능 확인을 위한 시뮬레이션</b> Guesuk Lee KETI

## B. Patterning (Lithography & Etch Technology) 분과

### ZONE 1 (1층 전시장)

FP1-033	<p><b>A Study on Silicon Oxide Etching with High Aspect Ratio Using the CCP-type MERIE Process</b></p> <p>Byeong-Hyeok Choi, Woong Sun Lim, Sung-Min Park, and Sang Hyun Jung</p> <p>KANC</p>
FP1-034	<p><b>Effects of Oxygen Plasma Treatment on the Structural and Electronic Properties of MoS<sub>2</sub> Grown by MOCVD</b></p> <p>Jiwon Heo and Taewan Kim</p> <p><sup>1</sup>Department of Electrical Engineering, Jeonbuk National University, <sup>2</sup>Smart Grid Research Center, Jeonbuk National University</p>
FP1-035	<p><b>Effect of Alkaline Earth Elements on the Plasma-Resistance Properties of the Li<sub>2</sub>O-Al<sub>2</sub>O<sub>3</sub>-SiO<sub>2</sub> Glasses for the Semiconductor Etch Process</b></p> <p>So Won Kim, Hwan Seok Lee, Deok Sung Jun, and Hee Chul Lee</p> <p>Tech University of Korea</p>
FP1-036	<p><b>Perfluoroalkyl Vinyl Ether의 분자구조에 따른 SiO<sub>2</sub> 식각 특성: PPVE와 PIPVE의 비교</b></p> <p>전동준<sup>1,2</sup>, 유상현<sup>1,2</sup>, 김창구<sup>1,2</sup></p> <p><sup>1</sup>Department of Chemical Engineering, Ajou University, <sup>2</sup>Department of Energy Systems Research, Ajou University</p>
FP1-037	<p><b>Selective Etch of Boron-Doped Silicon Hard Mask Using Chlorine-Based Reactive Ion Etching Process</b></p> <p>Sangbae Lee<sup>1</sup>, Heeju Ha<sup>1</sup>, Hojin Kang<sup>1</sup>, Hyeongwu Lee<sup>2</sup>, Minsung Jeon<sup>3</sup>, and Heeyeop Chae<sup>1,2,3</sup></p> <p><sup>1</sup>School of Chemical Engineering, Sungkyunkwan University, <sup>2</sup>Department of Nano Science and Technology, SKKU Advanced Institute of Nanotechnology (SAINT), Sungkyunkwan University, <sup>3</sup>Department of Semiconductor Convergence Engineering, Sungkyunkwan University</p>
FP1-038	<p><b>Fluoro-alcohol Plasma에서 방전 가스 Chemistry에 따른 SiO<sub>2</sub> 식각 특성 비교</b></p> <p>양현석<sup>1,2</sup>, 유상현<sup>1,2</sup>, 김창구<sup>1,2</sup></p> <p><sup>1</sup>Department of Chemical Engineering, Ajou University, <sup>2</sup>Department of Energy Systems Research, Ajou University</p>
FP1-039	<p><b>Solution Processed Bilayer Source/Drain Electrodes for High Performance and Stable Metal Oxide Thin-Film Transistors</b></p> <p>Sungyun Kim<sup>1</sup>, Sehwan Park<sup>1</sup>, Duhyoung Gong<sup>1</sup>, Bongjun Kim<sup>2</sup>, and Hanul Moon<sup>1,2</sup></p> <p><sup>1</sup>Department of Chemical Engineering (BK21 FOUR Graduate Program), <sup>2</sup>Department of Semiconductors, Dong-A University, <sup>3</sup>Department of Electronics Engineering, Sookmyung Women's University</p>
FP1-040	<p><b>EUV 마스크 용 Pt 기반 흡수 소재 식각 성능</b></p> <p>김연수<sup>1,2</sup>, 정동민<sup>1,2</sup>, 이승호<sup>1,2</sup>, 안진호<sup>1,2</sup></p> <p><sup>1</sup>한양대학교 신소재공학과, <sup>2</sup>EUV-IUCC</p>
FP1-041	<p><b>Fluorine 및 Chlorine계 플라즈마 적용 유기-무기 수직분자선 다층 분자막 EUV 포토레지스트의 건식 현상 성능 비교 평가</b></p> <p>석지후<sup>1,4</sup>, 정지우<sup>1,4</sup>, 지현석<sup>2</sup>, 이재혁<sup>2</sup>, 박인성<sup>3</sup>, 성명모<sup>2,4</sup>, 안진호<sup>1,4</sup></p> <p><sup>1</sup>한양대학교 신소재공학과, <sup>2</sup>한양대학교 화학과, <sup>3</sup>한양대학교 나노과학기술연구소, <sup>4</sup>EUV-IUCC</p>
FP1-042	<p><b>Focus 에 따른 마스크 특성 변화 완화가 가능한 High-NA EUV 노광 공정용 High-k Binary 마스크 연구</b></p> <p>이승호<sup>1,2</sup>, 정동민<sup>1,2</sup>, 김연수<sup>1,2</sup>, 안진호<sup>1,2</sup></p> <p><sup>1</sup>한양대학교 신소재공학과, <sup>2</sup>EUV-IUCC</p>
FP1-043	<p><b>라디칼 모듈을 이용한 Low GWP Precursor의 원자층 식각 공정</b></p> <p>Eun Chong Kang, Se Jun Son, Jong Hyeon Kim, Hojune Chang, and Kyong Nam Kim</p> <p>Daejeon University</p>

FP1-044	<p><b>C<sub>4</sub>H<sub>2</sub>F<sub>6</sub>가스를 이용한 플라즈마 식각공정 및 가스 재사용에 관한 연구</b></p> <p>Sejun Son, Eunchong Kang, Jinu Choi, Jeongwoon Bae, and Kyongnam Kim Daejeon University</p>
FP1-045	<p><b>A Study on Dry Etching Mechanism of TiN and HfO<sub>2</sub> Thin Films Ar/CF<sub>4</sub>/O<sub>2</sub>/H<sub>2</sub>-Based Plasma for High-k Capacitor Process</b></p> <p>Deok-Seong Jeon, So-Won Kim, Hong-Hee Jeon, and Hee Chul Lee Department of Advanced Materials Engineering, Tech University of Korea</p>
FP1-046	<p><b>Grain Size 및 조성비에 따른 EUV 펄리클의 기계적 특성 변화</b></p> <p>김원진<sup>1,2</sup>, 김하늘<sup>1,2</sup>, 강영우<sup>1,2</sup>, 김정연<sup>1,2</sup>, 박영욱<sup>1,2</sup>, 안진호<sup>1,2</sup> <sup>1</sup>한양대학교 신소재공학과, <sup>2</sup>EUV-IUCC</p>
FP1-047	<p><b>Theoretical Study of Structural Properties and Adhesion Improvement of P(VDF-HFP) Polymers by Using Molecular Dynamics Simulation.</b></p> <p>Seung Weon Jeong<sup>1</sup>, Sangheon Lee<sup>1</sup>, and Hyung Kyu Lim<sup>2</sup> <sup>1</sup>Department of Chemical Engineering and Materials Science, Ewha Womans University, <sup>2</sup>Department of Chemical Engineering, Kangwon National University</p>
FP1-048	<p><b>Nanometer-Scale Etching of Cobalt Thin Films Using High Density Plasma of Acetone/Ar</b></p> <p>Geum Bin Baek, Kyung Ho Oh, Seung Hyun Kim, and Chee Won Chung Department of Chemical Engineering, Inha University</p>
FP1-050	<p><b>Atomic Layer Etching of SnO<sub>2</sub></b></p> <p>Hyun Seo Park, Kyung Min Mo, and Ji Hye Kim ISAC Research</p>
FP1-051	<p><b>Isotropic Atomic Layer Etching of HfO<sub>2</sub> Using NF<sub>3</sub> Plasma and Metal Precursor</b></p> <p>Gyejun Cho, Yewon Kim, Jehwan Hong, Hye-Lee Kim, and Won-Jun Lee Department of Nanotechnology and Advanced Materials Engineering, Sejong University</p>
FP1-052	<p><b>플라즈마 표면 처리에 따른 유연성 기판의 AFM Force-distance 특성 연구</b></p> <p>Juhyeon Lee, Jhongwoong Park, and Jaewook Jeong School of Information and Communication Engineering, Chungbuk National University</p>
FP1-053	<p><b>Correlation between Mask Slope and Redeposition in Cu Dry Etching</b></p> <p>Yoon Jae Cho, Su Myung Ha, and Chee Won Chung Department of Chemical Engineering, Inha University</p>
FP1-054	<p><b>Ab Initio Study of Chelation on Amorphous CoCl<sub>2</sub> Films for Atomic Layer Etching</b></p> <p>Eugene Huh and Sangheon Lee Ewha Womans University</p>
FP1-055	<p><b>불소화 유기 단분자 극자외선 레지스트의 감도 향상 전략</b></p> <p>김가영<sup>1</sup>, 구예진<sup>1</sup>, 이진균<sup>1</sup>, 김지호<sup>2</sup>, 박병규<sup>2</sup>, 이상설<sup>2</sup>, 장유하<sup>3</sup>, 정병준<sup>3</sup>, 고차원<sup>4</sup>, 니시츠네히로<sup>4</sup>, 김현우<sup>4</sup> <sup>1</sup>Inha University, <sup>2</sup>Pohang Accelerator Laboratory, <sup>3</sup>University of Seoul, <sup>4</sup>Samsung Electronics Co., Ltd.</p>
FP1-056	<p><b>Antimony Organometallic Photoresists for EUV Lithography</b></p> <p>Sun Jin Lee<sup>1</sup>, Dong Kyun You<sup>2</sup>, Kang Mun Lee<sup>2</sup>, and Myung-Gil Kim<sup>1</sup> <sup>1</sup>School of Advanced Materials Science and Engineering, Sungkyunkwan University, <sup>2</sup>Department of Chemistry, Institute for Molecular Science and Fusion Technology, Kangwon National University</p>
FP1-057	<p><b>Development of Environmentally Friendly Semiconductor Patterning Technology Using Supercritical Carbon Dioxide</b></p> <p>Yejin Ku<sup>1</sup>, Gayoung Kim<sup>1</sup>, Jin-Kyun Lee<sup>1</sup>, Sangsul Lee<sup>2</sup>, Byung Jun Jung<sup>3</sup>, Chawon Koh<sup>4</sup>, Tsunehiro Nishi<sup>4</sup>, and Hyun-Woo Kim<sup>4</sup> <sup>1</sup>Inha University, <sup>2</sup>Pohang Accelerator Laboratory, <sup>3</sup>Korea University, <sup>4</sup>Samsung Electronics Co., Ltd.</p>

<p><b>FP1-058</b></p>	<p><b>The Theoretical Study of the Decomposition Mechanism of C<sub>2</sub>HF<sub>5</sub> and C<sub>4</sub>F<sub>8</sub>O.</b>  Mihyeon Cho and Sangheon Lee  Department of Chemical Engineering and Materials Science, Ewha Womans University</p>
<p><b>FP1-059</b></p>	<p><b>Calculation of Decomposition Properties of Fluoro-ketone as C<sub>3</sub>F<sub>6</sub>O</b>  Minji Kim and Sangheon Lee  Chemical Engineering and Materials Science, Ewha Womans University</p>
<p><b>FP1-060</b></p>	<p><b>Cryogenic Aspect Ratio Etching of SiO<sub>2</sub> Using CF<sub>4</sub>/H<sub>2</sub>/Ar Plasma in a Cryogenic Reactive Ion Etch System</b>  Hyeon Jo Kim, In Young Bang, Hee Tae Kwon, Jae Hyeon Kim, Seong Yong Lim, Seo Yeon Kim, Seong Hee Cho, Ji Hwan Kim, Woo Jae Kim, Gi Won Shin, and Gi-Chung Kwon  Department of Electrical and Biological Physics, Kwangwoon University</p>

## C. Material Growth & Characterization 분과

ZONE 4 (3층 로비)

FP1-061	<p><b>Ferroelectricity and Phase Pure Orthorhombic Formation in PLD-grown Hf<sub>0.5</sub>Zr<sub>0.5</sub>O<sub>2</sub> MoS<sub>2</sub> Negative Capacitance Field Effect Transistors</b></p> <p>Avis Wee Sin Hui<sup>1</sup>, Pavan Pujar<sup>2</sup>, Haewon Cho<sup>3</sup>, and Sunkook Kim<sup>1</sup></p> <p><sup>1</sup>Department of Advanced Materials Science and Engineering, Sungkyunkwan University, <sup>2</sup>Indian Institute of Technology (IIT-BHU) Varanasi, <sup>3</sup>Samsung Electronics Co., Ltd.</p>
FP1-062	<p><b>Polarization Control of Photocurrent in KNiF<sub>3</sub>/BaTiO<sub>3</sub> Composite Ceramics</b></p> <p>Gwangbo Sim, Chang Won Ahn, Gu cheol Ahn, Ill Won Kim, and Tae Heon Kim</p> <p>Department of Physics and Energy Harvest-Storage Research Center (EHSRC), University of Ulsan</p>
FP1-063	<p><b>Highly Crystalline Flexible Oxide Membranes for Energy Harvesting</b></p> <p>Jiwon Kim, Muhammad Sheeraz, Chang Won Ahn, Ill Won Kim, and Tae Heon Kim</p> <p>Department of Physics and Energy Harvest-Storage Research Center (EHSRC), University of Ulsan</p>
FP1-064	<p><b>Probing Physical Properties of ZnSnN<sub>2</sub> Grown on GaN/c-sapphire Template Using Reactive RF-sputtering</b></p> <p>Juchan Hwang<sup>1</sup>, Dohyun Kim<sup>1</sup>, Chu-Young Cho<sup>2</sup>, and Kwangwook Park<sup>1,3</sup></p> <p><sup>1</sup>Division of Advanced Materials Engineering, Jeonbuk National University, <sup>2</sup>Electronic Devices Lab, KANC, <sup>3</sup>Hydrogen and Fuel Cell Research Center, Jeonbuk National University</p>
FP1-065	<p><b>Highly Ordered Ti<sub>3</sub>C<sub>2</sub>T<sub>x</sub> MXene Film with Improved Mechanical Strength and Oxidation Resistance</b></p> <p>Colin Wing-Lok Cheng, Gang San Lee, and Sang Ouk Kim</p> <p>Department of Materials Science and Engineering, KAIST</p>
FP1-067	<p><b>Synthesis of Highly c-axis Oriented VSe<sub>2</sub> Thin Films on Si Substrates via a Hybrid Deposition Method</b></p> <p>Inhyeok Oh<sup>1</sup>, Jung-Woo Lee<sup>2</sup>, and Sanghan Lee<sup>1</sup></p> <p><sup>1</sup>GIST, <sup>2</sup>Hongik University</p>
FP1-068	<p><b>Laser-assisted Synthesis of Multidimensional Polymorphic MoS<sub>2</sub> Crystals</b></p> <p>Chanjin Kim<sup>1</sup>, Sunhwa Hong<sup>1</sup>, Seoungwoong Park<sup>2</sup>, and Byung Hee Hong<sup>1</sup></p> <p><sup>1</sup>Department of Chemistry, Seoul National University, <sup>2</sup>RIST</p>
FP1-069	<p><b>Enhanced Remnant Polarization in TMDs-capped Hf<sub>0.5</sub>Zr<sub>0.5</sub>O<sub>2</sub> Thin Films</b></p> <p>Soyeon Lee and Sanghan Lee</p> <p>GIST</p>
FP1-070	<p><b>Analysis of Ar/H<sub>2</sub>S Inductively Coupled Plasma Reaction Using Global Model for MoS<sub>2</sub> Synthesis</b></p> <p>Nayoon Kang<sup>1</sup>, Tae-Hyun Kim<sup>2</sup>, and Eun-Ho Lee<sup>1,2</sup></p> <p><sup>1</sup>Department of Mechanical Engineering, Sungkyunkwan University, <sup>2</sup>Department of Smart Fab. Technology, Sungkyunkwan University</p>
FP1-071	<p><b>Energy-efficient Memcapacitor based on BiFeO<sub>3</sub>: A Feasible In-memory Computing</b></p> <p>Jiwoong Yang and Sanghan Lee</p> <p>GIST</p>
FP1-072	<p><b>A Large-area Active-matrix Image Sensor based on Nanoporous MoS<sub>2</sub> Phototransistors with Enhanced Photoresponsivity and Uniformity</b></p> <p>Myat Thet Khine<sup>1</sup>, Heekyeong Park<sup>2</sup>, Anamika Sen<sup>1</sup>, and Sunkook Kim<sup>1</sup></p> <p><sup>1</sup>Sungkyunkwan University, <sup>2</sup>Samsung Electronics Co., Ltd.</p>
FP1-073	<p><b>Growth of HfSe<sub>2</sub> with in-situ BN Passivation for Improved Electrical Properties</b></p> <p>Jung Dae Lee and Sanghan Lee</p> <p>GIST</p>

<p><b>FP1-074</b></p>	<p><b>Exploring the Optical Defect Properties of Amorphous SiNx Using Spectroscopic Ellipsometry</b>  Hyun Don Kim<sup>1,2</sup>, Minseon Gu<sup>1</sup>, Xuan Au Nguyen<sup>3</sup>, Junghyeon Beak<sup>1,2</sup>, Hanyeol Ahn<sup>1</sup>, Tae Jung Kim<sup>3</sup>, Young Dong Kim<sup>3</sup>, Moonsup Han<sup>1</sup>, Young Jun Chang<sup>1,2,4</sup>, and E.J. Choi<sup>1</sup>  <sup>1</sup>Department of Physics, University of Seoul, <sup>2</sup>Department of Smart Cities, University of Seoul, <sup>3</sup>Department of Physics, Kyung Hee University, <sup>4</sup>Department of Intelligent Semiconductor, University of Seoul</p>
<p><b>FP1-075</b></p>	<p><b>P형 Tellurium FET의 저온 특성 분석</b>  김민재<sup>1,2</sup>, 이용수<sup>1,2</sup>, 김규현<sup>1,2</sup>, 김승모<sup>1,2</sup>, 이해원<sup>1,2</sup>, 전재현<sup>1,2</sup>, 황현준<sup>1,2</sup>, 이병훈<sup>1,2</sup>  <sup>1</sup>CSTC, POSTECH, <sup>2</sup>Department of Electrical Engineering, POSTECH</p>
<p><b>FP1-076</b></p>	<p><b>Highly Efficient Vertical Outgassing Channel Technique for Direct Wafer Bonding and III-V Membrane Regrowth</b>  Honghwi Park, Hosung Kim, Dong-Hun Lee, and Won Seok Han  Photonic/Wireless Devices Research Division, ETRI</p>
<p><b>FP1-077</b></p>	<p><b>Enhancing P-Type FET Performance in WSe<sub>2</sub> via Se-vacancy Healing and Oxygen Substitution</b>  HyeonHo Jeong, Haewon Cho, Younghyun Ju, and Sunkook Kim  Sungkyunkwan University</p>
<p><b>FP1-078</b></p>	<p><b>Engineering In-Gap States of Silicon Nitride (SiN<sub>x</sub>) for Charge Trap Flash Memory</b>  Hanyeol Ahn<sup>1</sup>, Minseon Gu<sup>1</sup>, Hyun Don Kim<sup>1,2</sup>, Kyu-Myung Lee<sup>3</sup>, Jinwoo Byun<sup>5</sup>, Gukhyon Yon<sup>5</sup>, Yongsup Park<sup>3</sup>, E.J. Choi<sup>1</sup>, Young Jun Chang<sup>1,2,4</sup>, and Moonsup Han<sup>1</sup>  <sup>1</sup>Department of Physics, University of Seoul, <sup>2</sup>Department of Smart Cities, University of Seoul, <sup>3</sup>Department of Physics, Kyung Hee University, <sup>4</sup>Department of Intelligent Semiconductor, University of Seoul, <sup>5</sup>Advanced Process Development Team, Semiconductor R&amp;D Center, Samsung Electronics Co., Ltd.</p>
<p><b>FP1-079</b></p>	<p><b>Evaluation of Atomic-level Interfacial Layer Using AFM</b>  Minhyung Kim<sup>1</sup>, Jina Kim<sup>1</sup>, Yong Hyeon Cho<sup>2</sup>, Seungjae Heo<sup>1</sup>, Hu Young Jeong<sup>3</sup>, Min Hyuk Park<sup>2</sup>, and Yunseok Kim<sup>1</sup>  <sup>1</sup>School of Advanced Materials Science and Engineering, Sungkyunkwan University, <sup>2</sup>Department of Materials Science and Engineering, Seoul National University, <sup>3</sup>Graduate School of Semiconductor Materials and Devices Engineering, UNIST</p>
<p><b>FP1-080</b></p>	<p><b>Defect States of Al<sub>x</sub>Ga<sub>1-x</sub>N Epilayers Grown on Si-doped GaN by Metal Organic Chemical Vapor Deposition</b>  Kyoung Su Lee<sup>1</sup>, Joocheol Jeong<sup>2</sup>, Yunseok Heo<sup>2</sup>, Okhyun Nam<sup>2</sup>, and Eun Kyu Kim<sup>1</sup>  <sup>1</sup>Department of Physics and Research Institute of Natural Sciences, Hanyang University, <sup>2</sup>Department of Nano &amp; Semiconductor Engineering, Tech University of Korea</p>
<p><b>FP1-081</b></p>	<p><b>Room Temperature Growth of In-plane Controllable MgO Thin Film by Off-axis Sputtering for Monolithic 3D Integration of Epi-Ge</b>  Daeyoon Baek<sup>1,2</sup>, Seung-Hwan Kim<sup>2</sup>, Seong-hyun Son<sup>1,2</sup>, Seung-heon Chris Baek<sup>2</sup>, and Hyung-jun Kim<sup>2</sup>  <sup>1</sup>School of Electrical Engineering, Korea University, <sup>2</sup>Center for Spintronics, KIST</p>
<p><b>FP1-082</b></p>	<p><b>Epitaxial Growth 를 통한 Poly-Si 기판에서의 선택적 증착 특성 연구</b>  김성준<sup>1</sup>, 박준형<sup>2</sup>, 정희운<sup>2</sup>, 신왕철<sup>2</sup>, 박인성<sup>3</sup>, 박영욱<sup>2</sup>, 안진호<sup>1,2,4</sup>  <sup>1</sup>한양대학교 나노반도체공학과, <sup>2</sup>한양대학교 신소재공학과, <sup>3</sup>한양대학교 나노과학기술연구소, <sup>4</sup>EUV-IUCC</p>
<p><b>FP1-083</b></p>	<p><b>Switching Control of ZnTe Layer Modulated by Bottom TiN Electrode</b>  Yeong Gwang Kim<sup>1,2</sup>, Wansun Kim<sup>3</sup>, Sang Hwa Park<sup>4</sup>, Min Jay Kim<sup>1,2</sup>, Jaeyeon Kim<sup>3</sup>, Tae Gyu Rhee<sup>1,2</sup>, In Hak Lee<sup>5</sup>, Hyuk Jin Kim<sup>1</sup>, Sang Mo Yang<sup>4</sup>, Hyun-chul Sohn<sup>3</sup>, and Young Jun Chang<sup>1,2,6</sup>  <sup>1</sup>Department of Physics, University of Seoul, <sup>2</sup>Department of Smart Cities, University of Seoul, <sup>3</sup>Department of Material Science and Engineering, Yonsei University, <sup>4</sup>Department of Physics, Sogang University, <sup>5</sup>Department of Physics, UC Berkeley, <sup>6</sup>Department of Intelligent Semiconductor Engineering, University of Seoul</p>



FP1-084	<p><b>Fabrication of Fe-MST Memory with Van Der Waals Heterostructure based on Characteristics of Ferroelectric HZO and Ferroelectric-phase Transition Material</b></p> <p>Do Kyeong Yun and Woo Jong Yu Department of Electrical and Computer Engineering, Sungkyunkwan University</p>
FP1-085	<p><b>Observation of Ferroelectric Phase Transitions in Two-dimensional Hybrid Organic Inorganic Perovskites through Piezoresponse Force Microscopy</b></p> <p>Tae Hyun Jung<sup>1</sup>, Yun Seung Kuk<sup>2</sup>, Sang Woo Lee<sup>1</sup>, Kang Min Ok<sup>2</sup>, and Sang Mo Yang<sup>1</sup> <sup>1</sup>Department of Physics, Sogang University, <sup>2</sup>Department of Chemistry, Sogang University</p>
FP1-086	<p><b>New Volatile Strontium Precursors for Next Generation Capacitor in DRAM</b></p> <p>Chanwoo Park<sup>2</sup>, Chang Seop Hong<sup>1</sup>, and Taek-Mo Chung<sup>2</sup> <sup>1</sup>Department of Chemistry, Korea University, <sup>2</sup>Advanced Materials Division, KRICT</p>
FP1-087	<p><b>Strain Effect on the Ferroelectric Domain Morphology in Rhombohedral Multilayer Molybdenum Disulfide</b></p> <p>June Hee Shin, Sae-A Kim, and Sang Mo Yang Department of Physics, Sogang University</p>
FP1-088	<p><b>Post-heat Treatment Effect of Tin Monosulfide Synthesized by Metal Organic Chemical Vapor Deposition</b></p> <p>Ji Woon Choi<sup>1</sup> and Taek-Mo Chung<sup>1,2</sup> <sup>1</sup>Thin Film Materials Research Center, KRICT, <sup>2</sup>Department of Chemical Convergence Materials, UST</p>
FP1-089	<p><b>Si-assisted Growth of Multilayer h-BN on Ge</b></p> <p>Seung-Hwa Baek<sup>1,2</sup> and Cheol-Joo Kim<sup>1,2</sup> <sup>1</sup>Department of Chemical Engineering, POSTECH, <sup>2</sup>Center of Van der Waals Quantum Solids, IBS</p>
FP1-090	<p><b>Growth of Amorphous BN Using Chemical Vapor Deposition to Find an Optimum Growth Condition</b></p> <p>Jun Sun Son and Woo Jong Yu Department of Electrical and Computer Engineering, Sungkyunkwan University</p>
FP1-091	<p><b>도핑 제어된 전이금속 WSe<sub>2</sub>/MoS<sub>2</sub> 이종 접합 포토 다이오드</b></p> <p>Sung Hyun Kim and Woo Jong Yu Department of Electrical and Computer Engineering, Sungkyunkwan University</p>

FP1-092	<p><b>Growth of Hexagonal-shape Si Epilayer on 4H-SiC Using Mixed-source HVPE</b></p> <p>Seonwoo Park<sup>1</sup>, Suhyun Mun<sup>1</sup>, Kyoung Hwa Kim<sup>1</sup>, Hyung Soo Ahn<sup>1</sup>, Jae Hak Lee<sup>1,2</sup>, Min Yang<sup>1</sup>, Young Tea Chun<sup>1</sup>, Sam Nyung Yi<sup>1</sup>, Yeon-Suk Jang<sup>3</sup>, Won Jae Lee<sup>3</sup>, Myeong-Cheol Shin<sup>4</sup>, and Sang-Mo Koo<sup>4</sup></p> <p><sup>1</sup>Department of Nano-Semiconductor Engineering, Korea Maritime and Ocean University, <sup>2</sup>LNBS Co., Ltd., <sup>3</sup>Department of Advanced Materials Engineering, Dong-Eui University, <sup>4</sup>Department of Electronic Materials Engineering, Kwangwoon University</p>
FP1-093	<p><b>Growth of Ge-AlN Hexa-cone Core-shell Microneedles by AlN Nanowires</b></p> <p>Suhyun Mun<sup>1</sup>, Seonwoo Park<sup>1</sup>, Kyoung Hwa Kim<sup>1</sup>, Hyung Soo Ahn<sup>1</sup>, Jae Hak Lee<sup>1,2</sup>, Min Yang<sup>1</sup>, Young Tea Chun<sup>1</sup>, Sam Nyung Yi<sup>1</sup>, Yeon-Suk Jang<sup>3</sup>, Won Jae Lee<sup>3</sup>, Myeong-Cheol Shin<sup>4</sup>, and Sang-Mo Koo<sup>4</sup></p> <p><sup>1</sup>Department of Nano-Semiconductor Engineering, Korea Maritime and Ocean University, <sup>2</sup>LNBS Co., Ltd., <sup>3</sup>Department of Advanced Materials Engineering, Dong-Eui University, <sup>4</sup>Department of Electronic Materials Engineering, Kwangwoon University</p>
FP1-094	<p><b>Design and Analysis of Multiple Fin-type Vertical GaN Power Device based on Epitaxially Grown GaN-on-sapphire</b></p> <p>Jeong Woo Hong, Sang Ho Lee, Jin Park, Ga Eon Kang, Jun Hyeok Heo, So Ra Jeon, Min Seok Kim, Seung Ji Bae, and In Man Kang</p> <p>School of Electronic and Electrical Engineering, Kyungpook National University</p>
FP1-095	<p><b>Analysis of Thermal Characteristics of AlGaIn/GaN High Electron Mobility Transistors by Adjusting Recessed Source-connected Field-plate: A Simulation Study</b></p> <p>Ji-Hun Kim, Jae-Hun Lee, and Hyun-Seok Kim</p> <p>Division of Electronics and Electrical Engineering, Dongguk University</p>
FP1-096	<p><b>Growth and Device Characterization of 6 inch GaAs Metamorphic High Electron Mobility Transistors (mHEMTs)</b></p> <p>Jae-Phil Shim<sup>1</sup>, Hyunchul Jang<sup>1</sup>, Ki-Yong Shin<sup>1</sup>, Yongeun Kim<sup>1</sup>, Geunuk Han<sup>1</sup>, Yunji Jeong<sup>1</sup>, Myungsoo Park<sup>1</sup>, Seung Heon Shin<sup>2</sup>, Donghyun Kim<sup>1</sup>, and Chan-Soo Shin<sup>1</sup></p> <p><sup>1</sup>KANC, <sup>2</sup>Korea Polytechnics</p>
FP1-097	<p><b>Properties of Post Annealed Ga<sub>2</sub>O<sub>3</sub> Thin Films Grown on Si Substrates by MOCVD at Low Temperature</b></p> <p>Jang Beom An, Nam Jun Ahn, Hyung Soo Ahn, Kyung Hwa Kim, and Min Yang</p> <p>Department of Nano-Semiconductor Engineering, Korea Maritime and Ocean University</p>
FP1-098	<p><b>First Demonstration of HZO/<math>\beta</math>-Ga<sub>2</sub>O<sub>3</sub> Ferroelectric FinFET for High-Performance Power Devices</b></p> <p>Seohyeon Park<sup>1</sup>, Jaewook Yoo<sup>1</sup>, Hyeonjun Song<sup>1</sup>, Soyeon Kim<sup>1</sup>, Hongseung Lee<sup>1</sup>, Seongbin Lim<sup>1</sup>, Minah Park<sup>1</sup>, Peide D. Ye<sup>2</sup>, and Hagnyoul Bae<sup>1</sup></p> <p><sup>1</sup>Jeonbuk National University, <sup>2</sup>Purdue University</p>
FP1-099	<p><b>Thermal Conductivity Measurement of Gallium Nitride Thin Films Using Thermoreflectance</b></p> <p>Jihyun Kim and Jungwan Cho</p> <p>Sungkyunkwan University</p>
FP1-100	<p><b>Ti 및 Ni 금속 기판 위에 MOCVD 방법에 의해 저온 성장한 Ga<sub>2</sub>O<sub>3</sub> 박막들의 특성 평가</b></p> <p>Ji Ye Lee, Seon Jin Mun, Dong Ho Lee, Nam Jun Ahn, Jang Beom Ahn, Hyung Soo Ahn, Kyoung Hwa Kim, and Min Yang</p> <p>Electronic Material Engineering, Korea Maritime and Ocean University</p>
FP1-101	<p><b>Effect of Ramp Rates of Oxidation Temperature on the Characteristics of 4H-SiC MOS Capacitor</b></p> <p>Young Jae Park<sup>1</sup>, Seongjun Kim<sup>1</sup>, Joon Kim<sup>2</sup>, Hyeon Ju Hwang<sup>1</sup>, Yu Jeong Lee<sup>1</sup>, Kyeong-Keun Choi<sup>1</sup>, Myung Jin Park<sup>1</sup>, Woong-Suk Yang<sup>1</sup>, Sung-Woong Han<sup>1</sup>, Dae-Hwan Kang<sup>1,3</sup>, and Hoon-Kyu Shin<sup>1</sup></p> <p><sup>1</sup>National Institute for Nanomaterials Technology, POSTECH, <sup>2</sup>Center for Semiconductor Technology Convergence, POSTECH, <sup>3</sup>Department of Semiconductor Engineering, POSTECH</p>

<p>FP1-102</p>	<p><b>Epitaxial Growth and Characterization of GaAs-mHEMT with InP Two-step Metamorphic Buffer Using MOCVD</b>  Hyunchul Jang<sup>1</sup>, Jaephil Shim<sup>1</sup>, Yongeun Kim<sup>1</sup>, Ki-Yong Shin<sup>1</sup>, Geunuk Han<sup>1</sup>, Yunji Jeong<sup>1</sup>, Seung Heon Shin<sup>2</sup>, Sooseok Kang<sup>1</sup>, Keun Man Song<sup>1</sup>, Yongsu Choi<sup>1</sup>, Donghyun Kim<sup>1</sup>, and Chan-Soo Shin<sup>1</sup>  <sup>1</sup>KANC, <sup>2</sup>Korea Polytechnics</p>
<p>FP1-103</p>	<p><b>Improving Contact Resistance in InAs Nanowires through Surface Passivation and Annealing</b>  Yeon Hak Mu and Jae Cheol Shin  동국대학교 전자전기공학부</p>
<p>FP1-104</p>	<p><b>Analysis of Switching Characteristics of 1.2 kV SiC Trench MOSFETs for Improving Breakdown Voltage</b>  Yeongeun Park<sup>1</sup>, Hyowon Yoon<sup>1</sup>, Chaeyun Kim<sup>1</sup>, Sangyeob Kim<sup>1</sup>, Gyuhyeok Kang<sup>1</sup>, Jinhun Kim<sup>1</sup>, Gukhwa Jeon<sup>1</sup>, Sumin Park<sup>1</sup>, Dusan Baek<sup>1</sup>, Kanghee Shin<sup>1</sup>, Jaejin Song<sup>2</sup>, Jeongyun Lee<sup>2</sup>, Soontak Kwon<sup>2</sup>, and Ogyun Seok<sup>1</sup>  <sup>1</sup>Kumoh National Institute of Technology, <sup>2</sup>KEC</p>
<p>FP1-105</p>	<p><b>매립형 산화막 구조를 통한 1.2 kV SiC MOSFET 의 스위칭 특성 개선</b>  윤효원, 김채운, 박영은, 김상엽, 강규혁, 김진훈, 박수민, 백두산, 석오균  금오공과대학교</p>
<p>FP1-106</p>	<p><b>Investigation of Post-Annealing on Self-Powered UV-C Photodetector based on High-Performance p-NiO/<math>\beta</math>-Ga<sub>2</sub>O<sub>3</sub> Heterojunction</b>  Taejun Park, Yusup Jung, TaiYoung Kang, and SinSu Kyoung  Powercubesemi Inc.</p>
<p>FP1-107</p>	<p><b>Application of High-Power PECVD for GaN HEMTs</b>  Arim Choi, Yumin Koh, Jiseon Lee, Chuyoung Cho, Dae Young Kim, Eunhae Jun, Yun-hee Shin, Dong-Hyun Kim, and Kwang-Seok Seo  KANC</p>
<p>FP1-108</p>	<p><b>Ferroelectric Characteristic of Hf<sub>0.5</sub>Zr<sub>0.5</sub>O<sub>x</sub> Film on InGaAs Substrate with Annealing Temperature Engineering and Electric-Field Cycling</b>  Yoon-Je Suh, Jaeyong Jeong, Bong Ho Kim, Song-Hyeon Kuk, Seong Kwang Kim, Joon Pyo Kim, and Sangheyon Kim  KAIST</p>
<p>FP1-109</p>	<p><b>Effect of Anneal Conditions of Al-implanted p-type Junction on a Specific Resistance and a TCR(Temperature Coefficient of Resistance) in 4H-SiC MOSFETs</b>  Kyeong-Keun Choi<sup>1</sup>, Su Kon Kim<sup>1</sup>, Seongjeen Kim<sup>2</sup>, and Jae Kyoung Mun<sup>3</sup>  <sup>1</sup>POSTECH, <sup>2</sup>Kyungnam University, <sup>3</sup>ETRI</p>
<p>FP1-110</p>	<p><b>A 150-mm Wafer Process Technology for Schottky-type p-GaN Gate HEMTs</b>  Jiseon Lee, Yumin Koh, Arim Choi, Myungsoo Park, Eunhae Jun, Yun-hee Shin, Dong-Hyun Kim, and Kwang-Seok Seo  KANC</p>
<p>FP1-111</p>	<p><b>A Semi-control-gate Transistor based on MoS<sub>2</sub>/MoTe<sub>2</sub> Heterostructure with the Tunable Multi-valued Logic Characteristic</b>  Jing-Yao Yu<sup>1,2</sup> and Gyu-Tae Kim<sup>1,2</sup>  <sup>1</sup>Nano Devive Lab., <sup>2</sup>Korea University</p>
<p>FP1-112</p>	<p><b>Investigation of the Temperature Sensitivity and the Sensing Voltage Drift of the Body Diode of SiC Power MOSFET</b>  Inho Kang, Kinam Song, Kihyun Kim, Kyoungho Lee, and Jonghyun Kim  KERI</p>

FP1-113	<p><b>Gate Reliability of Schottky-type p-GaN Gate HEMTs Under Time Dependent Gate Stress</b></p> <p>Eunchae Jun, Yumin Koh, Jiseon Lee, Arim Choi, Deoksoo Park, Sang Hyun Jung, Dong-Hyun Kim, and Kwang-Seok Seo</p> <p>KANC</p>
FP1-114	<p><b>멀티에피를 이용한 1,700V P-Shielding Trench Gate MOSFET 성능 개선</b></p> <p>안병섭, 남태진, 김대희, 강태영, 경신수</p> <p>Powercubesemi Inc.</p>
FP1-115	<p><b>Control Doping Concentration of Sn-doped <math>\alpha</math>-Ga<sub>2</sub>O<sub>3</sub> Epitaxial Films by Mist-CVD</b></p> <p>Jang Hyeok Park<sup>2,3</sup> and You Seung Rim<sup>1,2,3</sup></p> <p><sup>1</sup>Department of Intelligent Mechatronics Engineering, <sup>2</sup>Intelligent Convergence Engineering, <sup>3</sup>Semiconductor System Engineering, Sejong University</p>
FP1-116	<p><b>P형 물질의 홀 농도에 따른 D-Mode GaN HEMT 문턱전압 연구</b></p> <p>Hyun-Ho Jeong<sup>1</sup>, Hyeon-Young Jeong<sup>1</sup>, Hyeon-Cheol Kim<sup>1</sup>, Sakhone Pharkphoumy<sup>1</sup>, Taehoon Jang<sup>2</sup>, Chel-Jong Choi<sup>1</sup>, Dae Woo Kim<sup>2</sup>, and Kyu-Hwan Shim<sup>1,2</sup></p> <p><sup>1</sup>Jeonbuk National University, <sup>2</sup>R&amp;D Division, Sigetronics Inc.</p>
FP1-117	<p><b>Optimization of Double p-base SiC MOSFETs for Reaching SiC Limit</b></p> <p>Junghun Kim, Inho Kang, and Hyoung Woo Kim</p> <p>KERI</p>
FP1-118	<p><b>열특성을 이용한 광반도체 광특성 평가</b></p> <p>마병진, 정태희, 최성순, 이관훈</p> <p>KETI</p>
FP1-119	<p><b>Optimization and Characterization of p-type Gallium Nitride Contacts for High Power Device Applications</b></p> <p>Donghan Kim<sup>1,2</sup>, Hongsik Park<sup>1</sup>, Sung-Beum Bae<sup>2</sup>, and Hyung-seok Lee<sup>2</sup></p> <p><sup>1</sup>School of Electronic and Electrical Engineering, Kyungpook National University, <sup>2</sup>ETRI</p>
FP1-120	<p><b>AlGaIn/GaN HD-GIT 의 Dynamic R<sub>on</sub>개선 연구</b></p> <p>Min-Keun Lee, Jun-hyeok Yim, and Ho-Young Cha</p> <p>School of Electronic and Electrical Engineering, Hongik University</p>
FP1-121	<p><b>The Energy Transfer of Eu<sup>2+</sup>/Mn<sup>2+</sup> in Cation Disordered Ba<sub>6</sub>CaNaYAl<sub>2</sub>Si<sub>6</sub>O<sub>24</sub> Phosphors for NUV-LED Applications</b></p> <p>Heonji Ha<sup>1</sup>, Jeonghun Lee<sup>2</sup>, and Sangmoon Park<sup>1,2,3</sup></p> <p><sup>1</sup>Department of Electronics-Energy Materials, Silla University, <sup>2</sup>Division of Energy and Chemical Engineering Major in Energy and Applied Chemistry, Silla University, <sup>3</sup>Department of Fire Protection and Safety Management, Silla University</p>
FP1-122	<p><b>High Efficiency Single Junction GaAs Thin-film Solar Cell with Deep Junction on an Al Carrier</b></p> <p>Doyoung Yuk<sup>1</sup>, Wook Kim<sup>1</sup>, Younghan Yook<sup>1</sup>, Sujong Kim<sup>1</sup>, Minseong Seo<sup>1</sup>, Haoyan Rong<sup>1</sup>, Sangin Kim<sup>1,2</sup>, and Jaejin Lee<sup>1,2</sup></p> <p><sup>1</sup>Department of Intelligence Semiconductor Engineering, Ajou University, <sup>2</sup>Department of Electrical and Computer Engineering, Ajou University</p>
FP1-123	<p><b>Design and Simulation of Normally-Off GaN FINFET</b></p> <p>Soo-Young Moon<sup>1,2</sup>, Sang-Mo Koo<sup>1</sup>, Sung-Beum Bae<sup>2</sup>, and Hyung-seok Lee<sup>2</sup></p> <p><sup>1</sup>Department of Electronic Materials Engineering, Kwangwoon University, <sup>2</sup>ETRI</p>

## G. Device & Process Modeling, Simulation and Reliability 분과

ZONE 2 (2층 로비)

FP1-124	<p><b>Random Dopant Fluctuation에 따른 FBFET의 전기적 특성 변화 분석</b></p> <p>전주희, 조경아, 김상식 고려대학교 전기전자공학과</p>
FP1-125	<p><b>채널 도핑 농도에 따른 다결정 실리콘 FBFET의 전기적 특성 연구</b></p> <p>박태호, 조경아, 김상식 고려대학교 전기전자공학과</p>
FP1-126	<p><b>채널 길이와 두께에 따른 FBFET 배열 소자의 IMP 연산 신뢰성 연구</b></p> <p>오정윤, 전주희, 손재민, 조경아, 김상식 고려대학교 전기전자공학과</p>
FP1-127	<p><b>Study on the Sustainability of Low-Temperature Deuterium Annealing for Damaged Gate Dielectric by Ionizing Radiation</b></p> <p>Hyo-Jun Park, Tae-Hyun Kil, Ju-Won Yeon, and Jun-Young Park Chungbuk National University</p>
FP1-128	<p><b>Phase-field and Electrothermal Simulation of Conductive Filament Behavior in Resistive Memory for Neuromorphic Applications with Varied Pulse Voltages and Initial Defects</b></p> <p>Chanhoo Park, Dongmyung Jung, and Yongwoo Kwon Hongik University</p>
FP1-129	<p><b>A Study on ESD Performance depending on Power Clamp Structure</b></p> <p>Dong-sin Kim, Young-bum Eom, Heon Park, Tae-ho Yeom, Hwang-gon Jeon, Ji-hye Jang, and Sun-ha Hwang SK hynix system ic</p>
FP1-130	<p><b>Numerical Analysis of Warpage by HBM Structure during Hybrid Bonding</b></p> <p>Seong-Hwan Park and Eun-Ho Lee Sungkyunkwan University</p>
FP1-131	<p><b>A Novel Capacitorless 1T DRAM with Self-refresh Mechanism</b></p> <p>Sang Ho Lee, Jin Park, Ga Eon Kang, Jun Hyeok Heo, So Ra Jeon, Min Seok Kim, Seung Ji Bae, Jeong Woo Hong, and In Man Kang School of Electronic and Electrical Engineering, Kyungpook National University</p>
FP1-132	<p><b>Efficient Improvements of Poly-Based Resistor Variation Employing Implantation Impact for Achieving High Yield of Mobile Display Driver IC</b></p> <p>Myeonghwan Kim, Jooyeok Seo, Dong-Il Park, Youngmok Kim, Kyunglyong Kang, Jun-gu Kang, and Yongsang Jeong Foundry Division, Samsung Electronics Co., Ltd.</p>
FP1-133	<p><b>A Novel ESD Protection Diode with Dual Current Path for High ESD Performance</b></p> <p>Youngbum Eom, Myoungchul Lim, Woojong Lee, Myunghee Nam, and Jeongsoo Park SK hynix system ic</p>
FP1-134	<p><b>다중 목적 베이지안 최적화를 활용한 차세대 트랜지스터 설계</b></p> <p>정현준, 공정택, 김소영 성균관대학교 정보통신대학</p>
FP1-135	<p><b>래치업 면역 특성 및 고전압 어플리케이션을 위한 N-Stack 기술을 이용한 SCR 기반 ESD 보호소자에 대한 연구</b></p> <p>Jeong Min Lee<sup>1</sup>, Sang Wook Kwon<sup>2</sup>, Seung Gu Jeong<sup>2</sup>, Seung Hwan Baek<sup>1</sup>, U Yeol Seo<sup>1</sup>, and Yong-Seo Koo<sup>2</sup> <sup>1</sup>Department of Foundry Engineering, Dankook University, <sup>2</sup>Department of Electronics and Electrical Engineering, Dankook University</p>

FP1-136	<p><b>고전압 ESD 보호를 위한 PNP 소자 설계 방법 연구</b></p> <p>Myoungchul Lim, Woojong Lee, Youngbum Eom, Myunghee Nam, and Jeongsoo Park TD (ESD), R&amp;D Center, SK hynix system ic</p>
FP1-137	<p><b>회로 성능 기반 차세대 트랜지스터의 Inverse Design</b></p> <p>최진영, 공정택, 김소영 성균관대학교 정보통신대학</p>
FP1-138	<p><b>Optimization of Work Function Material for Enhanced N-type and P-type Device Performance</b></p> <p>Min Kyun Sohn, Jeong Woo Park, Sang Hoon Kim, Wang Joo Lee, Seong Hyun Lee, and Dong Woo Suh ETRI</p>
FP1-139	<p><b>로직 어플리케이션을 위한 델타전도 스위칭 소자의 Scalability 연구</b></p> <p>전재현<sup>1,2</sup>, 이용수<sup>1,2</sup>, 김기영<sup>1,2</sup>, 김민재<sup>1,2</sup>, 이해원<sup>1,2</sup>, 황현준<sup>1,2</sup>, 이병훈<sup>1,2</sup> <sup>1</sup>CSTC, POSTECH, <sup>2</sup>Department of Electrical Engineering, POSTECH</p>
FP1-140	<p><b>Local Plasma Treatment Effect on TMD Device Analyzed by DC and LFN</b></p> <p>Jiyoon Kim<sup>1</sup>, Yonghun Kim<sup>2</sup>, and Hyunjin Ji<sup>1</sup> <sup>1</sup>Department of Electrical Engineering, University of Ulsan, <sup>2</sup>Department of Energy &amp; Electronic Materials, KIMS</p>
FP1-141	<p><b>Comparison between Au and Al Top Electrode in MoS<sub>2</sub> Memristor</b></p> <p>Hee Yoon Jang, Do Young Kim, Min Chul Chun, and Seoung-Ki Lee School of Materials Science and Engineering, Pusan National University</p>
FP1-142	<p><b>Finite-bias Molecular Dynamics Simulations of Water at the Electrified Graphene Surface</b></p> <p>Hyeonwoo Yeo, Juho Lee, Ryong Gyu Lee, and Yong-Hoon Kim School of Electrical Engineering, KAIST</p>
FP1-143	<p><b>Strain-induced Phase Transformation In MoTe<sub>2</sub>: A Phase-field Simulation Study</b></p> <p>Muhammad Hassaan Ali, Won-Kyu Lee, and Yongwoo Kwon Hongik University</p>
FP1-144	<p><b>Modeling and Analysis on DRAM Cell Write Failure due to Word-line Metal Void Formation</b></p> <p>Donggyu Heo, Dongsik Kong, Kijae Huh, Junsoo Kim, Jeonghoon Oh, Ilgweon Kim, Jemin Park, and Jaihyuk Song Semiconductor R&amp;D Center, Samsung Electronics Co., Ltd.</p>
FP1-145	<p><b>Study on Leakage Current and Scaling Limit of Cell Transistor Gate Oxide in DRAM for TDDB Reliability</b></p> <p>Ji hye Kwon, Pyung Moon, Myeong jin Bang, Dong sik Gong, Kyul Ko, Jun bum Lee, Jea hyun Choi, Jun soo Kim, Jeong hoon Oh, Il gweon Kim, Je min Park, and Jai hyuk Song Samsung Electronics Co., Ltd.</p>
FP1-146	<p><b>Study on the Breakdown Voltage Characteristics of SiC Planar MOSFET by Changing P-base Doping Level</b></p> <p>Seung Hwan Baek<sup>1</sup>, Sang Wook Kwon<sup>2</sup>, Seung Gu Jeong<sup>2</sup>, Jeong Min Lee<sup>1</sup>, U Yeol Seo<sup>1</sup>, and Yong Seo Koo<sup>2</sup> <sup>1</sup>Department of Foundry Engineering, Dankook University, <sup>2</sup>Department of Electronics and Electrical Engineering, Dankook University</p>
FP1-147	<p><b>First-principles Approach for the Capacitor Characteristics of Two-dimensional Heterojunctions based on Electrostatic Potential Embedding</b></p> <p>Ryong-Gyu Lee, Kaptan Rajput, Tae Hyung Kim, and Yong-Hoon Kim School of Electrical Engineering, KAIST</p>

FP1-148	<p><b>Reliability Assessment Method for Development of High Quality Gate Oxide in DRAM Transistor</b></p> <p>Su Hyun Kim, Sang Il Han, Gyu Hyun Lee, Hyuck Chai Jung, Jun Soo Kim, Sung Ho Jang, Jeong Hoon Oh, Il Gweon Kim, Je Min Park, and Jai Hyuk Song</p> <p>Samsung Electronics Co., Ltd.</p>
FP1-149	<p><b>Indium Gallium Arsenide Electron and Phonon Properties Study by Density Functional Theory</b></p> <p>Tae Hui Lee and Byoung Don Kong</p> <p>Department of Electrical Engineering, POSTECH</p>
FP1-150	<p><b>Non-equilibrium First-principles Simulations of Transition Metal Dichalcogenide Field Effect Transistors</b></p> <p>Seunghyun Yu, Tae Hyung Kim, and Yong-Hoon Kim</p> <p>School of Electrical Engineering, KAIST</p>
FP1-151	<p><b>Simulation of Crystallization in Deposited Semiconductor Thin Films Using Phase Field Method.</b></p> <p>Jung In Park, Hwanwook Lee, and Yongwoo Kwon</p> <p>Hongik University</p>
FP1-152	<p><b>Analysis of Interconnect Structures for Thermal Reliability Improvement and Study of Improved Structures</b></p> <p>Tae Yeong Hong and Seul Ki Hong</p> <p>Department of Semiconductor Engineering, Seoul National University of Science and Technology</p>
FP1-153	<p><b>Impacts of Plasma-Induced Physical Damage on DRAM High-k Metal Gate Transistor Oxide Reliability Degradation</b></p> <p>Sanggyu Ko, Hyuck-chai Jung, Sungho Jang, Junsoo Kim, Jeonghoon Oh, Ilgweon Kim, Jemin Park, and Jaihyuk Song</p> <p>DRAM Technology Development, Samsung Electronics Co., Ltd.</p>
FP1-154	<p><b>Ising Machine based on Ovonic Threshold Switch Oscillator</b></p> <p>Young Woong Lee<sup>1</sup>, Unhyeon Kang<sup>1,3</sup>, Sangheon Kim<sup>1,2</sup>, Seungmin Oh<sup>1,3</sup>, Jaewook Kim<sup>1,3</sup>, Daseung Jeong<sup>1</sup>, Jingyeong Hwang<sup>1</sup>, and Suyoun Lee<sup>1,5</sup></p> <p><sup>1</sup>Center for Neuromorphic Engineering, KIST, <sup>2</sup>Department of Materials Science and Engineering, Korea University, <sup>3</sup>Materials Science &amp; Engineering, Seoul National University, <sup>4</sup>Department of Materials Science &amp; Engineering, Seoul National University of Science and Technology, <sup>5</sup>Division of Nano &amp; Information Technology, Korea University of Science and Technology</p>
FP1-155	<p><b>First-principles Study of Gating-Based Modulation Defect Energy Levels in Hexagonal Boron Nitride on MoS<sub>2</sub></b></p> <p>Ji-Yoon Song, Ryong-Gyu Lee, and Yong-Hoon Kim</p> <p>School of Electrical Engineering, KAIST</p>
FP1-156	<p><b>Electronic Structures of Ovonic Threshold Switching Chalcogenide Materials from First-principles Simulations</b></p> <p>Su-Bong Lee<sup>1</sup>, Young-Min Kim<sup>1,2</sup>, and Jong-Souk Yeo<sup>1</sup></p> <p><sup>1</sup>School of Integrated Technology, Yonsei University, <sup>2</sup>BK21 Graduate Program in Intelligent Semiconductor Technology</p>
FP1-157	<p><b>FBFET Model Using Artificial Neural Network for Circuit Simulation</b></p> <p>Seung Su Jeong and Yun Seop Yu</p> <p>Major of ICT &amp; Robotics Engineering, Hankyong National University</p>
FP1-158	<p><b>Strain &amp; Low-temperature Behavior of Quantum Hybridization Negative Differential Resistance from Non-Pb 1D Halide Perovskite</b></p> <p>Jeongwon Lee, Tae Hyung Kim, Juho Lee, and Yong-Hoon Kim</p> <p>School of Electrical Engineering, KAIST</p>

FP1-159	<p><b>Investigation of Electrical Performance of Vertical MoS<sub>2</sub> Transistors</b></p> <p>So Min An, Hyun Woo Kim, Sang Hwa Lee, and Bongjoong Kim Hongik University</p>
FP1-160	<p><b>Investigation of Breakdown Performance in Multi-Finger HS nLDMOS according to the Length between Drain and Iso Contact</b></p> <p>Semyung Kwon, Jieun Lee, Jong Min Kim, and Hyun Chul Nah Device Enabling Team, DB HiTek</p>
FP1-161	<p><b>Enhancement of the Electrical Safe Operating Area with Deep p-Well in LDMOS</b></p> <p>Jieun Lee, Jong Min Kim, and Hyun Chul Nah Device Enabling Team, DB HiTek</p>
FP1-162	<p><b>TCAD Simulation Method of Hot Carrier Degradation in LDMOS</b></p> <p>Jihye Park<sup>1</sup>, Jieun Lee<sup>1</sup>, Jong Min Kim<sup>1</sup>, Junggho Kim<sup>2</sup>, Junhee Cho<sup>2</sup>, Hyewon Du<sup>2</sup>, and Hyun Chul Nah<sup>1</sup> <sup>1</sup>Device Enabling Team, DB HiTek, <sup>2</sup>Device Development Team, DB HiTek</p>
FP1-163	<p><b>Investigation of Transport Phenomenon and Conduction Mechanism in HfO<sub>2</sub>-Based Metal-Ferroelectric-Metal Capacitor</b></p> <p>Ki-Sik Im<sup>1</sup> and Ho-Young Cha<sup>2</sup> <sup>1</sup>Department of Green Semiconductor System, Daegu Campus, Korea Polytechnics, <sup>2</sup>School of Electronic and Electrical Engineering, Hongik University</p>
FP1-164	<p><b>Investigation of Contact Resistance between WO<sub>x</sub> Channel and Metal Electrodes in Electrochemical Random-Access Memory</b></p> <p>Juhee Kim, Junyoung Choi, Seungkun Kim, Hyunjeong Kwak, and Seyoung Kim Department of Materials Science and Engineering, POSTECH</p>
FP1-165	<p><b>Whole-Chip All-Directional ESD Protection Circuit with SCR Structure for Low Voltage Applications</b></p> <p>Bo-Bae Song, Young-chul Kim, and Hyun-chul Nah Device Enabling Team, DB HiTek</p>
FP1-166	<p><b>Impact of Work-function Variation on Inverter Characteristics of a Gate-all-around Complementary FET (CFET) for 3-nm Technology Nodes</b></p> <p>Seong-Ji Min, Sang-pill Kim, Eun-young Park, Jun-hyeok Lee, Hae-yong Park, Hyeong-kyu Jin, and Hyun-Yong Yu Korea University</p>
FP1-167	<p><b>Extraction of Subgap Density-of-States in AOS TFTs through Capacitance-Voltage Characteristics Considering Photovoltaic Effect</b></p> <p>Sueng Hyeop Han, Haesung Kim, Ju Young Park, Jong-Ho Bae, Sung- Jin Choi, Dae Hwan Kim, and Dong Myong Kim Kookmin University</p>
FP1-168	<p><b>Quantitative Modeling of the Endurance Degradation in NAND Flash Memory</b></p> <p>Han Byeol Oh and Byung Chul Jang School of Electronic and Electrical Engineering, Kyungpook National University</p>
FP1-169	<p><b>Breakdown Voltage Improvement in Junction Isolation Type LDMOS</b></p> <p>Sin Wook Kim, Dong Yeong Kim, Su Yeon Kim, Je Won Park, Chae Hyuk Lim, and Myoung Jin Lee Department of ICT Convergence System Engineering, Chonnam National University</p>
FP1-170	<p><b>Switching Performance Improvements of RRAM by Applying Protruding Top Electrode and Utilizing Surface Roughness: Multi-physics Simulations</b></p> <p>Jeonghwan Jang and Mincheol Shin School of Electrical Engineering, KAIST</p>



FP1-171	<p><b>Development of High Voltage ESD Lateral PNP with Base External Resistor and NWELL Cut-out</b></p> <p>Young Sang Son, Young Chul Kim, and Jong Min Kim Technology Enabling Design Support Team, DB HiTek</p>
FP1-172	<p><b>A Physic-Based Numerical Model for Potentiation/Depression Characteristics of Electrochemical Metallization Memristor</b></p> <p>Yeongkwon Kim and Byung Chul Jang School of Electronic and Electrical Engineering, Kyungpook National University</p>
FP1-173	<p><b>Comparative Analysis of the Low-Frequency Noise Behavior of a-IGZO TFT with Different Source/Drain Metal</b></p> <p>Junseong Park, Seongwon Lee, Haesung Kim, Hyunwook Jeong, Yubin Choi, Sung-Jin Choi, Dae Hwan Kim, Dong Myong Kim, and Jong-Ho Bae School of Electronic Engineering, Kookmin University</p>
FP1-174	<p><b>Analysis on Drain Current Transient Response in Amorphous InGaZnO<sub>x</sub> Thin-Film Transistors</b></p> <p>Yubin Choi, Haesung Kim, Hyojin Yang, Sejun Park, Junseong Park, Sung-Jin Choi, Dae Hwan Kim, Dong Myong Kim, and Jong-Ho Bae School of Electrical Engineering, Kookmin University</p>
FP1-175	<p><b>3D Simulation Study of an Edge Termination for Improving Breakdown Characteristics</b></p> <p>Jee Hun Jeong, Min Seok Jang, Da Hui Yoo, Jung Bok Lee, and Ho Jun Lee Pusan National University</p>
FP1-176	<p><b>D-mode Short Circuit Failure Simulation of Silicon IGBT</b></p> <p>Da Hui Yoo<sup>1</sup>, Jee Hun Jeong<sup>1</sup>, Min Seok Jang<sup>1</sup>, Jung Bok Lee<sup>1</sup>, Won Seok Kwon<sup>2</sup>, and Ho Jun Lee<sup>1</sup> <sup>1</sup>Pusan National University, <sup>2</sup>TRinno Technology Co., Ltd.</p>
FP1-177	<p><b>Ar/CF<sub>4</sub> 플라즈마 식각 공정 내 물리적 스퍼터링에서 화학적 스퍼터링으로의 전이에 따른 고종횡비 SiO<sub>2</sub> 식각 프로파일 변화에 대한 전산모사 연구</b></p> <p>최병엽<sup>1</sup>, 김시준<sup>2</sup>, 정원녕<sup>1</sup>, 이영석<sup>2</sup>, 성인호<sup>1</sup>, 조철희<sup>1</sup>, 최민수<sup>1</sup>, 설유빈<sup>2</sup>, 이우빈<sup>1</sup>, 서성현<sup>1</sup>, 유신재<sup>1,2</sup> <sup>1</sup>Department of Physics, Chungnam National University, <sup>2</sup>Institute of Quantum System (IQS), Chungnam National University</p>
FP1-178	<p><b>Analysis of Silicon RC-IGBT for Improving Forward Voltage with Backside Processing</b></p> <p>Jung Bok Lee<sup>1</sup>, Jee Hun Jeong<sup>1</sup>, Da Hui Yoo<sup>1</sup>, Min Seok Jang<sup>1</sup>, Jun Seong Kim<sup>2</sup>, and Ho Jun Lee<sup>1</sup> <sup>1</sup>Pusan University, <sup>2</sup>TRinno Technology Co., Ltd.</p>
FP1-179	<p><b>Impact of Atomic Arrangements in Te-Based Binary Ovonic Threshold Switches during Switching Process in Local Biasing System</b></p> <p>Young-Min Kim<sup>1,2</sup>, Su-Bong Lee<sup>1</sup>, Sangyeop Kim<sup>1,2</sup>, and Jong-Souk Yeo<sup>1</sup> <sup>1</sup>School of Integrated Technology, College of Computing, Yonsei University, <sup>2</sup>BK21 Graduate Program in Intelligent Semiconductor Technology</p>

<p>FP1-180</p>	<p><b>Study of Transparent Conductive Oxide through Electrical and Optical Properties of SrRuO<sub>3</sub> Deposited on Glass and PET Substrates</b>                  Seung Woo Baek<sup>1</sup>, Jun Hyeok Byeon<sup>1</sup>, Ahn Hyung Soo<sup>1</sup>, Jang Nak Won<sup>1</sup>, Ji-Hoon Ahn<sup>2</sup>, and Hong Seung Kim<sup>1</sup>  <sup>1</sup>Korea Maritime and Ocean University, <sup>2</sup>Hanyang University ERICA</p>
<p>FP1-181</p>	<p><b>Near-Infrared Quantum Efficiency Improvement via Process Optimization for CIS Application</b>                  Suhye Park, So-Yun Kim, Hyun Yoo, Nam Yoon Kim, Hyo Sik Kim, Young-Ju Lee, Chang Ki Lee, Keun Hyuk Lim, Jun ho Won, and Won Ho Lee                  SK hynix system ic</p>
<p>FP1-182</p>	<p><b>Polymer Light-emitting Diodes by Using 3PTZ and 3PXZ Small Molecular Hole-transport Layer</b>                  Ji-Yeon Kim<sup>1</sup>, Ju Hee You<sup>1</sup>, Seok Ho Seo<sup>1</sup>, and Dong Ick Son<sup>1,2,3</sup>  <sup>1</sup>Institute of Advanced Composite Materials, KIST, <sup>2</sup>KIST School, UST, <sup>3</sup>Department of Nanomaterials and Nano Science, UST</p>
<p>FP1-183</p>	<p><b>A Study on the Drain Induced Barrier Lowering of IGO TFT Using TCAD Simulation</b>                  Seon Woong Bang and Jae Kyeong Jeong                  Department of Electronic Engineering, Hanyang University</p>
<p>FP1-184</p>	<p><b>HZO-Based Ferroelectric FET Using Oxide Semiconductor</b>                  He Young Kang and Jae Kyeong Jeong                  Department of Electronic Engineering, Hanyang University</p>
<p>FP1-185</p>	<p><b>Enhancing IGZO/Quantum-dots Broadband Photo Sensor through Ga<sub>2</sub>O<sub>3</sub> Passivation Layer</b>                  Yongjun Jeong and JaeKyeong Jeong                  Department of Electronic Engineering, Hanyang University</p>
<p>FP1-186</p>	<p><b>Wavy Structure-Based Thin-Film Transistor for Stretchable Displays</b>                  Jeong Eun Oh and Jae Kyeong Jeong                  Department of Electronics Engineering, Hanyang University</p>
<p>FP1-187</p>	<p><b>Bifunctional Solution-processed Thin Film Transistors with Organic Dielectrics for High Performance and Stability</b>                  Min Ki Kim, Seung Yeon Koh, Hwa Pyeong Noh, Hyo Won Jang, Swarup Biswas, and Hyeok Kim                  School of Electrical and Computer Engineering, University of Seoul</p>
<p>FP1-188</p>	<p><b>Comparative Study of 3-D Field-Effect-Transistors with Indium-Gallium-Zinc Oxide Channel by TCAD Simulation</b>                  Yena Kim and Jae Kyeong Jeong                  Department of Electronic Engineering, Hanyang University</p>
<p>FP1-189</p>	<p><b>Optimization of Hf<sub>x</sub>Zr<sub>1-x</sub>O<sub>2</sub> Ferroelectric Field-effect Transistors by IGZO Channel Oxygen Vacancy Control</b>                  Kyong Jae Kim<sup>2</sup>, Eun Seo Jo<sup>2</sup>, and You Seung Rim<sup>1,2</sup>  <sup>1</sup>Department of Intelligent Mechatronics Engineering and Convergence Engineering for Intelligent Drone, Sejong University, <sup>2</sup>Department of Semiconductor Systems Engineering and Institute of Semiconductor and System IC, Sejong University</p>
<p>FP1-190</p>	<p><b>Facile Fabrication of Strain-Insensitive Capacitive Touch Sensor for Stretchable Displays</b>                  Geonoh Choe and Yei Hwan Jung                  Department of Electronic Engineering, Hanyang University</p>

FP1-191	<p><b>Hybrid PDMS Stamp for Micro-LED Transfer</b></p> <p>Seol Ahn and <b>철희</b>  Department of Electronic Engineering, Hanyang University</p>
FP1-192	<p><b>Transparent Red OLED Using AZO-Ag-AZO Electrode as Anode</b></p> <p>Yong Hyeok Seo<sup>1</sup>, Won Woo Lee<sup>1</sup>, Dongwoon Lee<sup>1</sup>, Dong Gyun Kim<sup>1</sup>, Young Woo Kim<sup>1</sup>, Minseong Park<sup>2</sup>, Ye Ji Shin<sup>2</sup>, Yongmin Jeon<sup>2</sup>, Sang Jik Kwon<sup>1</sup>, and Eou-Sik Cho<sup>1</sup></p> <p><sup>1</sup>Department of Electronic Engineering, Gachon University, <sup>2</sup>Department of Biomedical Engineering, Gachon University</p>
FP1-193	<p><b>Rapid Photonic Curing Effects of Xenon Flash Lamp on Sputtered AZO-Ag-AZO Multilayer TCO Films</b></p> <p>Yong Hyeok Seo<sup>1</sup>, Won Woo Lee<sup>1</sup>, Dong Gyun Kim<sup>1</sup>, Kirak Kim<sup>1</sup>, Yongmin Jeon<sup>2</sup>, Sang Jik Kwon<sup>1</sup>, and Eou-Sik Cho<sup>1</sup></p> <p><sup>1</sup>Department of Electronic Engineering, Gachon University, <sup>2</sup>Department of Biomedical Engineering, Gachon University</p>
FP1-194	<p><b>Vacancy Engineering of Copper Iodide Semiconductor for High-performance p-Type Thin-film Transistors</b></p> <p>Hyun-Ah Lee<sup>1</sup>, Hyo-Won Jang<sup>1</sup>, Tae In Kim<sup>2</sup>, Ick-Joon Park<sup>3</sup>, and Hyuck-In Kwon<sup>1</sup></p> <p><sup>1</sup>Chung-Ang University, <sup>2</sup>Inha University, <sup>3</sup>Joongbu University</p>
FP1-195	<p><b>Influence of Oxygen Content on Output Characteristics of IGZO TFTs during High Current Operation</b></p> <p>Chae-Eun Oh<sup>1</sup>, Dong-Ho Lee<sup>1</sup>, Myeong-Ho Kim<sup>2</sup>, Kyoung Seok Son<sup>2</sup>, Jun-Hyung Lim<sup>2</sup>, Sang-Hun Song<sup>1</sup>, and Hyuck-In Kwon<sup>1</sup></p> <p><sup>1</sup>Chung-Ang University, <sup>2</sup>Samsung Display Co., Ltd.</p>
FP1-196	<p><b>Effects of Al<sub>2</sub>O<sub>3</sub> Surface Passivation on the Radiation Stability of IGTO Thin Film Transistors under High-Energy X-ray Irradiation</b></p> <p>Hyun-Ah Lee<sup>1</sup>, Hyo-Won Jang<sup>1</sup>, Kie Yatsu<sup>1</sup>, Ick-Joon Park<sup>2</sup>, and Hyuck-In Kwon<sup>1</sup></p> <p><sup>1</sup>Chung-Ang University, <sup>2</sup>Joongbu University</p>
FP1-197	<p><b>A Study on the Incorporation Behavior of In, Ga, and Zn in IGZO Thin Films according to Sub-Cycle Ratio during Thermal Atomic Layer Deposition</b></p> <p>Hanseok Jeong<sup>1</sup>, Soo Min Yoo<sup>1</sup>, Minki Choe<sup>2</sup>, In-Hwan Baek<sup>2</sup>, and Woojin Jeon<sup>1</sup></p> <p><sup>1</sup>Department of Advanced Materials Engineering for Information and Electronics, and Integrated Education Program for Frontier Science &amp; Technology (BK21 Four), Kyung Hee University, <sup>2</sup>Department of Chemical Engineering, Inha University</p>
FP1-198	<p><b>High-Performance p-Type Tellurium Thin Film Transistors with Organic-Inorganic Hybrid Passivation Layer</b></p> <p>Jong-Sang Oh<sup>1</sup>, Joon-Young Lee<sup>1</sup>, Seung-Hyun Lim<sup>1</sup>, Tae In Kim<sup>2</sup>, Ick-Joon Park<sup>3</sup>, and Hyuck-In Kwon<sup>1</sup></p> <p><sup>1</sup>Chung-Ang University, <sup>2</sup>Inha University, <sup>3</sup>Joongbu University</p>
FP1-199	<p><b>TFT Off Current Stabilization Method : Using Machine Learning ANN</b></p> <p>Won Woo Lee<sup>1</sup>, Hyun Woo Kim<sup>1</sup>, Yong Hyeok Seo<sup>1</sup>, Yun Hyeok Jeong<sup>1</sup>, Yongmin Jeon<sup>2</sup>, Sang Jik Kwon<sup>1</sup>, Zong Woo Geem<sup>3</sup>, and Eou-Sik Cho<sup>1</sup></p> <p><sup>1</sup>Department of Electronic Engineering, Gachon University, <sup>2</sup>Department of Biomedical Engineering, Gachon University, <sup>3</sup>Department of Smart City, Gachon University</p>
FP1-200	<p><b>Surface Pre-treatment in Molybdenum Disulfide Atomic Layer Deposition for Next-generation Channel Materials</b></p> <p>Soo Min Yoo<sup>1</sup>, Hanseok Jeong<sup>1</sup>, Minki Choe<sup>2</sup>, In-Hwan Baek<sup>2</sup>, and Woojin Jeon<sup>1</sup></p> <p><sup>1</sup>Department of Advanced Materials Engineering for Information and Electronics, and Integrated Education Program for Frontier Science &amp; Technology (BK21 Four), Kyung Hee University, <sup>2</sup>Department of Chemical Engineering, Inha University</p>

<p>FP1-201</p>	<p><b>Effects of Channel Width on Electrical Performance Degradation in IGZO TFTs under Self-heating Stresses</b>  Dong-Ho Lee<sup>1</sup>, Jin-Ha Hwang<sup>1</sup>, Myeong-Ho Kim<sup>2</sup>, Kyoung Seok Son<sup>2</sup>, Jun-Hyung Lim<sup>2</sup>, Sang-Hun Song<sup>1</sup>, and Hyuck-In Kwon<sup>1</sup>  <sup>1</sup>Chung-Ang University, <sup>2</sup>Samsung Display Co., Ltd.</p>
<p>FP1-202</p>	<p><b>Enhancing Stability of CsPbBr<sub>3</sub> Perovskite Quantum Dots via Atomic Layer Deposition for Light-Emitting Diodes</b>  Min Ju Kim<sup>1</sup>, Ju Young Woo<sup>2</sup>, and Seong-Yong Cho<sup>1</sup>  <sup>1</sup>Department of Photonics and Nanoelectronics, Hanyang University, <sup>2</sup>Digital Transformation R&amp;D Department, KITECH</p>
<p>FP1-203</p>	<p><b>Self-Assembled Monolayer에 의한 금속-산화물 반도체 사이의 Metal Oxide 형성 억제와 접촉 저항 개선</b>  Dowan Kang<sup>1</sup>, Juyoung Yun<sup>1</sup>, and Yoonyoung Chung<sup>1,2,3</sup>  <sup>1</sup>Department of Electrical Engineering, POSTECH, <sup>2</sup>Department of Semiconductor Engineering, POSTECH, <sup>3</sup>Center for Semiconductor Technology Convergence, POSTECH</p>
<p>FP1-204</p>	<p><b>Device Feasibility and Process Optimization of Atomic-Layer Deposited Al Doped ZnO Thin Films as Electrodes for Oxide TFT Applications</b>  Ye-Jin Seo<sup>1</sup>, Young-Ha Kwon<sup>2</sup>, Nak-Jin Seong<sup>2</sup>, Kyu-Jeong Choi<sup>2</sup>, and Sung-Min Yoon<sup>1</sup>  <sup>1</sup>Kyung Hee University, <sup>2</sup>NCD Co., Ltd.</p>
<p>FP1-205</p>	<p><b>Ligand-Exchanged NiO Nanoparticles as a Hole Injection Layer of Quantum Dot LED</b>  Hyojun Lim<sup>1</sup>, Thi Huong Thao Dang<sup>1</sup>, Nayoon Lee<sup>1</sup>, Sunwoo Jin<sup>1</sup>, Van Khoe Vo<sup>1</sup>, Joon-Hyung Lee<sup>1</sup>, Byoung-Seong Jeong<sup>2</sup>, and Young-Woo Heo<sup>1</sup>  <sup>1</sup>School of Materials Science and Engineering, Kyungpook National University, <sup>2</sup>Department of Hydrogen and Renewable Energy, Kyungpook National University</p>
<p>FP1-206</p>	<p><b>Improved Light Extraction Efficiency and Color Control in Quantum Dot LEDs Using Metal-Insulator-Metal (MIM) Structure</b>  Eun Sang Lee<sup>1</sup>, Hyuntai Kim<sup>2</sup>, and Seong-Yong Cho<sup>1</sup>  <sup>1</sup>Department of Photonics and Nanoelectronics, Hanyang University, <sup>2</sup>Department of Electronic and Electrical Convergence Engineering, Hongik University</p>
<p>FP1-207</p>	<p><b>Enhanced QLED Performance through Improved Charge Balance Using Doped NiO as the Hole Injection Layer.</b>  Nayoon Lee<sup>1</sup>, Hyojun Lim<sup>1</sup>, Van Khoe Vo<sup>1</sup>, Thi Huong Thao Dang<sup>1</sup>, Byoung-Seong Jeong<sup>2</sup>, Joon-Hyung Lee<sup>1</sup>, and Young-Woo Heo<sup>1</sup>  <sup>1</sup>School of Materials Science and Engineering, Kyungpook National University, <sup>2</sup>Department of Hydrogen and Renewable Energy, Kyungpook National University</p>
<p>FP1-208</p>	<p><b>A Study on the Logarithmic Sensitivity of X-ray Detectors with Multiple Pinning Voltages</b>  Du Hee Lee, Nak won Yu, Jong Min Kim, and Hyun Chul Nah  Device Enabling Team, DB HiTek</p>
<p>FP1-209</p>	<p><b>Improvement of Uniformity on Spray-printed Organic Electrochemical Transistors with Thermally-assisted Reformation</b>  Dongyeol Seo, Donguk Kim, and Felix Sunjoo Kim  School of Chemical Engineering and Materials Science, Chung-Ang University</p>
<p>FP1-210</p>	<p><b>Demonstration of Vertically Stacked Dual-color Micro-LED Using CMOS-compatible Monolithic 3D Integration Technology for Ultra-high Resolution Display</b>  Hyunsu Kim, Juhyuk Park, Woo Jin Baek, and SangHyeon Kim  School of Electrical Engineering, KAIST</p>

FP1-211	<p><b>Metal Ion-Doped Metal-Oxide Dielectric and Semiconducting Films for Low-Voltage Operating Thin-Film Transistors</b></p> <p>Se-Ryong Park, Sang-Joon Park, and Tae-Jun Ha Department of Electronic Materials Engineering, Kwangwoon University</p>
FP1-212	<p><b>Resistive Random-access Memory Properties for Cu<sub>2</sub>CoSnS<sub>4</sub> Films on the ITO Glass via Direct Spin-coating Process</b></p> <p>Seo-young Jo, Taewon Jin, Gyubeen Kim, Yujin Choi, and Sung Hun Jin Department of Electronic Engineering, and I-Nanofab Center, Incheon National University</p>
FP1-213	<p><b>Low-Cost, Spin-On Dopant Based N-type MOSFET Implementation for Active Matrixed Micro-Light-Emitting Diode Display Operation</b></p> <p>Hanmin Kim, Hogeon Jeon, Chaeyeong Kim, Taeyeon Lee, Changsoo Park, and Sung Hun Jin Department of Electronic Engineering, and I-Nanofab Center, Incheon National University</p>
FP1-214	<p><b>Monolithic Integration of p-GaN/AlGaN/GaN Driving IC for Active-Matrix Micro-LEDs</b></p> <p>Hee Jae Oh, Jun Hyeok Lim, and Ho Young Cha Hongik University</p>
FP1-215	<p><b>Solvent Dependency on Copper-Iodide Film Formation via Dip-Coating and Their RRAM Properties</b></p> <p>Geun Lee, Da Han Lee, Tae Ho Kang, Tae Won Jin, Woo In Kim, and Sung Hun Jin Department of Electronic Engineering, and I-Nanofab Center, Incheon National University</p>

<p>FP1-216</p>	<p><b>Bismuth Doping Strategies in GeTe to Enhance Phase-change Transition</b>                  Chang Woo Lee<sup>1</sup>, Hyeonwook Lim<sup>1</sup>, Yeonwoo Seong<sup>1</sup>, and Mann-Ho Cho<sup>1,2</sup>  <sup>1</sup>Department of Physics, Yonsei University, <sup>2</sup>Department of System Semiconductor Engineering, Yonsei University</p>
<p>FP1-217</p>	<p><b>Selective Synthesis of Atomically-thin Semiconducting Materials and Its Electronics Applications</b>                  Seoungwoong Park<sup>1</sup>, Han Duk Song<sup>1</sup>, Suk Yong Jung<sup>1</sup>, Junwoo Kim<sup>1</sup>, Jaekwang Song<sup>2</sup>, and Chan-Jin Kim<sup>3</sup>  <sup>1</sup>RIST, <sup>2</sup>Semiconductor R&amp;D Center, Samsung Electronics Co., Ltd., <sup>3</sup>Seoul National University</p>
<p>FP1-218</p>	<p><b>Performance Enhancement of MoS<sub>2</sub> Transistor based on Metallic NbS<sub>2</sub> as a Local Bottom Gate Electrode</b>                  Hyun Young Seo<sup>1</sup> and Byungjin Cho<sup>1,2</sup>  <sup>1</sup>Department of Urban, Energy, and Environmental Engineering, Chungbuk National University, <sup>2</sup>Department of Advanced Material Engineering, Chungbuk National University</p>
<p>FP1-219</p>	<p><b>Electrochemical Doping of Metal Halide Perovskites</b>                  Yongjin Kim<sup>1</sup>, Dohyun Kim<sup>1</sup>, Eunje Park<sup>1</sup>, Jeongjae Lee<sup>2</sup>, Takhee Lee<sup>3</sup>, and Keehoon Kang<sup>1</sup>  <sup>1</sup>Department of Materials Science and Engineering, Seoul National University, <sup>2</sup>School of Earth and Environmental Sciences, Seoul National University, <sup>3</sup>Department of Physics and Astronomy, Seoul National University</p>
<p>FP1-220</p>	<p><b>MoS<sub>2</sub> Field Effect Transistor with Graphene-embedded Al<sub>2</sub>O<sub>3</sub> Gate Dielectric Structure</b>                  Eunjeong Cho<sup>1,2</sup> and Byungjin Cho<sup>1,2</sup>  <sup>1</sup>Department of Advanced Material Engineering, Chungbuk National University, <sup>2</sup>Department of Urban, Energy, and Environmental Engineering, Chungbuk National University</p>
<p>FP1-221</p>	<p><b>Molecular Level Modulation by Electrolyte Gating in Mixed SAM Molecular Vertical Junctions</b>                  Donguk Kim, Changjun Lee, Minwoo Song, Jongwoo Nam, Hyemin Lee, and Takhee Lee                  Department of Physics and Astronomy, Seoul National University</p>
<p>FP1-222</p>	<p><b>Exploring the Impact of Dimensional Engineering on the Reliability and Performance of Metal Halide Perovskite Field-Effect Transistors</b>                  Hyeonmin Choi, Joonha Jung, Yongjin Kim, Taehyun Kong, and Keehoon Kang                  Department of Materials Science and Engineering, Seoul National University</p>
<p>FP1-223</p>	<p><b>Human-muscle-inspired Single Fibre Actuator with Reversible Percolation</b>                  Kee Woong Oh, In Ho Kim, and Sang Ouk Kim                  Department of Materials Science &amp; Engineering, KAIST</p>
<p>FP1-224</p>	<p><b>High Rate and Large Capacity Supercapacitors by Three-dimensional Shape Engineering, Interfacial Gelation of Reduced Graphene Oxide</b>                  S. J. Cha, U. N. Maiti, and S. O. Kim                  KAIST</p>
<p>FP1-225</p>	<p><b>Highly Sensitive Multi-sensing Memristor based on CuBr Thin Film</b>                  Juyoung Jin<sup>1</sup>, Young-Seok Song<sup>1</sup>, Seungyeon Kim<sup>1</sup>, Jongwon Yoon<sup>3</sup>, and Tae-Wook Kim<sup>1,2</sup>  <sup>1</sup>Jeonbuk National University, <sup>2</sup>JBNU-KIST, <sup>3</sup>KIMS</p>
<p>FP1-226</p>	<p><b>Exploring the Interplay between Plasmonic Hot Electron-coupled Photoconductive Energy Conversion and Defect States in N-face GaN</b>                  Jihyang Park<sup>1</sup>, Kyoung Su Lee<sup>2</sup>, Jeechan Yoon<sup>1</sup>, Jina Bak<sup>1</sup>, Bolim You<sup>1</sup>, Eun Kyu Kim<sup>2</sup>, and Moonsang Lee<sup>1</sup>  <sup>1</sup>Department of Materials and Engineering, Inha University, <sup>2</sup>Department of Physics, Hanyang University</p>

FP1-227	<p><b>Metallic NbSe<sub>2</sub> Used for Van Der Waals Contacts to 2D WSe<sub>2</sub> Channel</b></p> <p>Hoseong Shin, Hyokwang Park, and WonJong Yoo SKKU Advanced Institute of Nano Technology, Sungkyunkwan University</p>
FP1-228	<p><b>Influence of Oxidation State on Voltage-controlled Magnetic Anisotropy</b></p> <p>Ji-Hyeon Yun<sup>1,2</sup>, Ji-won Yoon<sup>1,2</sup>, Hyun-jun Lee<sup>1,3</sup>, Si-yeol Lee<sup>1</sup>, Sang-Ho Lim<sup>2</sup>, and Seung-heon Chris Baek<sup>1</sup></p> <p><sup>1</sup>Center for Spintronics, KIST, <sup>2</sup>Department of Materials Science and Engineering, Korea University, <sup>3</sup>Department of Electrical Engineering, Korea University</p>
FP1-229	<p><b>Enhancing Spin-orbit Torque in Pt and W Multilayers</b></p> <p>Ji-won Yoon<sup>1,2</sup>, Hyun-jun Lee<sup>1,3</sup>, Ji-hyeon Yun<sup>1,2</sup>, Si-yeol Lee<sup>1</sup>, Sang-ho Lim<sup>2</sup>, and Seung-heon Chris Baek<sup>1</sup></p> <p><sup>1</sup>Center for Spintronics, KIST, <sup>2</sup>Department of Materials Science and Engineering, Korea University, <sup>3</sup>Department of Electrical Engineering, Korea University</p>
FP1-230	<p><b>Tunneling-Based Source Follower for Low Noise Image Sensor</b></p> <p>Ki Yeong Kim<sup>1</sup>, Hyangwoo Kim<sup>1</sup>, Kyoungwan Oh<sup>1</sup>, Hyeongseok Yoo<sup>1</sup>, Sungbond Park<sup>2</sup>, Jaekyu Lee<sup>2</sup>, Chang-Ki Baek<sup>1</sup>, and Ju Hong Park<sup>1</sup></p> <p><sup>1</sup>POSTECH, <sup>2</sup>Samsung Electronics Co., Ltd.</p>
FP1-231	<p><b>Piezoresistive Ti<sub>3</sub>C<sub>2</sub>T<sub>x</sub> MXene/ Graphene Nanoribbon Composite for Highly Accurate Pressure Sensor</b></p> <p>Chan Woo Lee, Ho Jin Lee, and Sang Ouk Kim Department of Material Science &amp; Engineering, KAIST</p>
FP1-232	<p><b>Artificial Sensory Electronic Skin Devices</b></p> <p>Jiyong Yoon, Yewon Kim, and Donghee Son Department of Electrical and Computer Engineering, Sungkyunkwan University</p>
FP1-233	<p><b>Charge Transfer Doping of 2D Perovskites via Bulk Incorporation of Organic Molecular Dopants</b></p> <p>Jonghoon Lee<sup>1</sup>, Jeongjae Lee<sup>2</sup>, Kyeong-Yoon Baek<sup>1</sup>, Heebeom Ahn<sup>1</sup>, Yongjin Kim<sup>3</sup>, Hyungbin Lim<sup>1</sup>, Yeeun Kim<sup>1</sup>, Jaeyong Woo<sup>1</sup>, Keehoon Kang<sup>3</sup>, and Takhee Lee<sup>1</sup></p> <p><sup>1</sup>Department of Physics and Astronomy, Seoul National University, <sup>2</sup>School of Earth and Environmental Sciences, Seoul National University, <sup>3</sup>Department of Materials Science and Engineering, Seoul National University</p>
FP1-234	<p><b>Broad-range Modulation of Guest-species Interactions in MoS<sub>2</sub> Transistors for Electrochemical Phase Transitions</b></p> <p>Jaeun Kwon<sup>1</sup>, Hanbin Cho<sup>2</sup>, and Joonki Suh<sup>1,2</sup></p> <p><sup>1</sup>Graduate School of Semiconductor Materials and Devices Engineering, UNIST, <sup>2</sup>Department of Materials Science and Engineering, UNIST</p>
FP1-235	<p><b>Effective Lubricating Effect of OD Nanodiamonds for Highly Bendable and Stretchable Graphene Liquid Crystalline Fibers</b></p> <p>Jin-Hyo Kim, Jin Goo Kim, and Sang Ouk Kim Department of Material Science &amp; Engineering, KAIST</p>
FP1-236	<p><b>Enhanced Electrostatic Controllability of MoS<sub>2</sub> FETs Using Dual Gate Structure</b></p> <p>Habin Baek<sup>1</sup>, Kyungmin Ko<sup>2</sup>, Chanho Lee<sup>2</sup>, and Joonki Suh<sup>1,2</sup></p> <p><sup>1</sup>Graduate School of Semiconductor Materials and Devices Engineering, UNIST, <sup>2</sup>Department of Materials Science and Engineering, UNIST</p>
FP1-237	<p><b>The Flow Field-flow Fractionation Based Size Selection Methodology Used as Effective Wide-range Size Separation for Graphene Oxide</b></p> <p>J. U. Jang, H. J. Choi, and S. O. Kim Department of Material Science &amp; Engineering, KAIST</p>

FP1-238	<p><b>Pt-Ta Multilayer Channels for Energy Efficient Spin-orbit Torque MRAM</b></p> <p>Lee Hyun-jun<sup>1,2</sup>, Yoon Ji-won<sup>1,3</sup>, Yun Ji-hyeon<sup>1,3</sup>, Lee Si-yeol<sup>1</sup>, B.K. Ju<sup>2</sup>, and Seung-heon Chris Baek<sup>1</sup></p> <p><sup>1</sup>Center for Spintronics, KIST, <sup>2</sup>Department of Electrical Engineering, Korea University, <sup>3</sup>Department of Materials Science and Engineering, Korea University</p>
FP1-239	<p><b>텅스텐 이황화물 수직 이종구조의 무질서와 쿨롱 상호작용이 금속-절연체 전이에 미치는 영향</b></p> <p>Hyungyu Choi, Nasir Ali, Inhee Jung, and Won Jong Yoo</p> <p>SKKU Advanced Institute of Nano Technology, Sungkyunkwan University</p>
FP1-240	<p><b>Effect of RTA Process on Heavy Metal/CoFeB/MgO Heterostructures for P-MTJ</b></p> <p>Si-yeol Lee<sup>1</sup>, Ji-won Yoon<sup>1,2</sup>, Hyun-jun Lee<sup>1,3</sup>, Ji-hyeon Yun<sup>1,2</sup>, and Seung-heon Chris Baek<sup>1</sup></p> <p><sup>1</sup>Center for Spintronics, KIST, <sup>2</sup>Department of Materials Science and Engineering, Korea University, <sup>3</sup>Department of Electrical Engineering, Korea University</p>
FP1-241	<p><b>Developing Advanced Interfacial Phase Change Materials with Selectively Modulating Covalency of the Superlattice</b></p> <p>Hyeonwook Lim<sup>1</sup>, Chang-woo Lee<sup>1</sup>, and Mann-Ho Cho<sup>1,2</sup></p> <p><sup>1</sup>Department of Physics, Yonsei University, <sup>2</sup>Department of System Semiconductor Engineering, Yonsei University</p>
FP1-242	<p><b>Imitation on Signal Degradation Procedure in Neural System with Ferroelectric Neuromorphic Transistor via Photocrosslinking</b></p> <p>Young-Seok Song<sup>1</sup>, Dae-Hong Kim<sup>1</sup>, Juyoung Jin<sup>1</sup>, Hyeonji Joo<sup>1</sup>, Minyoung Seo<sup>1</sup>, Sneha Bhise<sup>1</sup>, and Tae-Wook Kim<sup>1,2</sup></p> <p><sup>1</sup>Jeonbuk National University, <sup>2</sup>Jeonbuk National University-KIST</p>
FP1-243	<p><b>Enhancing the Electrical Properties of Thin-Film Transistors through the Incorporation of Two-Dimensional Metal Nanosheets into the Semiconducting Channel</b></p> <p>Hyeonji Joo<sup>1</sup>, Young-Seok Song<sup>1</sup>, Seungyeon Kim<sup>1</sup>, and Tae-Wook Kim<sup>1,2</sup></p> <p><sup>1</sup>Jeonbuk National University, <sup>2</sup>Jeonbuk National University-KIST</p>
FP1-244	<p><b>Tilt-engineered Molecular-scale Selector Capable of Enhancing Pattern Recognition Accuracy</b></p> <p>Jung Sun Eo<sup>1</sup>, Jaeho Shin<sup>2</sup>, Takkyeong Jeon<sup>1</sup>, Jingon Jang<sup>1</sup>, and Gunuk Wang<sup>1</sup></p> <p><sup>1</sup>KU-KIST Graduate School of Converging Science &amp; Technology, Korea University, <sup>2</sup>Department of Chemistry, Rice University</p>
FP1-245	<p><b>Low Temperature and Solution-processed Sol-gel Aluminium Oxide Charge-trap Layer for Floating Gate Memory Transistors and Their Artificial Synapse Application</b></p> <p>Sneha Bhise<sup>1</sup>, Young-Seok Song<sup>1</sup>, Dae-Hong Kim<sup>1</sup>, and Tae-Wook Kim<sup>1,2</sup></p> <p><sup>1</sup>Jeonbuk National University, <sup>2</sup>Jeonbuk National University-KIST</p>
FP1-246	<p><b>Atomic Reconstruction of Transition Metal Dichalcogenides Hetero-bilayers with Large Lattice Mismatch</b></p> <p>Seongchul Hong<sup>1</sup>, Ji-Hwan Baek<sup>1</sup>, Yunyeong Chang<sup>1</sup>, Hong M. Nguyen<sup>2</sup>, Changheon Kim<sup>1,3</sup>, Yeonjoon Jung<sup>1</sup>, Hyeongseok Lee<sup>1</sup>, Kenji Watanabe<sup>4</sup>, Takashi Taniguchi<sup>4</sup>, Jangyup Son<sup>3</sup>, Hyeonsik Cheong<sup>2</sup>, Miyoung Kim<sup>1</sup>, and Gwan-Hyoung Lee<sup>1</sup></p> <p><sup>1</sup>Seoul National University, <sup>2</sup>Sogang University, <sup>3</sup>KIST, <sup>4</sup>National Institute for Materials Science</p>
FP1-247	<p><b>2D Reliable Electromagnetic Interference (EMI) Shielding Properties of 2D Copper@Copper Oxide Core-Shell Nanosheets Film</b></p> <p>Minyoung Seo<sup>1</sup>, Seungyeon Kim<sup>1</sup>, and Tae-Wook Kim<sup>1,2</sup></p> <p><sup>1</sup>Jeonbuk National University, <sup>2</sup>Jeonbuk National University-KIST</p>
FP1-248	<p><b>Double-sided Charge Transfer Doping Method for 2D WSe<sub>2</sub> FET</b></p> <p>Kwangro Lee<sup>1</sup>, Brian S. Y. Kim<sup>2,3</sup>, Hoseong Shin<sup>1</sup>, James Hone<sup>2</sup>, and Won Jong Yoo<sup>1</sup></p> <p><sup>1</sup>Department of Nano Science and Technology, SKKU Advanced Institute of Nanotechnology, Sungkyunkwan University, <sup>2</sup>Department of Mechanical Engineering, Columbia University, <sup>3</sup>Department of Materials Science and Engineering, University of Arizona</p>



FP1-249	<p><b>Laterally Stitched 2D Metal–semiconductor Junction with Low Contact Resistance Fabricated by Pd-to-PdTe<sub>2</sub> Transition</b></p> <p>Jaewoong Joo, Hyeong Sung, Hyunjun Kim, Yoona Kim, Byeongchan Kim, and Gwan-Hyoung Lee Department of Materials Science and Engineering, Seoul National University</p>
FP1-250	<p><b>Spintronic Artificial Synapse based on Voltage-controlled Magnetic Easy-axis</b></p> <p>Jimin Jeong<sup>1</sup>, Yun-ho Jang<sup>2</sup>, Min-Gu Kang<sup>1</sup>, Seungeon Hwang<sup>2</sup>, Jongsun Park<sup>2</sup>, and Byong-Guk Park<sup>1</sup> <sup>1</sup>Department of Materials Science and Engineering, KAIST, <sup>2</sup>Department of Electrical Engineering, Korea University</p>
FP1-251	<p><b>Lateral Junctions of Twisted and Zero-twisted Transition Metal Dichalcogenide Heterobilayers via Atomic Reconstruction</b></p> <p>Hyeong Seok Lee, Ji-Hwan Baek, Seong Chul Hong, and Gwan-Hyoung Lee Department of Material Science and Engineering, Seoul National University</p>
FP1-252	<p><b>Multi-terminal Floating Gate Memristor in Van Der Waals Heterostructures for Unsupervised Learning</b></p> <p>Mi Hyang Park and Woo Jong Yu Department of Electrical and Computer Engineering, Sungkyunkwan University</p>
FP1-253	<p><b>Wafer-scale Integration of Logic Circuits Using 2D-MoS<sub>2</sub> FETs with a Buried-Gate Structure</b></p> <p>Ju-Ah Lee<sup>1,2</sup>, Jongwon Yoon<sup>1</sup>, and Yonghun Kim<sup>1</sup> <sup>1</sup>Department of Energy &amp; Electronic Materials, Surface &amp; Nano Materials Division, KIMS, <sup>2</sup>School of Materials Science and Engineering, Pusan National University</p>
FP1-254	<p><b>One-dimensional WO<sub>x</sub>-Based Physical Reservoir Computing for Wearable Neuromorphic Applications</b></p> <p>Hyojin Shin<sup>1</sup>, Haein Cho<sup>1</sup>, Dae-Hong Kim<sup>2</sup>, Tae-Wook Kim<sup>2</sup>, and Gunuk Wang<sup>1</sup> <sup>1</sup>Korea University, <sup>2</sup>Jeonbuk National University</p>
FP1-255	<p><b>Stochastic P-bits Generation by Spin-Orbit Torques in Magnetic Trilayers</b></p> <p>Donghyeon Han<sup>1</sup>, Chaehyeon Shin<sup>2</sup>, Seok-Jong Kim<sup>1</sup>, Yunho Jang<sup>2</sup>, Geun-Hee Lee<sup>1</sup>, Jeongchun Ryu<sup>1</sup>, Makoto Kohda<sup>3</sup>, Junsaku Nitta<sup>3</sup>, Kab-Jin Kim<sup>1</sup>, Jongsun Park<sup>2</sup>, Kyung-Jin Lee<sup>1</sup>, and Byong-Guk Park<sup>1</sup> <sup>1</sup>KAIST, <sup>2</sup>Korea University, <sup>3</sup>Tohoku University</p>
FP1-256	<p><b>Gate-injection Synaptic Transistors based on 2D Van Der Waals Heterojunction with Band Offset</b></p> <p>Won-seok Choi and Gwan-Hyoung Lee Department of Materials Science and Engineering, Seoul National University</p>
FP1-257	<p><b>Inkjet-printed Stretchable Thin-film Transistors with Van Der Waals Heterostructures</b></p> <p>Jiwoo Yang<sup>1,3</sup>, Jongsung Kim<sup>1</sup>, Kyungjune Cho<sup>1</sup>, Takhee Lee<sup>2</sup>, Yongtaek Hong<sup>3</sup>, and Seungjun Chung<sup>1</sup> <sup>1</sup>Soft Hybrid Materials Research Center, KIST, <sup>2</sup>Department of Physics and Astronomy, and Institute of Applied Physics, Seoul National University, <sup>3</sup>Department of Electrical &amp; Computer Engineering, Seoul National University</p>
FP1-258	<p><b>High-Performance Near-Infrared Photodetection via Gate Modulation in GeAs/ReS<sub>2</sub> Heterostructures</b></p> <p>Byung Hoon Lee<sup>1,3</sup>, Jung Ho Kim<sup>1,2</sup>, and Ki Kang Kim<sup>1,3</sup> <sup>1</sup>Department of Energy Science, Sungkyunkwan University, <sup>2</sup>Department of Materials Science and Metallurgy, University of Cambridge, <sup>3</sup>CINAP, IBS</p>
FP1-259	<p><b>Reconfigurable VO<sub>2</sub> Mott Memristor for Neuromorphic Electronics</b></p> <p>Gwaneong Park, Sanghyeon Choi, and Gunuk Wang KU-KIST Graduate School of Converging Science and Technology, Korea University</p>

FP1-260	<p><b>Reconfigurable Two-dimensional Floating Gate Field-effect Transistors for Highly Integrated In-memory Computing</b></p> <p>June-Chul Shin<sup>1,5</sup>, Taegyun Park<sup>1,5</sup>, Dong Hoon Shin<sup>1,5</sup>, Hyun-Young Choi<sup>1,5</sup>, Kenji Watanabe<sup>2</sup>, Takashi Taniguchi<sup>3</sup>, Yeonwoong Jung<sup>4</sup>, Cheol Seong Hwang<sup>1</sup>, and Gwan-Hyoung Lee<sup>1</sup></p> <p><sup>1</sup>Department of Materials Science and Engineering, Seoul National University, <sup>2</sup>Research Center for Functional Materials, National Institute for Materials Science, <sup>3</sup>International Center for Materials Nanoarchitectonics, National Institute for Materials Science</p>
FP1-261	<p><b>Inkjet-Printed Polyelectrolyte-coated BaTiO<sub>3</sub> Based Capacitor Arrays for Physical Unclonable Function</b></p> <p>Woongki Hong<sup>1</sup>, Murali Bissannagari<sup>2</sup>, Donghoon Lee<sup>1</sup>, and Hongki Kang<sup>1</sup></p> <p><sup>1</sup>Department of Electrical Engineering and Computer Science, DGIST, <sup>2</sup>Information and Communication Research Center, DGIST</p>
FP1-262	<p><b>Tailoring Thermoelectric Properties of Large-Area MoS<sub>2</sub> Films with Effective Doping Strategies</b></p> <p>Sooyeon Moon<sup>1,2</sup>, Kyungjune Cho<sup>1</sup>, and Seungjun Chung<sup>1</sup></p> <p><sup>1</sup>Soft Hybrid Materials Research Center, KIST, <sup>2</sup>Department of Material Science and Engineering, Seoul National University</p>
FP1-263	<p><b>Dynamic Response Analysis of 2D TMD Channel FETs with Compact Modeling</b></p> <p>Yeon Su Kim and Gyu-Tae Kim</p> <p>School of Electrical Engineering, Korea University</p>
FP1-264	<p><b>Dual-gate Graphene Field-effect Transistor with a Thin HfO<sub>2</sub> Insulator</b></p> <p>Dong Yeong Kim, Jun woo Kim, Young Jun Rho, and Sang Hyun Lee</p> <p>School of Chemical Engineering, Chonnam National University</p>
FP1-265	<p><b>금속-ReS<sub>2</sub> 엣지 접촉시 발생하는 비등방성 전하 수송</b></p> <p>Hyokwang Park<sup>1</sup>, Myeongjin Lee<sup>1</sup>, Xinbiao Wang<sup>1</sup>, Nasir Ali<sup>1</sup>, Kenji Watanabe<sup>2</sup>, Takashi Taniguchi<sup>2</sup>, Euyheon Hwang<sup>1</sup>, and Won Jong Yoo<sup>1</sup></p> <p><sup>1</sup>SKKU Advanced Institute of Nano-Technology, Sungkyunkwan University, <sup>2</sup>National Institute for Materials Science</p>
FP1-266	<p><b>Contact Resistance Effects on Vertical Carrier Density Profile and Surface Defect Density of WSe<sub>2</sub> Multilayers</b></p> <p>Dahyun Choi, Eunji Sim, Young-Hye Son, and Min-Kyu Joo</p> <p>Department of Applied Physics, Sookmyung Women's University</p>
FP1-267	<p><b>Modulation of Interlayer Resistance Driven by Vertical Conducting Channel Migration within Multilayer WSe<sub>2</sub></b></p> <p>Yeongseo Han, Minji Chae, Suin Seong, Hyejin Kim, and Min-Kyu Joo</p> <p>Department of Applied Physics, Sookmyung Women's University</p>
FP1-268	<p><b>Electrical Characterization of Metal-Hexagonal Boron Nitride-Graphene Multilayers for Nanoscale Light Source Applications</b></p> <p>Seunghwan Moon<sup>1,2</sup>, Young-Min Kim<sup>1,2</sup>, and Jong-Souk Yeo<sup>1</sup></p> <p><sup>1</sup>School of Integrated Technology, College of Computing, Yonsei University, <sup>2</sup>BK21 Graduate Program in Intelligent Semiconductor Technology, Yonsei University</p>
FP1-269	<p><b>Development of CMOS-integrated TiOx Memristor Array for In-memory Computing</b></p> <p>Yeon Seo An<sup>1</sup>, Jingon Jang<sup>1</sup>, Dowon Kim<sup>3</sup>, Byunggeun Lee<sup>3</sup>, and Gunuk Wang<sup>1,2</sup></p> <p><sup>1</sup>KU-KIST Graduate School of Converging Science and Technology, <sup>2</sup>Department of Integrative Energy Engineering, Korea University</p>
FP1-270	<p><b>Three-terminal Vertical HZO Ferroelectric Synapse for High-performance and Energy-efficient Pattern Recognition</b></p> <p>Yongjun Kim<sup>1</sup>, Seonghoon Jang<sup>1</sup>, Jihoon Jeon<sup>3</sup>, Seonggil Ham<sup>1</sup>, Sanghyeon Choi<sup>1</sup>, Seong-Keun Kim<sup>3</sup>, Jingon Jang<sup>1</sup>, and Gunuk Wang<sup>1,2,4</sup></p> <p><sup>1</sup>KU-KIST Graduate School of Converging Science and Technology, <sup>2</sup>Department of Integrative Energy Engineering, Korea University, <sup>3</sup>Electronic Materials Research Center, KIST, <sup>4</sup>Center for Neuromorphic Engineering, KIST</p>
FP1-271	<p><b>Development of All-solid State Organic Electrochemical Transistor for Neuromorphic Applications</b></p> <p>Chung-Bi Han<sup>1</sup> and Gunuk Wang<sup>2</sup></p> <p><sup>1</sup>KU-KIST Graduate School of Converging Science &amp; Technology, Korea University, <sup>2</sup>Department of Integrative Energy Engineering, Korea University</p>

FP1-272	<p><b>Modulation of Metal-insulator Transition in Single-crystalline VO<sub>2</sub> Films for Switching Device Applications</b></p> <p>Ki Hoon Shin<sup>1</sup>, Sumin Jeong<sup>1</sup>, Eunmin Kim<sup>1</sup>, Woong-Ki Hong<sup>2</sup>, and Jung Inn Sohn<sup>1</sup></p> <p><sup>1</sup>Division of Physics and Semiconductor Science, Dongguk University, <sup>2</sup>Center for Scientific Instrumentation, KBSI</p>
FP1-273	<p><b>Strain-mediated Excitonic Behaviors at the Interface of Heterostructured 2D Transition Metal Dichalcogenides</b></p> <p>Eunmin Kim<sup>1</sup>, Ki Hoon Shin<sup>1</sup>, Sangyeon Pak<sup>2</sup>, and Jung Inn Sohn<sup>1</sup></p> <p><sup>1</sup>Division of Physics and Semiconductor Science, Dongguk University, <sup>2</sup>School of Electronics and Electrical Engineering, Hongik University</p>
FP1-274	<p><b>Lateral-dual Gate CNT FET for Physical Unclonable Function Applications</b></p> <p>Jeong Yeon Im<sup>1</sup>, Hyo-In Yang<sup>1</sup>, Hanbin Lee<sup>1</sup>, Jeonghee Ko<sup>1</sup>, Yulim An<sup>1</sup>, GyeongSu Min<sup>1</sup>, So Jeong Park<sup>1</sup>, Jun-Ho Jang<sup>1</sup>, Dong Myong Kim<sup>1</sup>, Dae Hwan Kim<sup>1</sup>, Jong-Ho Bae<sup>1</sup>, Min-Ho Kang<sup>2</sup>, and Sung-Jin Choi<sup>1</sup></p> <p><sup>1</sup>School of Electrical Engineering, Kookmin University, <sup>2</sup>Department of Nano-process, NNFC</p>
FP1-275	<p><b>Van Der Waals Epitaxially-grown Molecular Crystal Dielectric <math>\alpha</math>-Sb<sub>2</sub>O<sub>3</sub> for 2D Electronics</b></p> <p>Huije Ryu<sup>2</sup>, Hyunjun Kim<sup>1</sup>, Jae Hwan Jeong<sup>1</sup>, Byeong Chan Kim<sup>1</sup>, and Gwan-Hyoung Lee<sup>1</sup></p> <p><sup>1</sup>Department of Materials Science and Engineering, Seoul National University, <sup>2</sup>New Material Lab, SAIT, Samsung Electronics Co., Ltd.</p>
FP1-276	<p><b>Development of Ferroelectric Field-Effect Transistor Using a Stack of Halide Perovskite Channel and HZO Thin Film for Neuromorphic Electronics</b></p> <p>Donghyeok Kim<sup>1</sup>, Young ran Park<sup>1</sup>, Chanhyeok Kim<sup>1</sup>, Jihoon Jeon<sup>3</sup>, Seong Keun Kim<sup>3</sup>, Hanul Min<sup>1,2</sup>, and Gunuk Wang<sup>1,2</sup></p> <p><sup>1</sup>KU-KIST Graduate School of Converging Science and Technology, Korea University, <sup>2</sup>Department of Integrative Energy Engineering, Korea University, <sup>3</sup>Electronic Materials Research Center, KIST</p>
FP1-278	<p><b>TMDs/Si Heterojunction Photodetectors: A Step towards High-Performance Photodetector</b></p> <p>Beomsu Jo, Singri Ramu, Sung Hyeon Cha, and Young Lae Kim</p> <p>Department of Electronic Engineering, Gangneung-Wonju University</p>
FP1-279	<p><b>Photon-Based Radiation Exposure Study on Transparent Conducting Oxide Semiconductor Operating in Radiation-Rich Environments</b></p> <p>Junho Noh and Byoungdeog Choi</p> <p>Department of Electrical and Computer Engineering, Sungkyunkwan University</p>
FP1-280	<p><b>Microwave Annealed High Performance a-IGTO Thin Film Transistor</b></p> <p>Sungsoo Park and Byoungdeog Choi</p> <p>Department of Electrical and Computer Engineering, Sungkyunkwan University</p>
FP1-281	<p><b>Electrical Analysis of MoS<sub>2</sub> FET on HZO Film</b></p> <p>In Kyu Yoon<sup>1</sup>, Ki Seok Heo<sup>1</sup>, Dong Hyun Kim<sup>1</sup>, Jung Chun Kim<sup>1</sup>, Sang Hyeok Kim<sup>1</sup>, So Mi Lee<sup>1</sup>, Seung Gyu Lee<sup>1</sup>, YeChan Jung<sup>1</sup>, Yun Hye Jang<sup>1</sup>, Jiae Jeong<sup>2</sup>, Jiyong Woo<sup>2</sup>, and Jae Woo Lee<sup>1</sup></p> <p><sup>1</sup>Department of Electronics &amp; Information Engineering, Korea University, <sup>2</sup>Department of Electronics Engineering, Kyungpook National University</p>
FP1-282	<p><b>Shell Thickness Dependence of Strain Profile and Electronic Structure of InP-Based Colloidal Quantum Dots</b></p> <p>Jin Hyong Lim and Nobuya Mori</p> <p>Graduate School of Engineering, Osaka University</p>
FP1-283	<p><b>Complementary 2D Tunnel FETs with Extremely Asymmetric Dual-barrier Heterostructures</b></p> <p>Hanbin Cho<sup>1</sup>, Seonguk Yang<sup>1</sup>, Donggyu Park<sup>2</sup>, and Joonki Suh<sup>1,2</sup></p> <p><sup>1</sup>Department of Materials Science and Engineering, UNIST, <sup>2</sup>Graduate School of Semiconductor Materials and Devices Engineering, UNIST</p>
FP1-284	<p><b>2-dimensional High-sensitivity Gas Molecule Detector with Variable Metal/Semiconductor Junction Schottky Barrier</b></p> <p>Ji Hun Sim and Woo Jong Yu</p> <p>Department of Electrical and Computer Engineering, Sungkyunkwan University</p>

FP1-285	<p><b>Insertion of an Interfacial Layer for Schottky Barrier Modulation in RRAM Using Finite Element Method</b></p> <p>Sagar Khot, Dongmyung Jung, and Yongwoo Kwon Department of Materials Science and Engineering, Hongik University</p>
FP1-286	<p><b>Single-ended Sense Amplifier with Offset Cancellation</b></p> <p>Kee Won Kwon and Jin-Gon Oh Sungkyunkwan University</p>
FP1-287	<p><b>Self-enabled Write Assist Cells for High-density SRAM in Resistance Dominated Technology Node</b></p> <p>Minjune Yeo<sup>1</sup>, Keonhee Cho<sup>2</sup>, Seung Jae Yei<sup>1</sup>, and Seong-Ook Jung<sup>1</sup> <sup>1</sup>Yonsei University, <sup>2</sup>Samsung Electronics Co., Ltd.</p>
FP1-288	<p><b>Development and Optimization of Ferroelectric Hafnium Oxide Thin Film Fabrication Processes</b></p> <p>Yu Jin Jeong and Keon Jae Lee Department of Materials Sciences and Engineering, KAIST</p>
FP1-289	<p><b>유기물 기반 비휘발성 전하 포획형 메모리 두께 증가에 따른 전기적 특성에 관한 연구</b></p> <p>Jun Hyup Jin, Ji In Kim, In Su Park, Ji Ho Yu, Nam Ki Hwang, and Min Ju Kim Department of Foundry Engineering, Dankook University</p>
FP1-290	<p><b>피드백 전계효과 트랜지스터의 시냅스 동작 특성 연구</b></p> <p>신연우, 조경아, 김상식 고려대학교 전기전자공학과</p>
FP1-291	<p><b>Threshold Switching – Phase Change Memory (TS-PCM), which Simultaneously Achieves the Plasticity of Neurons and Synapses</b></p> <p>Sang Hyun Sung, Kyung Bae Kim, and Keon Jae Lee Department of Materials Sciences and Engineering, KAIST</p>
FP1-292	<p><b>A Study on the Sense Amplifier Scheme of eFuse OTP IP</b></p> <p>Heon Park, Hwang-gon Jeon, Ji-hye Jang, Tae-ho Yeom, Dong-shin Kim, and Sun-ha Hwang SK hynix system ic</p>
FP1-293	<p><b>Unidentified Phase Transition of Elemental Tellurium in the Ovonic Threshold Selector Device</b></p> <p>Namwook Hur<sup>1</sup>, Seunghwan Kim<sup>1</sup>, Sohui Yoon<sup>1</sup>, Changhwan Kim<sup>1</sup>, and Joonki Suh<sup>1,2</sup> <sup>1</sup>Department of Materials Science and Engineering, UNIST, <sup>2</sup>Graduate School of Semiconductor Materials and Devices Engineering, UNIST</p>
FP1-294	<p><b>Process Variability Analysis in 3D NAND Macaroni Structures: Machine Learning for Predicting Program and Erase Characteristics</b></p> <p>Hwanhee Chan Choi<sup>1</sup>, Jangkyu Lee<sup>1</sup>, and Hyungcheol Shin<sup>1,2</sup> <sup>1</sup>Inter-University Semiconductor Research Center, Department of Electrical and Computer Engineering, Seoul National University, <sup>2</sup>Integra Semiconductor Co., Ltd.</p>
FP1-295	<p><b>A Study on Auto Tracking of VREF for Reading Low Density Memory IP</b></p> <p>Hwang-gon Jeon, Heon Park, Ji-hye Jang, Tae-ho Yeom, Dong-shin Kim, and Sun-ha Hwang SK hynix system ic</p>
FP1-296	<p><b>Investigation of Z-interference based on The Confined Nitride Trap Layer Structure in 3D NAND Flash Memory</b></p> <p>Ye Eun Kim and Jong Kyung Park Department of Semiconductor Engineering, Seoul National University of Science and Technology</p>

FP1-297	<p><b>Analysis of Program Speed Degradation with ON Pitch Scaling in 3D NAND Flash Memory</b></p> <p>Hee young Bae and Jong Kyung Park Department of Semiconductor Engineering, Seoul National University of Science and Technology</p>
FP1-298	<p><b>Temperature Dependency of Endurance and Recovery Characteristics in 3D NAND Flash Memories</b></p> <p>Donghyuk So<sup>1,2</sup>, Yonggyu Cho<sup>3</sup>, Hyunyoung Shim<sup>3</sup>, Jaesung Sim<sup>3</sup>, and Hyungcheol Shin<sup>1,2,4</sup></p> <p><sup>1</sup>Inter-University Semiconductor Research Center, Seoul National University, <sup>2</sup>Department of Electrical and Computer Engineering, Seoul National University, <sup>3</sup>NAND Technology Development Division Team, SK hynix, <sup>4</sup>Integra Semiconductor Co., Ltd.</p>
FP1-299	<p><b>Development of Polymer/NMO Composite Based Resistive Random Access Memory</b></p> <p>Yu-Kyung Kim<sup>1</sup> and Jea Young Choi<sup>2</sup></p> <p><sup>1</sup>Department of Metallurgical Engineering, Dong-A University, <sup>2</sup>Department of Materials Sciences &amp; Engineering, Dong-A University</p>
FP1-300	<p><b>The Investigation of Stable Reset Voltage Control in TaO<sub>x</sub>-Based RRAM Devices via Oxygen Plasma Treatment</b></p> <p>Jung-Hwa Cha, Hee yeon Noh, Yeongsam Kim, and Myoung-Jae Lee Research Institute, DGIST</p>
FP1-301	<p><b>Design of Energy-efficient Circuit for In-memory Computing</b></p> <p>Na-hyun Kim and Jeong Beom Kim Kangwon National University</p>
FP1-303	<p><b>Investigation of Grain Boundary Effect on Threshold Voltage and ISPP Slope in 3D NAND Flash Memories</b></p> <p>Insang Han<sup>1,2</sup>, Sangmin Ahn<sup>1,2</sup>, and Hyungcheol Shin<sup>1,2,3</sup></p> <p><sup>1</sup>Inter-University Semiconductor Research Center, Department of Electrical and Computer Engineering, Seoul National University, <sup>2</sup>Integra Semiconductor Co., Ltd.</p>
FP1-306	<p><b>Reliable PVDF-TrFE Ferroelectric Polymer-Based InGaZnO Synaptic Transistors with Buried-gate Structure</b></p> <p>Minjeong Kim<sup>1,2</sup>, Ojun Kwon<sup>1,2</sup>, and Byungjin Cho<sup>1,2</sup></p> <p><sup>1</sup>Department of Urban, Energy, and Environmental Engineering, Chungbuk National University, <sup>2</sup>Department of Advanced Material Engineering, Chungbuk National University</p>
FP1-307	<p><b>Compute-in-memory for Vison Transformer Using Flash Thin Film Transistor Memory</b></p> <p>Jong Hyun Ko and Jong Ho Lee</p> <p><sup>1</sup>Department of Electrical and Computer Engineering, Seoul National University, <sup>2</sup>ISRC, Seoul National University</p>
FP1-308	<p><b>무기 농도 변화에 따른 초박형 하이브리드 필름 기반 저항성 랜덤 액세스 메모리 동작</b></p> <p>Ji In Kim, Jun Hyup Jin, In Su Park, Nam Ki Hwang, Ji Ho Yu, Tae Hoon Kim, and Min Ju Kim Department of Foundry Engineering, Dankook University</p>
FP1-309	<p><b>A Long-term Plasticity dependent on a Gate Read-voltage of a Synaptic Thin-Film Transistors</b></p> <p>Jeongseok Pi, Junyeong Jang, Donggeon Park, Dohyeong kim, Haeri Kim, Gyoungyeop Do, Danyoung Cha, and Sungsik Lee Department of Electronics Engineering, Pusan National University</p>
FP1-310	<p><b>A Tunneling Oxide Thickness-dependent Synaptic Characteristics of ZnO-Based Thin-Film Transistors</b></p> <p>Seokhyun Byun, Sangheon Chae, Sunbin Jo, Jeongmyeon Je, Nayeong Lee, Kunhee Tae, Danyoung Cha, and Sungsik Lee Department of Electronics Engineering, Pusan National University</p>
FP1-311	<p><b>Organic-inorganic Hybrid Methyl-silsesquioxanes Based Electric-Double-Layer for CMOS-compatible Synaptic Transistors</b></p> <p>Tae-Hwan Hyun, Tae-Gyu Hwang, Hamin Park, and Won-Ju Cho Department of Electronic Materials Engineering, Kwangwoon University</p>

FP1-312	<p><b>Enhancing Perceptual Artificial Intelligence Systems with a Dynamically Reconfigurable CMOS-compatible Synaptic Transistor</b></p> <p>Seung-Hyun Lee, Hwi-Su Kim, Dong-Hee Lee, Hamin Park, and Won-Ju Cho Department of Electronic Materials Engineering, Kwangwoon University</p>
FP1-313	<p><b>Stabilizing Resistive Memories through Conductive Filament Regulation Using Self-Organized Silica Nanodot</b></p> <p>Soyi Park, Byoung Kuk You, Jong Min Kim, and Keon Jae Lee Department of Materials Science and Engineering, KAIST</p>
FP1-314	<p><b>Effect of Phosphorus Concentration of PSG Electric Double Layer on Synaptic Operation Characteristics of Electrolyte Gate Transistor</b></p> <p>Yeong-Ung Kim<sup>1</sup>, Dong-Gyun Mah<sup>1</sup>, Seong-Hwan Lim<sup>2</sup>, Ha-Min Park<sup>2</sup>, and Won-Ju Cho<sup>1</sup> <sup>1</sup>Department of Electronic Materials Engineering, Kwangwoon University, <sup>2</sup>Department of Electronic Engineering, Kwangwoon University</p>
FP1-315	<p><b>Organic-inorganic Hybrid Ferroelectric Organic Thin-Film Transistors to Minimize Leakage Current</b></p> <p>Hyowon Jang, Yongju Lee, Swarup Biswas, and Hyeok Kim School of Electrical and Computer Engineering, University of Seoul</p>
FP1-316	<p><b>Characterization of HfO<sub>2</sub> Thin Films Prepared by Sequential Plasma Atomic Layer Deposition (SPALD) for the Charge Trapping Memory</b></p> <p>Jae Hoon Yu, Won Ji Park, and Hee Chul Lee Department of Advanced Materials Engineering, Tech University of Korea</p>
FP1-317	<p><b>Study of Non-volatile TCAM based on Ferro-FinFET Including Circuit Characteristics</b></p> <p>Juhwan Park, Huijun Kim, and Jongwook Jeon Department of Electrical and Computer Engineering, Sungkyunkwan University</p>
FP1-318	<p><b>3nm Ferro-FinFET 기반 Full Adder 회로 적용에 대한 배선효과 연구</b></p> <p>Hui Jun Kim, Ju Hwan Park, and Jong Wook Jeon Sungkyunkwan University</p>
FP1-319	<p><b>Effect of Interfacial SiO<sub>2</sub> Layer Thickness on the Memory Performances in the HfAlO<sub>x</sub>-Based Ferroelectric Tunnel Junction for a Neuromorphic System</b></p> <p>Yongjin Park, Minseo Noh, Seoyoung Park, Suyong Park, Woohyun Park, Jonghyuk Park, Jihee Park, and Sungjun Kim Division of Electronics and Electrical Engineering, Dongguk University</p>
FP1-320	<p><b>Improving Synaptic Characteristics of Organic Field-Effect Transistors through UV Modification of High-glass Transition Polymer Electrets</b></p> <p>Hoyoung Cho<sup>1</sup>, Danyoung Cha<sup>2</sup>, Moonsuk Yi<sup>2</sup>, Sungsik Lee<sup>2</sup>, and Jeongkyun Roh<sup>1</sup> <sup>1</sup>Department of Electrical Engineering, Pusan National University, <sup>2</sup>Department of Electronics Engineering, Pusan National University</p>
FP1-321	<p><b>스토캐스틱 비트 기반의 스파이킹 뉴럴 네트워크 설계</b></p> <p>Hye Yeon Jeon<sup>1</sup>, Yoon Kim<sup>1</sup>, and Min Suk Koo<sup>2</sup> <sup>1</sup>서울시립대학교 전자전기컴퓨터공학과, <sup>2</sup>인천대학교 컴퓨터공학부</p>
FP1-323	<p><b>Synaptic Characteristics of a-IGZO Thin Film Transistor with Embedded ZnO Charge Trapping Layer for Neuromorphic System</b></p> <p>Junwon Jang, Jungwoo Lee, Eunjin Lim, Hyeonseung Ji, Jungang Heo, Seongmin Kim, Chaewon Youn, and Sungjun Kim Division of Electronics and Electrical Engineering, Dongguk University</p>

FP1-324	<p><b>The Two-terminal Self-gate Diode with Exceptionally Low Ideal Factors Developed from a Two-dimensional Van Der Waals Heterostructure</b></p> <p>So Hyeon Park and Woo Jong Yu Department of Electrical and Computer Engineering, Sungkyunkwan University</p>
FP1-325	<p><b>Room Temperature Ferromagnetism in Two-dimensional Transition Metal Dichalcogenides Induced by Magnetic Intercalation</b></p> <p>Yong Ha Shin and Woo Jong Yu Department of Electrical and Computer Engineering, Sungkyunkwan University</p>
FP1-326	<p><b>Enhancing Charge Boosting Efficiency Using Polarization Switching Characteristics of Hafnia-Based Ferroelectric for DRAM Application</b></p> <p>Jimin Lee<sup>1</sup>, Minjeong Kang<sup>1</sup>, Yoomi Kang<sup>1</sup>, Taewan Noh<sup>1</sup>, Hoseong Kim<sup>1</sup>, Jisu Byun<sup>1</sup>, Wonwoo Kho<sup>1</sup>, Hyunjoo Hwang<sup>1</sup>, Hyo-Bae Kim<sup>3</sup>, Ji-Hoon Ahn<sup>3</sup>, and Seung-Eon Ahn<sup>1,2</sup></p> <p><sup>1</sup>Department of IT-Semiconductor Convergence Engineering, Tech University of Korea, <sup>2</sup>Department of Nano&amp;Semiconductor Engineering, Tech University of Korea, <sup>3</sup>Department of Materials Science and Chemical Engineering, Hanyang University</p>
FP1-328	<p><b>A Nonlinear Self-rectifying Synaptic Device Using Molybdenum Disulfide Nanomaterials</b></p> <p>Jongho Lim, DongJun Jang, TaeYong Lee, and Min-Woo Kwon Department of Electric Engineering, Gangneung-Wonju National University</p>
FP1-329	<p><b>HfAlO<sub>x</sub>-Based Ferroelectric Tunnel Junction with High Polarization for Neuromorphic System</b></p> <p>Sunghun Kim, Hyogeun Park, Yongjin Byun, Euncho Seo, Gyuhoon Lee, Seungjun Lee, Yoonseok Lee, and Sungjun Kim Division of Electronics and Electrical Engineering, Dongguk University</p>
FP1-330	<p><b>Nitrogen-doped CMOS-compatible ReRAM with Improved Uniformity.</b></p> <p>Youna Kwon, Gapseop Sim, Huijae Cho, Youngjoo Kim, Dongeun Yoo, Minho Kang, Namsoo Park, Yeeun Na, Yuri Lim, and Jongwon Lee Nano Convergence Technology Division, NNFC</p>
FP1-331	<p><b>Improvement of Refresh and Row Hammer Characteristics by Fluorine Passivation</b></p> <p>Hyunseung Choi, Taeyoon Lee, Sanghyun Park, Jae-Hyun Choi, Junsoo Kim, Jeong-Hoon Oh, Jemin Park, and Jaihyuk Song Samsung Electronics Co., Ltd.</p>
FP1-337	<p><b>A Fully Hardware-Based Neural Network Accelerator Using Self-Rectifying Memristor Integrated Passive Crossbar Array</b></p> <p>Kanghyeok Jeon<sup>1,2</sup>, Doo Seok Jeong<sup>1</sup>, Taeyong Eom<sup>2</sup>, and Gun Hwan Kim<sup>3</sup></p> <p><sup>1</sup>Division of Materials Science and Engineering, Hanyang University, <sup>2</sup>Division of Advanced Materials, KRICT, <sup>3</sup>Department of System Semiconductor Engineering, Yonsei University</p>
FP1-339	<p><b>Enhancing Reliability in 3D NAND Memory: A New Programming Scheme for Z-Interference Reduction</b></p> <p>Hyeon Seo Yun and Jong Kyung Park Department of Semiconductor Engineering, Seoul National University of Science and Technology</p>
FP1-340	<p><b>Content Addressable Memory 동작 구현을 위한 주변 회로 시스템</b></p> <p>김진혁<sup>1</sup>, 구민석<sup>2</sup>, 김윤<sup>1</sup></p> <p><sup>1</sup>서울시립대학교 전자전기컴퓨터공학과, <sup>2</sup>인천대학교 컴퓨터공학부</p>
FP1-341	<p><b>Charge-trap Memristor Device based on 180nm Si CMOS Foundry Process</b></p> <p>이원철, 권윤아, 서동주, 임유리, 설우석, 이종원 Nano Convergence Technology Division, NNFC</p>

FP1-342	<p><b>Comparative Study on Ferroelectric Properties of (Hf,Zr)O<sub>2</sub> Thin Films Using H<sub>2</sub>O<sub>2</sub> and O<sub>3</sub> as ALD Oxidants</b></p> <p>Juntak Jeong<sup>1</sup>, Yong Chan Jung<sup>2</sup>, Jin-Hyun Kim<sup>2</sup>, Hye Ryeon Park<sup>1</sup>, Seongbin Park<sup>1</sup>, Jongmug Kang<sup>1</sup>, Yeseo Choi<sup>1</sup>, Jiyoung Kim<sup>2</sup>, and Si Joon Kim<sup>1</sup></p> <p><sup>1</sup>Kangwon National University, <sup>2</sup>The University of Texas at Dallas</p>
FP1-343	<p><b>A Study on Low-temperature (&lt;400°C) Furnace Annealing for BEOL Compatible Ferroelectric ALD-(Hf,Zr)O<sub>2</sub> Thin Films</b></p> <p>Jongmug Kang<sup>1</sup>, Seongbin Park<sup>1</sup>, Hye Ryeon Park<sup>1</sup>, Juntak Jeong<sup>1</sup>, Yeseo Choi<sup>1</sup>, Jin-Hyun Kim<sup>2</sup>, Minjong Lee<sup>2</sup>, Jiyoung Kim<sup>2</sup>, and Si Joon Kim<sup>1</sup></p> <p><sup>1</sup>Kangwon National University, <sup>2</sup>The University of Texas at Dallas</p>
FP1-344	<p><b>Reliable HZO (0.5) Based Ferroelectric Memory with Ultra-low Operation Voltage of 1.1V by Synergy Effect of Thickness Scaling and Microwave Annealing</b></p> <p>Mostafa Habibi, Hojung Jang, Pendar Azaripour, Kyumin Lee, Seungyeol Oh, and Hyunsang Hwang POSTECH</p>
FP1-345	<p><b>Precision Control of HfO<sub>2</sub>- Based Ferroelectric Tunnel Junction Memory State</b></p> <p>Taewan Noh<sup>1</sup>, Wonwoo Kho<sup>1</sup>, Hyunjoo Hwang<sup>1</sup>, Hoseong Kim<sup>1</sup>, Jimin Lee<sup>1</sup>, Jisu Byun<sup>1</sup>, Yoomi Kang<sup>1</sup>, Minjeong Kang<sup>1</sup>, and Seung-Eon Ahn<sup>1,2</sup></p> <p><sup>1</sup>Department of IT · Semiconductor Convergence Engineering, Tech University of Korea, <sup>2</sup>Department of Nano &amp; Semiconductor Engineering, Tech University of Korea</p>
FP1-346	<p><b>NoC 기반 최적의 PIM 하드웨어 가속기 디자인 탐구를 위한 시뮬레이터</b></p> <p>이원주<sup>1</sup>, 김 윤<sup>1</sup>, 구민석<sup>2</sup></p> <p><sup>1</sup>서울시립대학교 전자전기컴퓨터공학과, <sup>2</sup>인천대학교 컴퓨터공학부</p>
FP1-347	<p><b>Indium-Gallium-Zinc-Oxide CTF-Based Reconfigurable Logic Gates</b></p> <p>Eunpyo Park<sup>1,2</sup>, Dong Yeon Woo<sup>1</sup>, Dae Kyu Lee<sup>1</sup>, Gichang Noh<sup>1</sup>, Yooyeon Jo<sup>1</sup>, Jongkil Park<sup>1</sup>, Jaewook Kim<sup>1</sup>, YeonJoo Jeong<sup>1</sup>, Suyoun Lee<sup>1</sup>, Inho Kim<sup>1</sup>, Jong-Keuk Park<sup>1</sup>, Seongsik Park<sup>1</sup>, Hyun Jae Jang<sup>1</sup>, Sangbum Kim<sup>2</sup>, and Joon Young Kwak<sup>1,3</sup></p> <p><sup>1</sup>KIST, <sup>2</sup>Seoul National University, <sup>3</sup>UST</p>
FP1-348	<p><b>Flexible Artificial Synapse Devices based on Integrated Two-dimensional Material for Wearable Electronic Systems</b></p> <p>Hyeon Seung Lee<sup>1</sup>, Chae Min Yeom<sup>1</sup>, Sunil Babu Eadi<sup>3</sup>, Kolleboyina Jayaramulu<sup>3</sup>, Hyuk Min Kwon<sup>2</sup>, and Hi Deok Lee<sup>1</sup></p> <p><sup>1</sup>Chungnam National University, <sup>2</sup>Semiconductor Convergence Campus of Korea Polytechnics College, <sup>3</sup>Department of Chemistry, Indian Institute of Technology</p>
FP1-349	<p><b>Graphene Diffusion Barrier를 이용한 PPXC 기반의 RRAM Crossbar Array</b></p> <p>이선정<sup>1</sup>, 김수경<sup>1</sup>, 김보람<sup>1</sup>, 구민석<sup>2</sup>, 박동욱<sup>1</sup>, 김 윤<sup>1</sup></p> <p><sup>1</sup>서울시립대학교 전자전기컴퓨터공학과, <sup>2</sup>인천대학교 컴퓨터공학과</p>
FP1-350	<p><b>Study the Impact of Metal Ion Doping Location on the Performance of ZnO RRAM Memory Devices</b></p> <p>Yu-Mi Kim<sup>1</sup>, Jun Kue Park<sup>1</sup>, So-Yeon Kwon<sup>2</sup>, Woon-San Ko<sup>2</sup>, and Ga-Won Lee<sup>2</sup></p> <p><sup>1</sup>KAERI, <sup>2</sup>Chungnam National University</p>
FP1-351	<p><b>Implementation of Threshold Switching in ZrO<sub>2</sub> Memristor through Crystallization</b></p> <p>Dae Kyu Lee<sup>1,2</sup>, Gichang Noh<sup>1</sup>, Yooyeon Jo<sup>1</sup>, Eunpyo Park<sup>1</sup>, Min Jee Kim<sup>1</sup>, Yong Woo Sung<sup>1</sup>, Dong Yeon Woo<sup>1</sup>, and Joon Young Kwak<sup>1,3</sup></p> <p><sup>1</sup>KIST, <sup>2</sup>Korea University, <sup>3</sup>UST</p>
FP1-352	<p><b>Switchable Memory Operation of Reconfigurable Dopingless Feedback Field Effect Transistors</b></p> <p>Yuna Suh and Doohyeok Lim Kyonggi University</p>



FP1-353	<p><b>Cryogenic Behaviors of Capacitorless 1T-DRAM</b></p> <p>Hakin Kim and Doohyeok Lim Kyonggi University</p>
FP1-354	<p><b>True Random Number Generator based on Memristor Array for Medical Image Synthesis Using Generative Network</b></p> <p>Namju Kim and Byung Chul Jang School of Electronic and Electrical Engineering, Kyungpook National University</p>
FP1-355	<p><b>TiO<sub>2</sub> Interlayer for Ferroelectric Thin-film Transistor with SnO Channel and HZO Gate Dielectric</b></p> <p>An Hoang-Thuy Nguyen<sup>1</sup> and Choi Rino<sup>1,2</sup> <sup>1</sup>3D Convergence Center, Inha University, <sup>2</sup>Department of Materials Science and Engineering, Inha University</p>
FP1-356	<p><b>3D Vertical RRAM 기반 nvSRAM 및 CNN 구현 방법</b></p> <p>안지훈<sup>1</sup>, 구민석<sup>2</sup>, 김 윤<sup>1</sup> <sup>1</sup>서울시립대학교 전자전기컴퓨터공학과, <sup>2</sup>인천대학교 컴퓨터공학부</p>
FP1-357	<p><b>멤리스터 기반 임계-지점 가변형 전기화학 바이오센서의 구현</b></p> <p>권윤아<sup>1,2</sup>, 배남호<sup>1</sup>, 안재혁<sup>2</sup>, 설우석<sup>1</sup>, 임부택<sup>1</sup>, 이종원<sup>1</sup>, 김영준<sup>3</sup> <sup>1</sup>나노융합기술원, <sup>2</sup>충남대학교, <sup>3</sup>가천대학교</p>
FP1-358	<p><b>CMOS Compatible Short-Term Memory Implementation</b></p> <p>윤병호<sup>1</sup>, 김보람<sup>1</sup>, 안지훈<sup>1</sup>, 구민석<sup>2</sup>, 김 윤<sup>1</sup> <sup>1</sup>서울시립대학교 전자전기컴퓨터공학과, <sup>2</sup>인천대학교 컴퓨터공학부</p>
FP1-359	<p><b>2 로직 셀 기반 싱글 레벨 셀 낸드 플래시 메모리 상에서의 로직 연산 구현</b></p> <p>금건우<sup>1</sup>, 안지훈<sup>1</sup>, 김 윤<sup>1</sup>, 구민석<sup>2</sup> <sup>1</sup>서울시립대학교 전자전기컴퓨터공학과, <sup>2</sup>인천대학교 컴퓨터공학부</p>
FP1-360	<p><b>NAND 플래시 메모리와 DRAM이 융합된 NAD 메모리</b></p> <p>김소중<sup>1</sup>, 안지훈<sup>1</sup>, 구민석<sup>2</sup>, 김 윤<sup>1</sup> <sup>1</sup>서울시립대학교 전자전기컴퓨터공학과, <sup>2</sup>인천대학교 컴퓨터공학부</p>
FP1-361	<p><b>Effect of Program Error in Memristor-Based Ternary Content Addressable Memory</b></p> <p>Sangwook Youn, Jinwoo Park, Kyuree Kim, Jungjin Lee, and Hyungjin Kim Department of Electrical and Computer Engineering, Inha University</p>
FP1-362	<p><b>Physical Unclonable Function with Memcapacitor Crossbar Array Using NAND Flash Structure</b></p> <p>Min Suk Song, Suhyeon Ahn, Hwiho Hwang, and Hyungjin Kim Department of Electrical and Computer Engineering, Inha University</p>
FP1-363	<p><b>True Random Number Generator Using Random Telegraph Noise of Memristor</b></p> <p>Hwiho Hwang, Min Suk Song, Suhyeon Ahn, Dayeon Yu, and Hyungjin Kim Department of Electrical and Computer Engineering, Inha University</p>
FP1-364	<p><b>Impacts of Annealing on the Operation Characteristics of Phase Change Memory Using Ge<sub>2</sub>Sb<sub>2</sub>Te<sub>5</sub> (GST) Material</b></p> <p>San Park<sup>1</sup>, Sejin Kim<sup>1</sup>, Sehyeon Choi<sup>1</sup>, Boncheol Ku<sup>1</sup>, Jun Woo Park<sup>2</sup>, Pil Seong Park<sup>2</sup>, Sang Hyun Ji<sup>2</sup>, and Changhwan Choi<sup>1</sup> <sup>1</sup>Division of Materials Science &amp; Engineering, Hanyang University, <sup>2</sup>AP Systems</p>
FP1-365	<p><b>Passing Word Line Induced Subthreshold Leakage Reduction by a Partial Insulator in a Buried Channel Array Transistor</b></p> <p>Suyeon Kim, Dongyeong Kim, Jewon Park, Sinwook Kim, Sowon Kim, and Myeong Jin Lee Department of ICT Convergence System Engineering, Chonnam National University</p>

FP1-366	<p><b>Row Hammer Characteristics by Total Ionization Dose Effect (TID) in Partial Isolation Type Buried Channel Array Transistor (PI-BCAT)</b></p> <p>Je-Won Park, Dong-Yeong Kim, Su-Yeon Kim, Sin-Wook Kim, Ju-Won Lee, and Myoung Jin Lee Department of ICT Convergence System Engineering, Chonnam National University</p>
FP1-367	<p><b>Improving Endurance of Ferroelectric Devices Using Nitrogen Incorporation into Interfacial Dielectric</b></p> <p>Jae Kyeong Kim and Rino Choi 3D Convergence Center and Materials Science and Engineering, Inha University</p>
FP1-368	<p><b>Monolithic 3D Integrated Non-Volatile Logic Circuits with Hafnia-Based Ferroelectric TFT Formed by Low Temperature MWA Process</b></p> <p>Hongrae Joh, Hyojun Choi, Yunseok Nam, Sangmok Lee, Woongjin Kim, Jihye Ock, Sujeong Lee, Hyunjun Kang, and Sanghun Jeon School of Electrical Engineering, KAIST</p>
FP1-369	<p><b>Cryogenic Phase Change Memory</b></p> <p>Sohui Yoon<sup>1</sup>, Dong-Hyeok Lim<sup>1</sup>, Namwook Hur<sup>1</sup>, Beomsung Park<sup>1</sup>, Hongsik Jeong<sup>1,2</sup>, and Joonki Suh<sup>1,2</sup> <sup>1</sup>Department of Materials Science and Engineering, UNIST, <sup>2</sup>Graduate School of Semiconductor Materials and Devices Engineering, UNIST</p>
FP1-371	<p><b>기판 바이어스 및 과구동 전압 활용 CMOS 인버터 특성 개선 기법</b></p> <p>Dong Yeong Kim, Su Yeon Kim, Je Won Park, Sin Wook Kim, Hyeona Seo, and Myoung Jin Lee ICT Convergence System Engineering, Chonnam National University</p>
FP1-372	<p><b>Analysis of Wake-up Degradation in Amorphous InGaZnO<sub>x</sub> Ferroelectric Thin-Film Transistor with HfZrO<sub>x</sub> Gate Insulator</b></p> <p>Hwan Jin Kim, Hyojin Yang, Haesung Kim, Ha-Neul Lee, Se Jun Park, Jun Seong Park, Sung-Jin Choi, Dong Myong Kim, Dae Hwan Kim, and Jong-Ho Bae School of Electrical Engineering, Kookmin University</p>
FP1-373	<p><b>Empowering High-Performance, Low-Power Memristor Applications with Large-Area Molybdenum Disulfide Grown on a Flexible Substrate</b></p> <p>Yu Seong Lee, Arindam Bala, Anamika Sen, and Sun Kook Kim Sungkyunkwan University</p>
FP1-374	<p><b>Excellent Reliability and Electro-resistance Properties of Ferroelectric Tunnel Junction by Employing Oxygen-Rich Hafnia Ferroelectric Film</b></p> <p>Chaeheon Kim, Junghyeon Hwang, and Sanghun Jeon School of Electrical Engineering, KAIST</p>
FP1-375	<p><b>Analysis and Modeling of Ferroelectric Amorphous InGaZnO<sub>x</sub> Thin-Film Transistor at Initial State and during Memory Operation</b></p> <p>Ha-Neul Lee, Hyojin Yang, Sejun Park, Haesung Kim, Sanghyuk Yun, Sung-Jin Choi, Dong Myong Kim, Dae Hwan Kim, and Jong-Ho Bae School of Electrical Engineering, Kookmin University</p>
FP1-376	<p><b>Characteristics of Gradual Resistive Switching in Oxide-Based Memristors depending on Electrode Oxidation Methods</b></p> <p>Yeongsam Kim, Hee Yeon Noh, Jung-Hwa Cha, Yerim Kim, Myoung-Jae Lee, June-Seo Kim, and Hyeon-Jun Lee Division of Nanotechnology, DGIST</p>
FP1-377	<p><b>GST Insertion Effects on Stacked ITO/IGZO/ZrO<sub>2</sub>/GST RRAM Devices</b></p> <p>Bidyashakti Dash, Ajit Kumar, and Sung Hun Jin Department of Electronic Engineering, and I-Nanofab Center, Incheon National University</p>

<p><b>FP1-378</b></p>	<p><b>Analysis of Interface State according to the Polarization Switching of Ferroelectric Field-Effect Transistor</b></p> <p>Sujong Kim, Ha-Neul Lee, Hyojin Yang, Haesung Kim, Sejun Park, Sung-Jin Choi, Dong Myong Kim, Dae Hwan Kim, and Jong-Ho Bae</p> <p>School of Electrical Engineering, Kookmin University</p>
<p><b>FP1-379</b></p>	<p><b>ALD Al<sub>2</sub>O<sub>3</sub> Thickness Effects on Switching Behaviors for Stacked ZnO<sub>x</sub>/Al<sub>2</sub>O<sub>3</sub> Resistive Random-Access Memories (RRAMs)</b></p> <p>Chae Yeong Kim, Seo-Young Jo, Geun Lee, and Sung Hun Jin</p> <p>Department of Electronic Engineering, and I-Nanofab Center, Incheon National University</p>
<p><b>FP1-380</b></p>	<p><b>ALD Al<sub>2</sub>O<sub>3</sub> Capping Effects on Reliable Operation of Multi-layered AlO<sub>x</sub>/Al<sub>2</sub>O<sub>3</sub> Resistive Random-Access Memories</b></p> <p>Hanmin Kim, Jongjoon Park, Yunsung Lee, Hogeon Jeon, and Sung Hun Jin</p> <p>Department of Electronic Engineering, and I-Nanofab Center, Incheon National University</p>

FP1-381	<b>Impedance Calibration for High Accuracy NEMTCAM</b> Changwoo Park, Seung-Ju Lee, Hyuk-Jin Kim, Min-Joo Yoo, and Jinwook Burm Department of Electronic Engineering, Sogang University
FP1-382	<b>A 6.78MHz Active Rectifier for Wireless Power Transfer Systems</b> Sung Sik Hong and Jinwook Burm Sogang University
FP1-383	<b>28Gb/s에서 32.2dB Channel Loss를 보상하는 Adaptive Feedforward Continuous Time Linear Equalize</b> 박준희, 박종민, 조요셉, 이승주, 채종혁, 김혁진, 유민주, 박창우, 범진욱 Sogang University
FP1-384	<b>Fast-Slow Ring Oscillator Type TDC의 Frequency 고정을 위한 Digital PLL</b> 유민주, 이승주, 김혁진, 박창우, 채종혁, 박준희, 홍성식, 범진욱 Department of Electronic Engineering, Sogang University
FP1-385	<b>Design of 16Gb/s/pin 8-Channel Transceiver Using Multiwire Signaling Technique with Skew Compensation for Memory Interface</b> Sinho Lee, Daeun Yun, Junhak Kim, and Kwanso Park Yonsei University
FP1-386	<b>Offset Decrease of N-Channel Transistor Inverter</b> Youngjin Kim <sup>1</sup> , Janghoo Lee <sup>1</sup> , Hyekang Park <sup>1</sup> , Seo Yun Kim <sup>2</sup> , Seung Jae Moon <sup>1</sup> , and Byoung Seong Bae <sup>1</sup> <sup>1</sup> School of Electronic Convergence Engineering, Hoseo University, <sup>2</sup> Department of Chemical Engineering, Hoseo University
FP1-387	<b>Capacitor Ratio-Independent Switched-Capacitor Type 4-Times Voltage-Amplifier for OLED Source Driver IC</b> Yu-Guan Kim, Min-Woo Kim, Won-Jo Lee, Yun-Su Kim, and Byung-do Yang Department of Electronics Engineering, Chungbuk National University
FP1-388	<b>28GS/s 시간 교차 아날로그-디지털 변환기를 위한 다중-위상 지연 고정 루프</b> Yun Kuk Park and Jung Hoon Chun Department of Electrical and Computer Engineering, Sungkyunkwan University
FP1-389	<b>A 500frames/sec CMOS Image Sensor with 11-bit Column-Parallel Two Step Single Slope ADC</b> 김혁진, 박종민, 홍성식, 이승주, 채종혁, 박준희, 유민주, 박창우, 범진욱 Sogang University
FP1-390	<b>Operation Principle of Reconfigurable Integrate-and-Fire Neuron Circuit</b> Kyu-Ho Lee, Woo Young Choi, and Jong-Ho Lee School of ECE and ISRC, Seoul National University
FP1-391	<b>Direct ToF를 효율적으로 Readout하기 위한 Macro-pixel Readout Circuit</b> Eun-Chang Lee, Dahwan Park, Hoochan Lee, Haksoo Kim, Jin-Seon Kim, Min-Seok Shin, and Min-Kyu Kim SK hynix
FP1-392	<b>과도진동 제거를 위한 디지털 저드롭아웃 레귤레이터</b> 우기찬, 김인태, 김유신, 박정주, 윤대한, 윤세환, 조미령 한국광기술원
FP1-393	<b>High-resolution Sigma-Delta ADC for Sensor Applications</b> Jeonghee Jeon, Donghyun Kim, Hohyun Kim, Seoyeon Park, Heejin Lee, and Joongho Choi University of Seoul
FP1-394	<b>Module Integrated Converter for Photovoltaic Power System</b> Jaehyeong Lee, Donghyun Kim, Jisoo Kim, Jongchul Chae, and Joongho Choi University of Seoul

FP1-395	<b>Millimeter-wave Dual-patch Antenna on Silicon Substrate</b> Deokgi Kim, Juhyeong Seo, Seungmin Ryu, Byeongju Kang, Donghyuk Jung, Sangyoon Lee, JaeHyun Noh, Sarah Eunkyung Kim, and Dongha Shim Seoul National University of Science and Technology
FP1-396	<b>Design of GaN X-band Power Amplifier MMI</b> Chiyong Ha, Juwon Kwon, and Junghwan Han Department of Radio and Information Communication Engineering, Chungnam National University
FP1-397	<b>X-band GaN Low-Noise Amplifier MMIC</b> Juwon Kwon, Chiyong Ha, and Junghwan Han Department of Radio and Information Communication Engineering, Chungnam National University
FP1-398	<b>최소 타이밍 스큐 디지털-아날로그 변환기를 집적한 56-Gb/s PAM-4 송신기</b> 김현민, 전정훈 성균관대학교 전기컴퓨터공학과
FP1-399	<b>56-Gbps PAM4 수신단 Analog Front-End 회로</b> Je Hyeok Yu and Jung-Hoon Chun Department of Semiconductor and Display Engineering, Sungkyunkwan University
FP1-400	<b>Large-Area Electrolyte-Gated Network Carbon Nanotube Thin Film Transistors for Reflective RF Metasurfaces</b> Yechan Han <sup>1</sup> , Haksoon Jung <sup>1,2</sup> , Seongmin Eum <sup>1</sup> , and Jimin Kwon <sup>1</sup> <sup>1</sup> Department of Electrical Engineering, UNIST, <sup>2</sup> Department of Chemical Engineering, POSTECH
FP1-401	<b>2.4 GHz Low-power BLE Receiver Front-end for IoT Applications</b> Sengjun Jo, Hyeonjun kim, and Kuduck Kwon Department of Electronics Engineering, Kangwon National University
FP1-402	<b>A 7-9 GHz IQ Up-Conversion Mixer for 5G New Radio FR2 IF Cellular Transceivers</b> Sukju Yun, Donggu Lee, and Kuduck Kwon Department of Electronic Engineering, Kangwon National University

FP1-403	<p><b>Ternary Cell Optimization and Its Impact on VLSI</b></p> <p>Hyundong Lee and Taigon Song School of Electronic and Electrical Engineering, Kyungpook National University</p>
FP1-404	<p><b>Switching-Based Ternary Circuit Design Methodology and It's Optimization Method for Inkjet-printed Anti-ambipolar Transistors (AAT) and CMOS</b></p> <p>Jongbeom Kim and Taigon Song School of Electronic and Electrical Engineering, Kyungpook National University</p>
FP1-405	<p><b>FS2K: A Forksheet FET Technology Library and a Study of VLSI Prediction for 2nm and Beyond</b></p> <p>Yunjeogn Shin<sup>1</sup>, Daehyeok Park<sup>2</sup>, Dohun Koh<sup>2</sup>, Dongryul Heo<sup>2</sup>, Jieun Park<sup>2</sup>, Hyundong Lee<sup>1</sup>, Jongbeom Kim<sup>1</sup>, Hyunsoo Lee<sup>1</sup>, and Taigon Song<sup>1</sup></p> <p><sup>1</sup>School of Electronic and Electrical Engineering, Kyungpook National University, <sup>2</sup>School of Electronics Engineering, Kyungpook National University</p>
FP1-406	<p><b>A Human-Based Routing Algorithm for Unified Printed Circuit Board Routing</b></p> <p>Yunjeong Go and Taigon Song School of Electronic and Electrical Engineering, Kyungpook National University</p>
FP1-407	<p><b>Thermal-aware Floorplanning for 3D ICS</b></p> <p>Joonyoung Seo and Seokhyeong-Kang Department of Electrical Engineering, POSTECH</p>
FP1-408	<p><b>Cache Register Sharing Structure for Channel-level Near-memory Processing in NAND Flash Memory</b></p> <p>Hyunwoo Kim<sup>1</sup> and Taigon Song<sup>1,2</sup></p> <p><sup>1</sup>School of Electronic and Electrical Engineering, Kyungpook National University, <sup>2</sup>School of Electronics Engineering, Kyungpook National University</p>
FP1-409	<p><b>One-stage Global Placement Using Clustering Based Initial Placement</b></p> <p>Hyeonwoo Park and Seokhyeong Kang Department of Electrical Engineering, POSTECH</p>
FP1-410	<p><b>Packing-Based Initialization for Improved Macro Placement</b></p> <p>Donghyuk Kim, Jaekyung Im, and Seokhyeong Kang Department of Electrical Engineering, POSTECH</p>
FP1-411	<p><b>Enhancement of ML-Based Standard Cell Library Generation</b></p> <p>Sung Gyu Jang and Seokhyeong Kang POSTECH</p>

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

ZONE 4 (3층 로비)

<p>FP1-412</p>	<p><b>Proton Irradiation Effects on 1.2 kV SiC MOSFETs</b>                  Jae Hwa Seo<sup>1</sup>, Young Jo Kim<sup>1</sup>, Jeong Hyun Moon<sup>1</sup>, Young Jun Yoon<sup>2</sup>, Junghun Kim<sup>1</sup>, and Hyoung Woo Kim<sup>1</sup>  <sup>1</sup>Advanced Semiconductor Research Center, Power Semiconductor Research Division, KERI,  <sup>2</sup>Department of Electronic Engineering, Andong National University</p>
<p>FP1-413</p>	<p><b>Gamma-ray on Superjunction MOSFETs and Gate Ringing</b>                  Sangyun Song and Hyemin Kang                  Department of Energy Engineering, KENTECH</p>
<p>FP1-414</p>	<p><b>Thermal Conductivity Reduction by Phonon Backscattering in a Silicon Nanowire with Wavy Surfaces</b>                  Hyeongseok Yoo, Ki Yeong Kim, Ju Hong Park, and Chang-Ki Baek                  POSTECH</p>
<p>FP1-415</p>	<p><b>Characteristic Dual-domain Structure of Reduced Graphene Oxide and Its Application to Higher Specific Capacitance</b>                  Jun Beom Kim, Sung Hwan Koo, In Ho Kim, and Sang Ouk Kim                  KAIST</p>
<p>FP1-416</p>	<p><b>Regulation of Thermal Radiation based on a CVD-grown VO<sub>2</sub> Thin Film on a Plastic Substrate for Dynamic Radiative Cooling Application</b>                  Nayoung Wi<sup>1,2</sup>, Hyojin Bang<sup>1,2</sup>, Hongseung Kim<sup>2</sup>, Yonghun Kim<sup>1</sup>, and Jongwon Yoon<sup>1</sup>  <sup>1</sup>Department of Energy and Electronic Materials, KIMS, <sup>2</sup>Major of Nano-Semiconductor Engineering, Korea Maritime and Ocean University</p>
<p>FP1-417</p>	<p><b>Tailoring the Composition and Morphology of RuO<sub>x</sub> (0≤x≤2) Recombination Layers for High Efficiency Perovskite Tandem Solar Cells</b>                  Pil Ju Youn<sup>1</sup>, Mun Young Woo<sup>2</sup>, Jun Hong Noh<sup>2</sup>, and Jeong Hwan Han<sup>1</sup>  <sup>1</sup>Department of Material Science and Engineering, Seoul National University of Science and Technology, <sup>2</sup>School of Civil, Environmental and Architectural Engineering, Korea University</p>
<p>FP1-418</p>	<p><b>Optimal Doping Level of Bismuth Titanate to Modulate Optical Bandgap for Oxide Optoelectronics</b>                  He Rui, Tang Rui, and Chung Wung Bark                  Gachon University</p>
<p>FP1-419</p>	<p><b>Maximized Internal Scattering in Heterostack Ti<sub>3</sub>C<sub>2</sub>T<sub>x</sub> MXene/Graphene Oxide Film for Effective Electromagnetic Interference Shielding</b>                  Yeohoon Yoon, GangSan Lee, and SangOuk Kim                  Department of Materials Science and Engineering, KAIST</p>
<p>FP1-420</p>	<p><b>Energy Efficient Memristive Logic System and Its Implementation in a HfO<sub>x</sub> Memristive Crossbar Array</b>                  Moon Gu Choi, Jae Hyun In, Hanchan Song, and Kyung Min Kim                  Department of Materials Science and Engineering, KAIST</p>
<p>FP1-421</p>	<p><b>Power Handling Capability 개선을 위한 전류분산 구조가 적용된 PIN Limit 다이오드</b>                  원종일, 정동윤, 장현규, 박건식                  ETRI ICT 창의연구소 반도체소부장기술센터</p>

<p><b>FP1-422</b></p>	<p><b>Unlocking the Potential of Porous Bi<sub>2</sub>Te<sub>3</sub>-Based Thermoelectrics Using Precise Interface Engineering through Atomic Layer Deposition</b></p> <p>Seunghyeok Lee<sup>1,2</sup>, Gwang Min Park<sup>1,3</sup>, Younghoon Kim<sup>4</sup>, So-Hyeon Lee<sup>4</sup>, Junpyo Hong<sup>1</sup>, Sung-Chul Kim<sup>1</sup>, Sung Ok Won<sup>1</sup>, Albert S. Lee<sup>1</sup>, Ju-Young Kim<sup>4</sup>, Heesuk Kim<sup>1</sup>, Seung-Hyub Baek<sup>1</sup>, Jin-Sang Kim<sup>1</sup>, Tae Joo Park<sup>2</sup>, and Seong Keun Kim<sup>1,3</sup></p> <p><sup>1</sup>KIST, <sup>2</sup>Hanyang University, <sup>3</sup>Korea University, <sup>4</sup>UNIST</p>
<p><b>FP1-423</b></p>	<p><b>Self-heating 특성을 고려한 GaN HEMT 고주파 회로 모델</b></p> <p>권경배<sup>1</sup>, 전종욱<sup>2</sup></p> <p><sup>1</sup>건국대학교 전자정보통신공학과, <sup>2</sup>성균관대학교 전자전기컴퓨터공학과</p>
<p><b>FP1-424</b></p>	<p><b>Characterization of Bulk Trap Density Using Fully I-V-Based Optoelectronic Differential Ideality Factor in Multi-Layer MoS<sub>2</sub> FET</b></p> <p>Soyeon Kim, Jaewook Yoo, Hyeonjun Song, Hongseung Lee, Seongbin Lim, Minah Park, Seohyeon Park, and Hagyoul Bae</p> <p>Jeonbuk National University</p>