



제 29회 한국반도체학술대회

The 29th Korean Conference on Semiconductors

2022년 1월 24일(월)~ 26일(수) | 강원도 하이원 그랜드호텔(컨벤션타워)

2022년 1월 25일(화), 09:00-10:15

Room A (에메랄드 I, 5층)

R. Semiconductor Software 분과

[TA1-R] 차세대 플래시 기반 스토리지 디바이스의 데이터 보안 및 응용

좌장: 안성용 교수(부산대학교), 신일훈 교수(서울과학기술대학교)

TA1-R-1 09:00-09:30	Hardware/Software Co-design Solution for Efficient Data Protection in Modern Flash-Based Storage Systems Myungsuk Kim <i>Kyungpook National University</i>
TA1-R-2 09:30-10:00	An Intelligent LSM-tree Based Key-Value SSD for Data Analytics Youngjae Kim <i>Department of Computer Science and Engineering, Sogang University</i>
TA1-R-3 10:00-10:15	A Demand-Based Address Mapping Scheme Using I/O Prediction Seongmin Kim and Taeseok Kim <i>Kwangwoon University</i>



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Room B (에메랄드 II+III, 5층)

S. Chip Design Contest 분과

[TB1-S] Chip Design Contest

좌장: 이영주 교수(POSTECH), 장영찬 교수(금오공과대학교)

<p>TB1-S-1 09:00-09:15</p>	<p>A 60GHz Vector-Sum Phase Shifter Design in TSMC 65nm CMOS Dong Ouk Cho, In Cheol Yoo, and Chul Woo Byeon <i>Department of Electronic Engineering, Wonkwang University</i></p>
<p>TB1-S-2 09:15-09:30</p>	<p>A Reliable SoC Design using Replica Circuits for Near-Threshold Voltage Operation Hyunchul Park and Jongsun Park <i>Department of Electrical Engineering, Korea University</i></p>
<p>TB1-S-3 09:30-09:45</p>	<p>A 9 Gb/s/μm Transceiver with a Hybrid ISI and FEXT Equalization Scheme for Next-Generation HBM Interface Kung Ryun Yoon, Seung Woo Park, and Chul Woo Kim <i>Korea University</i></p>
<p>TB1-S-4 09:45-10:00</p>	<p>A 97.6%-Efficient 1-2MHz Hysteretic Buck Converter with 7V/μs DVS-Rate Enabled by Isosceles-Triangular Shunt Current Push-Pull Technique Hong-Hyun Bae, Jeong-Hyun Cho, Gyeong-Gu Kang, Yousung Park, and Hyun-Sik Kim <i>KAIST</i></p>
<p>TB1-S-5 10:00-10:15</p>	<p>오동작 감지 회로를 포함하는 능동 EMI 필터 One-chip IC Sangyeong Jeong^{1,2} and Jinguok Kim^{1,2} ¹UNIST, ²EMcoretech Co.</p>
<p>TB1-S-6 10:15-10:30</p>	<p>Reset Circuit Design for Multi-pixel THz Imaging System Sang Hyo Ahn, Min Woo Ryu, Minjae Kim, and Kyung Rok Kim <i>Department of Electrical Engineering, UNIST</i></p>



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Room C (사파이어 I, 5층)

I. MEMS & Sensor Systems 분과

[TC1-I] Optimized MEMS & Sensor Structure

좌장: 원상민 교수(성균관대학교), 안재혁 교수(충남대학교)

<p>TC1-I-1 09:00-09:15</p>	<p>용액공정기반의 고이동도 전자수송층을 사용한 비플러렌 유기태양전지 연구 최효정¹, 이형원¹, 이용주^{1,2}, Biswas Swarup¹, 김혁¹ <i>¹서울시립대학교 전자전기컴퓨터공학부, ²한국생산기술연구원</i></p>
<p>TC1-I-2 09:15-09:30</p>	<p>High-performance, Self-powered, and Semi-transparent Ultraviolet-C Photodetectors based on Solution-processed CaTiO₃ Perovskite Heterojunctions Subin Lee¹, Taehyun Park^{1,2}, and Hocheon Yoo¹ <i>¹Department of Electronic Engineering, Gachon University, ²Department of Chemical and Biological Engineering, Gachon University</i></p>
<p>TC1-I-3 09:30-09:45</p>	<p>실리콘 포토다이오드의 후면접촉에 따른 근적외선 검출특성 분석 오세인, 권진오, 조민섭, 김기현 <i>전북대학교 전자공학부</i></p>
<p>TC1-I-4 09:45-10:00</p>	<p>O₂ 가스 센싱이 가능한 ZrN 기반의 Gasistor 센서 연구 정진수, 이두원, 김희동 <i>세종대학교 전자정보통신공학과 지능형드론 융합전공</i></p>
<p>TC1-I-5 10:00-10:30</p>	<p>Performance-Enhanced MEMS Sensors & Actuators via Geometrically Structured 3-D Nanomaterials Min-Ho Seo <i>School of Biomedical Convergence Engineering, College of Information and Biomedical Engineering, Pusan National University</i></p>



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Room D (사파이어 II+III, 5층)

K. Memory (Design & Process Technology) 분과

[TD1-K] Processing in Memory

좌장: 이재구 수석(삼성전자), 배종호 교수(국민대학교)

<p>TD1-K-1 09:00-09:30</p>	<p>Nonvolatile Memory Based Compute-in-memory (CIM) Technology for Energy Efficient Deep Neural Network Accelerator Wonbo Shim <i>Department of Electrical and Information Engineering, Seoul National University of Science and Technology</i></p>
<p>TD1-K-2 09:30-09:45</p>	<p>Processing-In-Memory 응용을 위한 임베디드 NOR 플래시 메모리에서의 로직 연산 구현 방성진¹, 안지훈¹, 채동혁¹, 구민석², 김윤¹ <i>¹서울시립대학교 전자전기컴퓨터공학과, ²인천대학교 컴퓨터공학부</i></p>
<p>TD1-K-3 09:45-10:00</p>	<p>Input-Splitting 구조가 적용된 Spiking Neural Network 시스템 설계 김재성¹, 박준성¹, 채동혁¹, 구민석², 김윤¹ <i>¹서울시립대학교 전자전기컴퓨터공학부, ²인천대학교 컴퓨터공학과</i></p>
<p>TD1-K-4 10:00-10:15</p>	<p>Memristor-Based Binary Neural Network with Boundary Condition Yeongjin Hwang, Sangwook Youn, and Hyungjin Kim <i>Department of Electronic Engineering, Inha University</i></p>



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Room E (루비 II, 5층)

T. AI 분과

[TE1-T] Artificial Intelligence I

좌장: 전동석 교수(서울대학교)

<p>TE1-T-1 09:00-09:30</p>	<p>SAPEON: High-performance AI Accelerator for High-quality AI Services Soojung Ryu <i>AI Accelerator Office, T3K, SK Telecom</i></p>
<p>TE1-T-2 09:30-09:45</p>	<p>Design and Implementation of Mean Semi-Supervised SVM Using Sequential Minimal Optimization Yongchul Jung, Mingeon Shin, Hounghun Joe, and Sungho Lee <i>Convergence-Signal SoC Research Center, KETI</i></p>
<p>TE1-T-3 09:45-10:00</p>	<p>CBP: Backpropagation with Constraint on Weight Precision Using Pseudo-Lagrange Multiplier Method Guhyun Kim and Doo Seok Jeong <i>Hanyang University</i></p>
<p>TE1-T-4 10:00-10:15</p>	<p>Energy-efficient In-Memory Computing Operation using Ternary SRAM Jihye Park, Sunmean Kim, Seokhyeong Kang <i>POSTECH</i></p>
<p>TE1-T-5 10:15-10:30</p>	<p>Weights Compression Using Pruned Block Circulant Matrices for Embedded System Haena Song and Seokhyeong Kang <i>POSTECH</i></p>



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Room F (스페이드 I, 6층)

G. Device & Process Modeling, Simulation and Reliability 분과

[TF1-G] Thin Film Devices

좌장: 장지원 교수(연세대학교), 우지용 교수(경북대학교)

<p>TF1-G-1 09:00-09:15</p>	<p>Photonic Capacitance-Voltage Technique with Empirical Distributed Capacitance Model for Characterization of Traps in AOS TFTs Ji Hee Ryu, Han Bin Yoo, Haesung Kim, Ju Young Park, Jong-Ho Bae, Sung-Jin Choi, Dae Hwan Kim, and Dong Myong Kim <i>School of Electrical Engineering, Kookmin University</i></p>
<p>TF1-G-2 09:15-09:30</p>	<p>Comprehensive DC Technique for Extraction of Threshold Voltage, Parasitic Resistances, and Mobility Enhancement Parameter in AOS TFTs Ju Young Park, Haesung Kim, Han Bin Yoo, Ji Hee Ryu, Jong-Ho Bae, Sung-Jin Choi, Dae Hwan Kim, and Dong Myong Kim <i>School of Electrical Engineering, Kookmin University</i></p>
<p>TF1-G-3 09:30-09:45</p>	<p>Multiple Stretched-Exponential Function-Based Physical Model of a Local Threshold Voltage Shift in IGZO TFTs Under Current Stress for Instability-aware Circuit Design Tae Jun Yang, Je-Hyuk Kim, Hee Jun Lee, Sung-Jin Choi, Jong-Ho Bae, Dong Myong Kim, and Dae Hwan Kim <i>School of Electrical Engineering, Kookmin University</i></p>
<p>TF1-G-4 09:45-10:00</p>	<p>Correlation of the Lateral Profile of Carrier Concentration and ΔL to V_T, and Its Dependence on Oxygen Content in IGZO TFTs Seung Joo Myoung, Chang Il Ryoo, Je-Hyuk Kim, Dong Myong Kim, Sung-Jin Choi, Jong-Ho Bae, and Dae Hwan Kim <i>School of Electrical Engineering, Kookmin University</i></p>
<p>TF1-G-5 10:00-10:15</p>	<p>Self-Heating-assisted Peroxide Generation as the Origin of Channel Width-dependent Instability of Amorphous InZnO TFTs under Current Stress Won Jung Kim, Jingyu Park, Sungju Choi, Youngjin Seo, Je-Hyuk Kim, Inseok Chae, Changil Ryoo, Dong Myong Kim, Sung-Jin Choi, Jong-Ho Bae, and Dae Hwan Kim <i>School of Electrical Engineering, Kookmin University</i></p>
<p>TF1-G-6 10:15-10:30</p>	<p>AC Analysis of Anisotropic In-Plane Carrier Transport in 2-Dimensional Layered Materials Hyunjin Ji¹, Gwanmu Lee², and Dongseok Suh² ¹Department of Electrical Engineering, University of Ulsan, ²Department of Energy Science, Sungkyunkwan University</p>



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Room G (스페이드 II+III, 6층)

J. Nano-Science & Technology 분과 [TG1-J] Neuromorphic Electronics I

좌장: 조병진 교수(충북대학교)

<p>TG1-J-1 09:00-09:15</p>	<p>Artificial Neuron based on SiO_x Nanorod Structured Memristor for Probabilistic Computing Application Sanghyeon Choi¹, Gwang Su Kim^{1,2}, Jehyeon Yang¹, Haein Cho¹, Chong-Yun Kang^{1,2}, and Gunuk Wang^{1,3} ¹KU-KIST Graduate School of Converging Science and Technology, Korea University, ²Electronic Materials Research Center, KIST, ³Department of Integrative Energy Engineering, Korea University</p>
<p>TG1-J-2 09:15-09:45</p>	<p>Ferroelectric Materials for Memory and Neuromorphic Device Applications Jang-Sik Lee Department of Materials Science and Engineering, POSTECH</p>
<p>TG1-J-3 09:45-10:00</p>	<p>Effect of HfO₂ Passivation Layer on Photosynaptic Functionality of InGaZnO Synaptic Device Seyoung Oh¹ and Byungjin Cho^{1,2} ¹Department of Advanced Material Engineering, Chungbuk National University, ²Department of Urban, Energy, Environmental Engineering, Chungbuk National University</p>
<p>TG1-J-4 10:00-10:15</p>	<p>Synaptic Device based on Resistive Switching Memory Using Single Walled Carbon Nanotube Dong Jun Jang, Hyunwoo Ryu, Hyeonjin Cha, Na-Young Lee, Younglae Kim, and Min-Woo Kwon Department of Electric Engineering, Gangneung-Wonju National University</p>
<p>TG1-J-5 10:15-10:30</p>	<p>Organic Ion Reservoirs for Synaptic Memory Devices Dongshin Kim, Ik-Jyae Kim, and Jang-Sik Lee Department of Materials Science and Engineering, POSTECH</p>



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Room H (하트 I, 6층)

E. Compound Semiconductors 분과

[TH1-E] Compound Semiconductor I

좌장: 민병규 책임(ETRI)

<p>TH1-E-1 09:00-09:15</p>	<p>Monolithic 3D Integration of InGaAs HEMTs on Si CMOS for Analog/RF-Digital Mixed-Signal IC Jaeyong Jeong¹, Seong Kwang Kim¹, Jongmin Kim², Dae-Myeong Geum¹, Juyeong Park³, Jae-Hyung Jang^{3,4}, and Sanghyeon Kim¹ ¹School of Electrical Engineering, KAIST, ²Division of Device Technology, KANC, ³School of Electrical Engineering and Computer Science, GIST, ⁴School of Energy Engineering, KENTECH</p>
<p>TH1-E-2 09:15-09:30</p>	<p>Enhancement-mode AlGaIn/GaN HEMT Fabricated without Plasma Etching Process Won-Ho Jang, Jun-Hyeok Yim, Tea-Hyun Kim, and Ho-Young Cha School of Electrical and Electronic Engineering, Hongik University</p>
<p>TH1-E-3 09:30-09:45</p>	<p>Growth of AlGaIn/GaN HEMTs with AlGaIn Buffers on 100 & 150 mm SiC Substrates Dong Hyun Kim¹, Changhoon Song¹, Sang Tae Lee¹, Chuyoung Cho¹, Keun Man Song¹, Deoksoo Park¹, Won-Ho Jang², Ho-Young Cha², Junhyeok Lee³, Kyeongjae Lee³, Min Han³, Sang Min Lee³, Kyungho Park¹, and Chan-Soo Shin¹ ¹KANC, ²School of Electronic and Electrical Engineering, Hongik University, ³Wavice</p>
<p>TH1-E-4 09:45-10:00</p>	<p>Wafer-bonded InGaAs PhotoFET with Metal Gate Reflector on Si Soo Seok Kang, Dae-Hwan Ahn, Inho Lee, Won Jun Choi, Jindong Song, and Jae-Hoon Han Center for Opto-Electronic Materials and Devices, KIST</p>
<p>TH1-E-5 10:00-10:15</p>	<p>Wafer Bow Control of 150 mm AlGaIn/GaN HEMTs on Si for Power Devices Dong Hyun Kim, Haeyong Jeong, Byunghee Son, Changhoon Song, Sang Tae Lee, Keun Man Song, Deoksoo Park, Chan-Soo Shin, and Kyungho Park KANC</p>
<p>TH1-E-6 10:15-10:30</p>	<p>Effect of Plasma Treatment to AlGaIn/GaN HEMTs on SiC substrate Ju-Won Shin¹, Ki-Yong Shin¹, Walid Amir¹, Takuya Hoshi², Takuya Tsutsumi², Hiroki Sugiyama², Hideaki matsuzaki², and Tae-Woo Kim¹ ¹School of Electrical, Electronic and Computer Engineering, University of Ulsan, ²NTT Device Technology Laboratories, NTT Corporation</p>



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Room I (하트 II, 6층)

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

[T11-P] Solar Energy Conversion Device

좌장: 박정웅 교수(가천대학교)

<p>T11-P-1 09:00-09:30</p>	<p>Advanced Analysis for Si PV Using Injection Dependent Lifetime and PL Imaging Technology Sungeun Park, Sang Hee Lee, Chelwook Kwon, Kwan Hong Min, Hee-eun Song, and Min-Gu Kang <i>Photovoltaics Laboratory, KIER</i></p>
<p>T11-P-2 09:30-09:45</p>	<p>Study of Monolithic Al_{0.17}Ga_{0.83}As Single Junction Solar Cell Grown on Si toward High Efficiency III-V/Si Tandem Cell Yeonhwa Kim^{1,2}, Seungwan Woo^{1,3}, Rafael Chu^{1,2}, Jae-Hoon Han¹, In-Hwan Lee³, Won Jun Choi¹, and Daehwan Jung^{1,2} ¹Center for Opto-electronic Materials and Devices, KIST, ²Division of Nano and Information Technology, KIST School at University of Science and Technology, ³Department of Materials Science and Engineering, Korea University</p>
<p>T11-P-3 09:45-10:00</p>	<p>High Contrast Visualization of Defects in Charge Transport Layers of Perovskite Solar Cells by Fluorescence Quenching Hannah Kwon¹, Hyejun Kim¹, Hyun Chul Kim¹, Seok Joon Kwon², and In Soo Kim¹ ¹Nanophotonics Research Center, KIST, ²School of Chemical Engineering, Sungkyunkwan University</p>
<p>T11-P-4 10:00-10:15</p>	<p>An Accurate and Dither-Free Maximum Power Point Tracking (MPPT) Algorithm for Photovoltaic Cells Byoung Kyu Kim¹, Jaeha Kim² ¹Inter-University Semiconductor Research Center, Seoul National University, ²Department of Electrical and Computer Engineering, Seoul National University</p>
<p>T11-P-5 10:15-10:30</p>	<p>Electrical and Thermal Circuit Model for CIGS Photovoltaic Module Yongki Kim¹, Myunghun Shin¹, Myeong-jin Lee¹, and Yoonmook Kang² ¹Korea Aerospace University, ²Korea University</p>



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Room J (하트 III, 6층)

B. Patterning 분과

[TJ1-B] 포토리소그래피 I

좌장: 이진균 교수(인하대학교), 김명웅 교수(인하대학교)

<p>TJ1-B-1 09:00-09:30</p>	<p>극자외선 노광 공정, 소재 개발을 위한 평가 기술과 인프라 이상설 포항가속기연구소, 포항공과대학교</p>
<p>TJ1-B-2 09:30-10:00</p>	<p>Quantum Manipulated Metal Oxo Cluster Networks for EUV Resist Hyun-Dam Jeong Department of Chemistry, Chonnam National University</p>
<p>TJ1-B-3 10:00-10:15</p>	<p>Line-Edge Roughness from Extreme Ultraviolet Lithography to Fin-Field-Effect-Transistor: Computational Study Sang-Kon Kim The Faculty of Liberal Arts, Hongik University</p>
<p>TJ1-B-4 10:15-10:30</p>	<p>Machine Learning을 활용한 SRAF Printing 예측 Modeling 기술 개발 Sung Ho Kim, Jin Ho Yang, Sung Woo Ko, and Cheol Kyun Kim SK Hynix</p>



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Room K (다이아몬드 I, 6층)

F. Silicon and Group-IV Devices and Integration Technology 분과 [TK1-F] Novel Device Characterization

좌장: 김경록 교수(UNIST), 신창환 교수(성균관대학교)

<p>TK1-F-1 09:00-09:30</p>	<p>Self-Healing of Gate Dielectric by the Electro-Thermal Effect in MOSFETs Jun-Young Park <i>Chungbuk National University</i></p>
<p>TK1-F-2 09:30-09:45</p>	<p>Snapback Breakdown of MOSFETs Including Self-Heating Effects Siyoun Lee¹, Seong-Yeon Kim², Haesoon Oh², Jaesung Sim², and Woo Young Choi¹ ¹<i>Department of Electronic Engineering, Sogang University, ²SK Hynix</i></p>
<p>TK1-F-3 09:45-10:00</p>	<p>Temperature Dependence of SONOS Tunnel Field-Effect Transistors Jang Woo Lee, Jae Seung Woo, and Woo Young Choi <i>Department of Electronic Engineering, Sogang University</i></p>
<p>TK1-F-4 10:00-10:15</p>	<p>Design Optimization of Negative Capacitance Field-Effect Transistor (NCFET) with Hetero-Metal-Gate to Suppress the Reverse Drain-Induced Barrier Lowering Jae Yeon Park, Seungwon Go, Shinhee Kim, and Sangwan Kim <i>Department of Electrical and Computer Engineering, Ajou University</i></p>
<p>TK1-F-5 10:15-10:30</p>	<p>Experimental Observation of Negative Differential Transconductance in MOSFET + Ferroelectric Capacitor Gwon Kim, Gisu Youm, and Changhwan Shin <i>Department of Electrical and Computer Engineering, Sungkyunkwan University</i></p>



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2022년 1월 24일(월)~ 26일(수) | 강원도 하이원 그랜드호텔(컨벤션타워)

2022년 1월 25일(화), 09:00-10:30

Room L (다이아몬드 II, 6층)

C. Material Growth & Characterization 분과

[TL1-C] 산화물 I

좌장: 김태헌 교수(울산대학교)

<p>TL1-C-1 09:00-09:30</p>	<p>Metal-organic Pulsed Laser Deposition for Highly Stoichiometric Complex Oxide Thin Films Jung-Woo Lee¹ and Chang-Beom Eom² <i>¹KIURI institute, Yonsei University, ²University of Wisconsin-Madison</i></p>
<p>TL1-C-2 09:30-09:45</p>	<p>Diffusion of Vanadium and Yttrium is Responsible for the Degradation of Vanadium Oxide Films Deposited on Y-Stabilized ZrO₂ above 500°C Songhee Choi¹, J. Oh², J.-H. Lee², J. H. Jang², and Shinbuhm Lee¹ <i>¹DGIST, ²Korea Basic Science Institute</i></p>
<p>TL1-C-3 09:45-10:00</p>	<p>Unified Design Principle of Correlated Transparent Conductors Youngkyoung Ha¹, J. Byun², J. Lee², and Shinbuhm Lee¹ <i>¹DGIST, ²Pusan National University</i></p>
<p>TL1-C-4 10:00-10:15</p>	<p>Switching Voltage Scaling in Ferroelectric Devices via Oxygen Scavenging Bong Ho Kim¹, Songhyeon Kuk¹, Seong Kwang Kim¹, Joon Pyo Kim¹, Dae-Myeong Geum¹, Seung-Hyub Baek², and Sanghyeon Kim¹ <i>¹School of Electrical Engineering, KAIST, ²Center for Electronic Materials, KIST</i></p>
<p>TL1-C-5 10:15-10:30</p>	<p>Synthesis of High Curie Temperature Ferromagnetic Semiconductor in Strain-induced Sr₂FeReO₆ Hansol Lee and Changhee Sohn <i>Department of Energy Engineering, UNIST</i></p>



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Room A (에메랄드 1, 5층)

D. Thin Film Process Technology 분과

[TA2-D] Memory Devices

좌장: 윤성민 교수(경희대학교), 최창환 교수(한양대학교)

<p>TA2-D-1 10:45-11:00</p>	<p>Characterization of Charge-Trap Memory Thin-Films Transistors Using Engineered Al-Doped HfO₂ Charge-Trap Layers Jin-Ju Kim and Sung-Min Yoon <i>Department of Advanced Material Engineering for Information and Electronics, Kyung Hee University</i></p>
<p>TA2-D-2 11:00-11:30</p>	<p>Low Temperature Ferroelectric Hf_{0.5}Zr_{0.5}O₂ Thin Films for Future Electronic Device Applications Si Joon Kim <i>Kangwon National University</i></p>
<p>TA2-D-3 11:30-11:45</p>	<p>Atomic Layer Deposition of SrTiO₃/BaTiO₃ Thin Films for DRAM Capacitor Applications Jae Deock Jeon^{1,2}, Heung-Yoon Choi^{1,2}, Seo Young Jang^{1,2}, Ju Young Sung^{1,2}, Hye Min Lee^{1,2}, Wangu Kang³, Jeong Hwan Han³, and Sang Woon Lee^{1,2} ¹<i>Department of Energy Systems Research, Ajou University</i>, ²<i>Department of Physics, Ajou University</i>, ³<i>Department of Materials Science and Engineering, Seoul National University of Science and Technology</i></p>
<p>TA2-D-4 11:45-12:00</p>	<p>Noise Perspective of Top Gate Last Processed IGZO Devices with Oxygen Tunnel Structure Y. Yoon¹, S. Subhechha², E. Simoen², R. Delhougne², and G. S. Kar² ¹<i>SK Hynix</i>, ²<i>IMEC</i></p>
<p>TA2-D-5 12:00-12:15</p>	<p>The Effect of Post-depositing Annealing on the Electrical Properties ZrO₂/Al₂O₃/ZrO₂ Thin Films Jinseok Hwang and Il-Kwon Oh <i>Department of Electrical and Computer Engineering, Ajou University</i></p>
<p>TA2-D-6 12:15-12:30</p>	<p>Enhanced Electrical Properties of Al-Doped TiO₂ Capacitor Dielectric Film on the TiN Electrode by Adopting Atomic Layer Deposited Ru Interlayer Dae Seon Kwon, Tae Kyun Kim, Junil Lim, Haengha Seo, Heewon Paik, and Cheol Seong Hwang <i>Department of Materials Science and Engineering and Inter-University Semiconductor Research Center, Seoul National University</i></p>



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Room B (에메랄드 II+III, 5층)

D. Thin Film Process Technology 분과

[TB2-D] Area-selective Growth

좌장: 김우희 교수(한양대학교), 김정환 교수(한밭대학교)

<p>TB2-D-1 10:45-11:15</p>	<p>Fundamentals of Bottom-up Fabrication of Selective Patterns for Semiconductor Devices Il-Kwon Oh <i>Department of Electrical and Computer Engineering, Ajou University</i></p>
<p>TB2-D-2 11:15-11:30</p>	<p>Inherently Area-Selective Atomic Layer Deposition of Device-Quality $\text{Hf}_{1-x}\text{Zr}_x\text{O}_2$ Thin Films through Catalytic Local Activation Hyo-Bae Kim, Jeong-Min Lee, Woo-Hee Kim, and Ji-Hoon Ahn <i>Department of Materials Science and Chemical Engineering, Hanyang University</i></p>
<p>TB2-D-3 11:30-11:45</p>	<p>Inhibitor-Free Area-Selective Atomic Layer Deposition of SiO_2 through Chemoselective Adsorption of an Aminodisilane Precursor on Oxide versus Nitride Substrates Jeong-Min Lee¹, Jinseon Lee¹, Hongjun Oh², Bonggeun Shong², Tae Joo Park¹, and Woo-Hee Kim¹ ¹<i>Department of Materials Science and Chemical Engineering, Hanyang University,</i> ²<i>Department of Chemical Engineering, Hongik University</i></p>
<p>TB2-D-4 11:45-12:00</p>	<p>Area-Selective Atomic Layer Deposition of HfO_2 for RRAM Device Fabrication Chae-Young Song, Ae-Rim Choi, and Il-Kwon Oh <i>Department of Electrical and Computer Engineering, Ajou University</i></p>
<p>TB2-D-5 12:00-12:15</p>	<p>Small Precursor Inhibitors for Area Selective Deposition of Ru on Cu and SiO_2 Sumaira Yasmeen, Bon Wook Gu, Minsung Kim, Young Ho Kang, and Han-Bo-Ram Lee <i>Incheon National University</i></p>
<p>TB2-D-6 12:15-12:30</p>	<p>Area-Selective Atomic Layer Deposition of SiO_2 Thin Films to Confer Oxide Versus Nitride Selectivity Jinseon Lee¹, Jeong-Min Lee¹, Hongjun Oh², Bonggeun Shong², Tae Joo Park¹, and Woo-Hee Kim¹ ¹<i>Hanyang University,</i> ²<i>Hongik University</i></p>



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Room C (사파이어 I, 5층)

I. MEMS & Sensor Systems 분과

[TC2-I] Sensing Module for Healthcare

좌장: 김정현 교수(광운대학교), 김혁 교수(서울시립대학교)

<p>TC2-I-1 10:45-11:15</p>	<p>Skin-integrated Haptic Interfaces for Virtual and Augmented Reality Yei Hwan Jung <i>Hanyang University</i></p>
<p>TC2-I-2 11:15-11:45</p>	<p>Soft Electronics for Neural and Skin Interfaced Technology Sang Min Won <i>Department of Electrical and Computer Engineering, Sungkyunkwan University</i></p>
<p>TC2-I-3 11:45-12:00</p>	<p>Extended-Gate Type pH and Sodium Sensors with an Integrated Reference Electrode Sang-Chan Park and Jae-Hyuk Ahn <i>Department of Electronics Engineering, Chungnam National University</i></p>
<p>TC2-I-4 12:00-12:15</p>	<p>ZnO 나노로드 구조를 이용한 고감도 Piezoelectric 압력센서 김기남, 정준교, 성재영, 고운산, 변준호, 이도연, 이가원 <i>충남대학교 전자공학과</i></p>
<p>TC2-I-5 12:15-12:30</p>	<p>Aptamer-functionalized Si-Nanonet Electrolyte-Gate Field-Effect Transistor (EGT) for Detection of SARS-CoV-2 Virus Seonghwan Shin, Sangwon Kim, Wonyeong Choi, Kihyun Kim, Sungkey Jang, and Jeong-Soo Lee <i>Department of Electrical Engineering, POSTECH</i></p>



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Room D (사파이어 II+III, 5층)

K. Memory (Design & Process Technology) 분과

[TD2-K] RRAM I

좌장: 김윤 교수(서울시립대학교), 김성준 교수(동국대학교)

<p>TD2-K-1 10:45-11:15</p>	<p>Organic-Based Artificial Synapses for Artificial Nervous Systems Hea-Lim Park <i>Department of Materials Science and Engineering, Seoul National University of Science and Technology</i></p>
<p>TD2-K-2 11:15-11:45</p>	<p>Trap-Assisted Tunneling via Gaussian Distribution of Trap States for ReRAM Compact Model Sungyeop Jung <i>Advanced Institute of Convergence Technology, Seoul National University</i></p>
<p>TD2-K-3 11:45-12:00</p>	<p>Parylene-C 저항 변화 물질 기반의 RRAM Crossbar Array 김조은¹, 김보람¹, 권희태¹, 채동혁¹, 구민석², 박동욱¹, 김윤¹ <i>¹서울시립대학교 전자전기컴퓨터공학과, ²인천대학교 컴퓨터공학부</i></p>
<p>TD2-K-4 12:00-12:15</p>	<p>Flexible Self-rectifying Memristive 32 x 32 Crossbar Array for Wearable Neuromorphic Application Younghyun Lee, Geunyoung Kim, and Kyung Min Kim <i>Department of Materials Science and Engineering, KAIST</i></p>
<p>TD2-K-5 12:15-12:30</p>	<p>Effect of Post Annealing on Long-term and Short-term Schottky Barrier Modulations in Pd/IGZO/SiO₂/p⁺-Si Memristors Donguk Kim, SeungHun Baek, Hee Jun Lee, Tae Jun Yang, Jong-Ho Bae, Sung-Jin Choi, Dong Myong Kim, and Dae Hwan Kim <i>School of Electrical Engineering, Kookmin University</i></p>



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Room E (루비 II, 5층)

T. AI 분과

[TE2-T] Artificial Intelligence II

좌장: 김정래 교수(성균관대학교)

<p>TE2-T-1 10:45-11:15</p>	<p>Recent Advances in Deep Learning Accelerators Jungwook Choi <i>Hanyang University</i></p>
<p>TE2-T-2 11:15-11:30</p>	<p>DNN Quantization by Variance for Inference Seungtae Kim and Jongsun Park <i>Department of Electrical Engineering, Korea University</i></p>
<p>TE2-T-3 11:30-11:45</p>	<p>Procuring Design Factors for Efficient Si-base Quantum Logic Operations with Bayesian Optimization Chanhui Lee¹, Ji-Hoon Kang², Taehyun Yoon¹, Sungbin Lim¹, and Hoon Ryu² <i>¹UNIST, ²KISTI</i></p>
<p>TE2-T-4 11:45-12:00</p>	<p>Design of A Real-Time Object Recognition System Using An Embedded AI Processor Won Sik Jeong, Kwonneung Cho, and Seung Eun Lee <i>Department of Electronic Engineering, Seoul National University of Science and Technology</i></p>
<p>TE2-T-5 12:00-12:15</p>	<p>Optimization of Die Defect Pattern Detection Using CNN Woo Hyun Jung, Jong Won Moon, Jae Hyeok Sa, and Min Wook Hwang <i>Catholic University</i></p>



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Room F (스페이드 I, 6층)

G. Device & Process Modeling, Simulation and Reliability 분과

[TF2-G] Logic Devices and Reliability

좌장: 홍성민 교수(GIST), 백록현 교수(POSTECH)

<p>TF2-G-1 10:45-11:15</p>	<p>Knowledge-Based Neural Compact Model for Semiconductor Device Modeling Soogine Chong, Chanwoo Park, Ye Sle Cha, Chul-Heung Kim, and Hyunbo Cho <i>Alsemy Inc.</i></p>
<p>TF2-G-2 11:15-11:30</p>	<p>Explicit Surface-Potential Based Compact Model of Negative-Capacitance FETs with MFIS for Accelerated SPICE Simulation Ju-Hyun Shim and Ji-Woon Yang <i>Department of Electronics and Information Engineering, Korea University</i></p>
<p>TF2-G-3 11:30-11:45</p>	<p>Sensitivity Analysis of each Inner Spacer Thickness Variation in Sub 3-nm Node Silicon Nanosheet Field-Effect Transistors Sanguk Lee, Jun-Sik Yoon, Jinsu Jeong, Seunghwan Lee, Junjong Lee, Jaewan Lim, and Rock-Hyun Baek <i>Department of Electrical Engineering, POSTECH</i></p>
<p>TF2-G-4 11:45-12:00</p>	<p>FDSOI-Based Polarity Gate-Less Reconfigurable FET Dong Hyeok Lee¹ and Jiwon Chang² ¹<i>Department of Materials Science & Engineering, Yonsei University, </i>²<i>Department of System Semiconductor Engineering, Yonsei University</i></p>



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Room G (스페이드 II+III, 6층)

J. Nano-Science & Technology 분과

[TG2-J] 2D Materials

좌장: 이관형 교수(서울대학교), 왕건욱 교수(고려대학교)

<p>TG2-J-1 10:45-11:00</p>	<p>Observation of Negative Differential Resistance in Ambipolar Multilayered Black Phosphorus without Heterojunctions Yeeun Kim^{1,2}, Chulmin Kim³, Takhee Lee², Gyu-Tae Kim³, and Min-Kyu Joo^{1,4} ¹Department of physics, Sookmyung Women's University, ²Department of physics and Astronomy, Seoul National University, ³School of Electrical Engineering, Korea University, ⁴Department of Applied Physics, Sookmyung Women's University</p>
<p>TG2-J-2 11:00-11:30</p>	<p>Giant 2D Single-Crystalline Metallic Nanosheets: Synthesis and Applications Tae-Wook Kim Department of Flexible and Printable Electronics, Jeonbuk National University</p>
<p>TG2-J-3 11:30-11:45</p>	<p>High-performance Field-effect-transistor based on MOCVD Grown Bismuth-oxy-chalcogenides Hyun-Jun Chai¹, Minsoo Kang¹, Hu Young Jeong², and Kibum Kang¹ ¹KAIST, ²UNIST</p>
<p>TG2-J-4 11:45-12:00</p>	<p>Carrier Transport Analysis on Hexagonal WS₂ Field Effect Transistor Jungchun Kim¹, Donghyun Kim¹, Dong Geun Park¹, Seunghee Jin¹, Seain Bang¹, Min Jung Kim¹, Seoyeon Choi¹, Kiseok Heo¹, Gwang Hwi An², Hyun Seok Lee², and Jae Woo Lee¹ ¹Department of Electronics and Information Engineering, Korea University, ²Department of Physics, Chungbuk National University</p>
<p>TG2-J-5 12:00-12:15</p>	<p>Remote Molecular Surface Charge Transfer Doping in MoS₂ Field-Effect Transistors Juntae Jang¹, Jae-Keun Kim², Jiwon Shin¹, Jaeyoung Kim¹, Kyeong-Yoon Baek¹, Jaehyoung Park¹, Keehoon Kang³, Kyungjune Cho⁴, and Takhee Lee¹ ¹Department of Physics and Astronomy, Seoul National University, ²Max-Planck Institute of Microstructure Physics, ³Department of Materials Science and Engineering, Yonsei University, ⁴Soft Hybrid Materials Research Center, KIST</p>
<p>TG2-J-6 12:15-12:30</p>	<p>Gas-Phase Alkali Metal-Assisted MOCVD Growth of 2D Transition Metal Dichalcogenides for Large-Scale Precise Nucleation Control Tae Soo Kim¹, Krishna P. Dhakal², Eunpyo Park³, Gichang Noh^{1,3}, Hyun-Jun Chai¹, Youngbum Kim², Saeyoung Oh^{5,6}, Hu Young Jeong^{5,6}, Sunghwan Bang⁴, Joon Young Kwak³, Jeongyong Kim², and Kibum Kang¹ ¹Department of Materials Science and Engineering, KAIST, ²Department of Energy Science, Sungkyunkwan University, ³Center for Electronic Materials, KIST, ⁴Materials & Production Engineering Research Institute, LG Electronics, ⁵Central Research Facilities, UNIST ⁶Department of Materials Science and Engineering, UNIST</p>



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Room H (하트 I, 6층)

E. Compound Semiconductors 분과 [TH2-E] Compound Semiconductor II

좌장: 차호영 교수(홍익대학교)

<p>TH2-E-1 10:45-11:00</p>	<p>Sub-30 nm In_xGa_{1-x}As High-Electron Mobility Transistors with a Record Combination of $f_T = 706$ GHz and $f_{max} = 962$ GHz Hyeon-Bhin Jo¹, Seung-Won Yun¹, Ji-Hoon Yoo¹, Hyeon-Seok Jung¹, Wan-Soo Park¹, In-Geun Lee¹, Sethu Merin George¹, Sang-Kuk Kim², Jacob Yun², Ted Kim², Takuya Tsutsumi³, Hiroki Sugiyama³, Hideaki Matsuzaki³, and Dae-Hyun Kim¹ ¹<i>School of Electronic and Electrical Engineering, Kyungpook National University</i>, ²<i>QSI</i>, ³<i>NTT Device Technology Laboratories</i></p>
<p>TH2-E-2 11:00-11:30</p>	<p>Ga₂O₃ Schottky Barrier Diodes and Their Ultraviolet Photodiodes You Seung Rim <i>Department of Intelligent Mechatronics Engineering, and Convergence Engineering for Intelligent Drone, Sejong University</i></p>
<p>TH2-E-3 11:30-11:45</p>	<p>Enhancement-mode β-Ga₂O₃ MOSFET with Source Field Plate Soo-jin Park, Chan-Hee Jang, Gökhan Atmaca, and Ho-Young Cha <i>School of Electronic and Electrical Engineering, Hongik University</i></p>
<p>TH2-E-4 11:45-12:00</p>	<p>Enhancement of the on Current of InGaAs TFETs by Using an In-rich Pocket Ji-Min Baek¹, Seung-Won Yun¹, Su-Min Choi¹, Ji-Hoon Yoo¹, Hyo-Jin Kim¹, Hyo-Yeol Lee¹, Minwoo Kong², Joohee Oh³, Sang Tae Lee⁴, Hyun-chul Jang⁴, Changhun Song^{4,5}, Kwang-Seok Seo^{2,4}, Dae-Hong Ko⁵, Chan-Soo Shin⁴, Hyungsub Kim³, Tae-Woo Kim⁶, and Dae-Hyun Kim¹ ¹<i>School of Electronic and Electrical Engineering, Kyungpook National University</i>, ²<i>Seoul National University</i>, ³<i>Sungkyunkwan University</i>, ⁴<i>KANC</i>, ⁵<i>Yonsei University</i>, ⁶<i>University of Ulsan</i></p>
<p>TH2-E-5 12:00-12:15</p>	<p>Ultrabroadband Emission from an InP-based Laser Enabled by InAs Quantum Dashes and InGaAs Barriers Rafael Jumar Chu^{1,2}, Yeonhwa Kim^{1,2}, Hosung Kim³, Seungwan Woo^{1,4}, Won Jun Choi¹, and Daehwan Jung^{1,2} ¹<i>Center for Opto-electronic Materials and Devices, KIST</i>, ²<i>Division of Nano and Information Technology, KIST School at University of Science and Technology</i>, ³<i>ETRI</i>, ⁴<i>Department of Materials Science and Engineering, Korea University</i></p>
<p>TH2-E-6 12:15-12:30</p>	<p>Accurate Extraction of drain-induced-barrier-lowering in FETs Su-Min Choi, In-Geun Lee, Hyeon-Bhin Jo, and Dae-Hyun Kim <i>School of Electronic and Electrical Engineering, Kyungpook National University</i></p>



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Room I (하트 II, 6층)

P. Device for Energy (Solar Cell, Power Device, Battery, etc.) 분과 [T12-P] Solar Energy Conversion & Next Generation Battery

좌장: 박성은 박사(KIER), 유상우 교수(경기대학교)

<p>T12-P-1 10:45-11:15</p>	<p>Epitaxially Grown Crystalline Silicon Wafer Using a Self-Releasing Bottom-Up Seed Layer Ji-Eun Hong¹, Yonghwan Lee², Sung-In Mo¹, Hye-Seong Jeong^{1,3}, Jeong-Ho An¹, Hee-eun Song⁴, Jihun Oh⁵, Junhyeok Bang³, Joon-Ho Oh¹, and Ka-Hyun Kim³ ¹Ulsan Advanced Energy Technology R&D Center, KIER, ²Convergence Materials Research Center, Innovative Technology Research Division, GERI, ³Department of Physics, Chungbuk National University, ⁴Photovoltaics Laboratory, KIER, ⁵Department of Materials Science and Engineering, KAIST</p>
<p>T12-P-2 11:15-11:30</p>	<p>다양한 광 조건에 대한 역구조 유기 태양전지의 안정성 연구 이형원¹, 최효정¹, 이용주^{1,2}, Biswas Swarup¹, 김혁¹ ¹서울시립대학교 전자전기컴퓨터공학부, ²한국생산기술연구원</p>
<p>T12-P-3 11:30-11:45</p>	<p>기능성 중간층을 적용한 자가발전형 근적외선 광다이오드 이용주^{1,2}, 장효원¹, 이형원¹, Biswas Swarup¹, 김혁¹ ¹서울시립대학교 전자전기컴퓨터공학부, ²한국생산기술연구원</p>
<p>T12-P-4 11:45-12:00</p>	<p>1,200V급 Field Stop IGBT 후면에 형성된 SiO₂에 의한 전기적 특성 변화에 관한 연구 Hyeong-Seong Jo, Chang Hyeon Jo, and Ey Goo Kang Department Energy IT Engineering, Far East University</p>
<p>T12-P-5 12:00-12:15</p>	<p>Hierarchical Heterostructured Anode Materials for High-Performance Sodium-Ion Batteries Hyojun Lim^{1,2} and Sang-Ok Kim^{1,2} ¹Energy Storage Research Center, KIST, ²Division of Energy & Environment Technology, Korea University of Science and Technology</p>
<p>T12-P-6 12:15-12:30</p>	<p>N Controlled Lithium Phosphorous Oxy-nitride(LiPON) Electrolyte Coating by LiPON:LiN ALD Cycle Ratio for Enhancing Ionic Conductivity Ha Yeon Kwon, Seong Hwan Hong, and Tae Joo Park Department of Materials Science and Chemical Engineering, Hanyang University</p>



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Room J (하트 III, 6층)

B. Patterning 분과

[TJ2-B] 포토리소그래피 II

좌장: 정현담 교수(전남대학교), 이상설 박사(포항가속기연구소)

<p>TJ2-B-1 10:45-11:15</p>	<p>Development of Photolithographic Process based on Fluorinated Photoresists for High Resolution OLED Display Byung Jun Jung¹ and Jin-kyun Lee² ¹University of Seoul, ²Inha University</p>
<p>TJ2-B-2 11:15-11:45</p>	<p>Effective Production of Copolymers for Chemically Amplified Resists Enabled by Continuous Flow Polymerization Myungwoong Kim¹, Jin-Kyun Lee², Jiyeong Yeo¹, Jihoon Woo², Seungyeon Choi¹, and Kiyong Kwon² ¹Department of Chemistry and Chemical Engineering, Inha University, ²Department of Polymer Science and Engineering, Inha University</p>
<p>TJ2-B-3 11:45-12:00</p>	<p>Characterization of Chemical Reaction of EUV Exposed HSQ Resist with Micro-to Nano-infrared Spectroscopy Jiho Kim¹, IL Hyoung Lee², Kanghyun Kim¹, Dong Gun Lee², Boknam Chae¹, and Sangsul Lee¹ ¹Phohang Accelerator Laboratory, POSTECH, ²ESOL, Inc.</p>
<p>TJ2-B-4 12:00-12:15</p>	<p>Fluorinated Extreme UV Resists based on Radical Chemistry Ye-Jin Ku¹, Sangsul Lee², Byung Jun Jung³, and Jin-Kyun Lee¹ ¹Program in Environment and Polymer Engineering, Inha University, ²Pohang Accelerator Laboratory, POSTECH, ³Department of Materials Science and Engineering, University of Seoul</p>
<p>TJ2-B-5 12:15-12:30</p>	<p>노광 공정 중 EUV 펄리클의 EUV 투과도 저하 원인 연구 위성주^{1,3}, 김하늘^{1,3}, 김창수^{2,3}, 강영우^{1,3}, 김원진^{1,3}, 안진호^{1,2,3} ¹한양대학교 신소재공학과, ²한양대학교 나노융합과학과, ³EUV-IUCC (Industry University Collaboration Center)</p>



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Room K (다이아몬드 I, 6층)

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

[TK2-F] 2D Device Technology

좌장: 김경록 교수(UNIST), 이용규 마스터(삼성전자)

<p>TK2-F-1 10:45-11:15</p>	<p>2D Materials based Atomic Memory and RF Switches Myungsoo Kim <i>Department of Electrical Engineering, UNIST</i></p>
<p>TK2-F-2 11:15-11:30</p>	<p>MoS₂ Thin-Film Transistor with the Gate Stack of Metal-Ferroelectric(Hf_{0.5}Zr_{0.5}O)-Insulator(Al₂O₃) Gisu Youm and Changhwan Shin <i>Department of Electrical and Computer Engineering, Sungkyunkwan University</i></p>
<p>TK2-F-3 11:30-11:45</p>	<p>Effective Work-function Increase Observed in Al/SiO₂/Si Junction with Graphene Interlayer at Al/SiO₂ Interface Wonho Song¹, Jung-Yong Lee², Junhyung Kim¹, Jinyoung Park¹, Eunseok Hyun¹, and Kibog Park^{1,3} <i>¹Department of Physics, UNIST, ²SKKU Quantum Information Research Support Center, Sungkyunkwan University, ³Department of Electrical Engineering, UNIST</i></p>
<p>TK2-F-4 11:45-12:00</p>	<p>Experimental Study of the Impact of Hf_{0.5}Zr_{0.5}O₂ Film Deposition Temperature on Endurance Characteristics Hyeonjung Park, and Changhwan Shin <i>Department of Electrical and Computer Engineering, Sungkyunkwan University</i></p>
<p>TK2-F-5 12:00-12:15</p>	<p>Highly Reliable Electrical Extraction of Density of Grain Boundary States from the Ultrathin Poly-Si MOSFET Channel Inyoung Lee¹, Kyung Song², Seungmin Lee³, Il Hwan Cho¹, and Seongjae Cho³ <i>¹Department of Electronic Engineering, Myongji University, ²Materials Modeling and Characterization Department, KIMS, ³Department of Electronic Engineering, Gachon University</i></p>
<p>TK2-F-6 12:15-12:30</p>	<p>Impact of Plasma Power on Slow Trap Density in Al₂O₃/GeO_x/Ge Structure 이진우, 한승민, 안대환, 한재훈 <i>KIST</i></p>



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Room L (다이아몬드 II, 6층)

C. Material Growth & Characterization 분과

[TL2-C] 2D Materials

좌장: 김튼튼 교수(울산대학교)

<p>TL2-C-1 10:45-11:15</p>	<p>Epitaxial Chalcogenide Films and Their Band Structure Properties Young Jun Chang¹, In Hak Lee², and Byoung Ki Choi^{1,3} <i>¹Department of Physics and Smart Cities, University of Seoul, ²Center for Spintronics, KIST, ³Advanced Light Source, Lawrence Berkeley National Laboratory</i></p>
<p>TL2-C-2 11:15-11:30</p>	<p>Thru-Hole Epitaxy as an Alternative to Remote Epitaxy Dongsoo Jang¹, Chulwoo Ahn², Youngjun Lee¹, Seungjun Lee¹, Hyunkyu Lee², Donghoi Kim², Young-Kyun Kwon^{1,2}, Jaewu Choi², and Chinkyoo Kim^{1,2} <i>¹Department of Physics, Kyung Hee University, ²Department of Information Display, Kyung Hee University</i></p>
<p>TL2-C-3 11:30-11:45</p>	<p>High Growth Rate of β-Ga₂O₃ Epitaxial Layer Grown on (001) β-Ga₂O₃ Substrate by Suppressing a Pre-reaction of Precursors Hyeong-Yun Kim^{1,2}, Sunjae Kim^{1,3}, Jae-Hyeong Lee^{1,4}, Min-Ji Oh¹, Ji-Hyeon Park¹, and Dae-Woo Jeon¹ <i>¹KICET, ²Pukyong National University, ³Korea Aerospace University, ⁴Andong National University</i></p>
<p>TL2-C-4 11:45-12:00</p>	<p>Large-scale Growth of Si-doped α-Ga₂O₃ by HVPE Jae-Hyeong Lee^{1,2}, Sunjae Kim^{1,3}, Hyeong-Yun Kim^{1,4}, Min-Ji Oh¹, Dae-Woo Jeon¹, and Ji-Hyeon Park¹ <i>¹KICET, ²Andong National University, ³Korea Aerospace University, ⁴Pukyong National University</i></p>
<p>TL2-C-5 12:00-12:15</p>	<p>Growth Issue for Realization of High-Q Hexagonal Boron Nitride Microresonator by Direct Growth Method Jaehyun Park¹ and Paul E. Barclay² <i>¹Materials Architecturing Research Center, KIST, ²Institute for Quantum Science and Technology, University of Calgary</i></p>



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Room A (에메랄드 I, 5층)

D. Thin Film Process Technology 분과 [TA3-D] Emerging Devices

좌장: 권세훈 교수(부산대학교), 전우진 교수(경희대학교)

<p>TA3-D-1 16:00-16:15</p>	<p>Remote Doping of Octadecylphosphonic Acid Self-Assembled Monolayer Enabling High-Performance IGZO/p-Si Heterojunction Photodetectors Dong Hyun Lee and Hocheon Yoo <i>Department of Electronic Engineering, Gachon University</i></p>
<p>TA3-D-2 16:30-16:45</p>	<p>Li-Nb-O Family Deposited by Atomic Layer Deposition (ALD) for Artificial Synapse Hyun Seung Choi, Hye Rim Kim, Su Yong Park, and Tae Joo Park <i>Department of Materials Science and Chemical Engineering, Hanyang University</i></p>
<p>TA3-D-3 16:45-17:00</p>	<p>Optically Programmable Multi-State Small Molecules Memory Transistors with Channel Thickness Dependent Characteristics Seongjae Kim, Juhyung Seo, Taehyun Park, and Hocheon Yoo <i>Department of Electronic Engineering, Gachon University</i></p>
<p>TA3-D-4 17:00-17:15</p>	<p>Atomic Layer Deposited Li-Based Memristor Devices for Neuromorphic Computing Hye Rim Kim¹, Hyun Seung Choi¹, Su Youg Park¹, Gun Hwan Kim², and Tae Joo Park¹ ¹<i>Department of Materials Science and Chemical Engineering, Hanyang University,</i> ²<i>Division of Advanced Materials, KRICT</i></p>
<p>TA3-D-5 17:15-17:30</p>	<p>Photo-Induced Synaptic Behavior of Oxide Transistor with Dual Gate Dielectrics Jung Wook Lim^{1,2} and Min A Park¹ ¹<i>ETRI,</i> ²<i>Department of Advanced Device Engineering, UST</i></p>
<p>TA3-D-6 17:30-17:45</p>	<p>Solution-processed Carbon Nanotube Network Transistors with Controlled Channel Process Conditions Hanbin Lee, Ju Won Jeon, Yongwoo Lee, Dong Myong Kim, Dae Hwan Kim, Jong-Ho Bae, and Sung-Jin Choi <i>School of Electrical Engineering, Kookmin University</i></p>



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Room B (에메랄드 II+III, 5층)

D. Thin Film Process Technology 분과

[TB3-D] Thin Films Process I

좌장: 이용규 교수(명지대학교), 엄태용 선임(KRICT)

<p>TB3-D-1 16:00-16:30</p>	<p>Atomic Craft of Materials Enabled by Atomic Layer Deposition for Electronics and Energy Applications Byung Joon Choi <i>Department of Materials Science and Engineering, Seoul National University of Science and Technology</i></p>
<p>TB3-D-2 16:30-16:45</p>	<p>Thermoelectric Performance Enhancement by Insertion of ZnO Thin Film on SnSe Powders Myeong Jun Jung, Ye Bin Weon, Ji Young Park, Ye Jun Yun, Jongmin Byun, and Byung Joon Choi <i>Department of Materials Science and Engineering, Seoul National University of Science and Technology</i></p>
<p>TB3-D-3 16:45-17:00</p>	<p>Atomic Layer Deposition of TiO₂ Thin Films Using a Novel Ti-precursor, CpTi(OⁱBu)₃, for DRAM Capacitors on Various Substrates Jonghyun Kim¹, Daeun Lim¹, Yeji Lee¹, Yumi Wang², Hongseok Jang², Suhjong Yun², and Woongkyu Lee¹ <i>¹Myongji University, ²Oceanbridge Co., Ltd.</i></p>
<p>TB3-D-4 17:00-17:15</p>	<p>PEALD with Post-Treatments for Interface Improvement of HfO₂-Based Metal-Insulator-Semiconductor Structures Jongseo Park¹, Kyeong-keun Choi², Bohyeon Kang¹, Jehyun An¹, and Rock-Hyun Baek¹ <i>¹Department of Electrical Engineering, POSTECH, ²National Institute for Nanomaterials Technology (NINT), POSTECH</i></p>
<p>TB3-D-5 17:15-17:30</p>	<p>Atomic Layer Deposition of GeTe/Sb₂Te₃ Superlattice for Large-Capacity and Low-Power Phase Change Memory Chanyoung Yoo¹, Jeong Woo Jeon¹, Woohyun Kim¹, Wonho Choi¹, Byongwoo Park¹, Gwangsik Jeon¹, Sangmin Jeon¹, Yoon Kyeung Lee², and Cheol Seong Hwang¹ <i>¹Department of Materials Science and Engineering and Inter-University Semiconductor Research Center, Seoul National University, ²Division of Advanced Materials Engineering, Jeonbuk National University</i></p>
<p>TB3-D-6 17:30-17:45</p>	<p>Adsorption Mechanism of Dimethylaluminum Isopropoxide on Al₂O₃ Sehee Kim, Miso Kim, and Bonggeun Shong <i>Chemical Engineering, Hongik University</i></p>



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Room C (사파이어 I, 5층)

K. Memory (Design & Process Technology) 분과

[TC3-K] Ferroelectric Memory

좌장: 배종호 교수(국민대학교), 이선우 교수(인하공업전문대학)

<p>TC3-K-1 16:00-16:15</p>	<p>Tuning Operating Range of Organic Field Effect Transistors through Control of Gate Dielectric Layer Thickness Yongju Lee^{1,2}, Hyo Won Jang¹, Boram Kim¹, Swarup Biswas¹, Yoon Kim¹, and Hyeok Kim¹ ¹School of Electrical and Computer Engineering, CS4, University of Seoul, ²Applied Robot R&D Department, KITECH</p>
<p>TC3-K-2 16:15-16:30</p>	<p>Investigation of Tungsten Electrode Effect on Ferroelectricity of ALD-Hf_{0.5}Zr_{0.5}O₂ Thin Films Jeong Gyu Yoo¹, Jaidah Mohan², Yong Chan Jung², Namhun Kim^{2,3}, Hyo Jeong Kim¹, Hye Ryeon Park¹, Min Kwan Cho¹, Heber Hernandez-Arriaga², Harrison Sejoon Kim², Rino Choi³, Jiyoung Kim², and Si Joon Kim¹ ¹Kangwon National University, ²The University of Texas at Dallas, ³Inha University</p>
<p>TC3-K-3 16:30-16:45</p>	<p>전기장 사이클링을 통한 Hf_xZr_{1-x}O₂박막의 상전이영역으로의 결정화 유도 Kim, S.¹, Moon, S. G.², Park, W. Y.², Im, K.¹, and Cho, B. J.¹ ¹KAIST, ²SK Hynix</p>
<p>TC3-K-4 16:45-17:00</p>	<p>Effect of Oxygen Content in IGZO Channels on Ferroelectric Memory Properties Hyojin Yang, Sung-jin Choi, Dong Myong Kim, Daewoong Kwon, Dae Hwan Kim, and Jong-Ho Bae School of Electrical Engineering, Kookmin University</p>
<p>TC3-K-5 17:00-17:15</p>	<p>Large Memory-Window (>5V), Multi-Bit Operation (8 states), High Speed (<20ns) and High Endurance (10⁹) Ferroelectric FET and High CDE/CFE Stack for 3D Ferroelectric NAND Flash Memory Giuk Kim, Sangho Lee, Taehyong Eom, and Sanghun Jeon School of Electrical Engineering, KAIST</p>
<p>TC3-K-6 17:15-17:30</p>	<p>Strategies for High-Performance and High-Endurance HfO₂-Based Ferroelectric Field Effect Transistor Memory Taeho Kim, Junghyeon Hwang, Giuk Kim, Minhyun Jung, and Sanghun Jeon School of Electrical Engineering, KAIST</p>
<p>TC3-K-7 17:30-17:45</p>	<p>Investigation of Ferroelectric Properties of Hf_{0.5}Zr_{0.5}O₂ Thin Films according to Annealing Conditions Hye Ryeon Park¹, Hyo Jeong Kim¹, Yong Chan Jung², Jaidah Mohan², Sung Min Rho³, Min Seong Kim³, Jeong Gyu Yoo¹, Min Kwan Cho¹, Heber Hernandez-Arriaga², Jin-Hyun Kim², Harrison Sejoon Kim², Hyun Jae Kim³, Jiyoung Kim², and Si Joon Kim¹ ¹Kangwon National University, ²The University of Texas at Dallas, ³Yonsei University</p>



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Room D (사파이어 II+III, 5층)

K. Memory (Design & Process Technology) 분과

[TD3-K] RRAM II

좌장: 곽준영 박사(KIST), 강대웅 담당(SK 하이닉스)

<p>TD3-K-1 16:00-16:15</p>	<p>Demonstration of Sneak Current-Based A* Pathfinding Algorithm Yoon Ho Jang, Janguk Han, and Cheol Seong Hwang <i>Department of Materials Science and Engineering and Inter-University Semiconductor Research Center, Seoul National University</i></p>
<p>TD3-K-2 16:15-16:30</p>	<p>Reversible Multi-mode Synaptic Operation of HfAlO_x-Based Memristor for Neuromorphic Application Hyung Seok Shin, Hanchan Song, Do Hoon Kim, Alba Martinez, Woon Hyung Cheong, and Kyung Min Kim <i>KAIST</i></p>
<p>TD3-K-3 16:30-16:45</p>	<p>Coexistence of Oxygen Vacancy and Metallic Silver Electrochemically Filament Formation in ZrO₂ Based Memory Devices Jamal Aziz^{1,2} Honggyun Kim^{1,2}, and Deok-kee Kim^{1,2} <i>¹Department of Electrical Engineering, Sejong University, ²Department of Convergence Engineering for Intelligent Drone, Sejong University</i></p>
<p>TD3-K-4 16:45-17:00</p>	<p>Non-Volatile RRAM based on Single-layer hBN for Artificial Synapse Yooyeon Jo, Eunpyo Park, Gichang Noh, Jongkil Park, Jaewook Kim, Yeon Joo Jeong, Suyoun Lee, Inho Kim, Jong-Keuk Park, and Joon Young Kwak <i>KIST</i></p>
<p>TD3-K-5 17:00-17:15</p>	<p>Highly Reliable Artificial Synapse based on Two-dimensional Material - Oxide Bilayer Memristor Wonbae Ahn, Jun-Hwe Cha, Jungyeop Oh, Sanggeun Bae, and Sung-Yool Choi <i>School of Electrical Engineering, Graphene/2D Materials Research Center, Center for Advanced Materials Discovery towards 3D Displays, KAIST</i></p>
<p>TD3-K-6 17:15-17:30</p>	<p>Bipolar Gradual Resistive Switching of a Simple a-InGaZnO₄ Based Memristor Haripriya G. R., Hee Yeon Noh, Myoung-Jae Lee, and Hyeon-Jun Lee <i>Division of Nanotechnology, DGIST</i></p>
<p>TD3-K-7 17:30-17:45</p>	<p>Theoretical Analysis on the Stochastic Oscillation near NDR-2 in NbO_x-Based Threshold Switching Nano-electronic Device Hakseung Rhee, Gwangmin Kim, Jae Hyun In, Woojoon Park, Hanchan Song, and Kyung Min Kim <i>Department of Materials Science and Engineering, KAIST</i></p>



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Room G (스페이드 II+III, 6층)

J. Nano-Science & Technology 분과 [TG3-J] Functional Electronic Materials I

좌장: 강승균 교수(서울대학교)

<p>TG3-J-1 16:00-16:15</p>	<p>Tailoring the Interfacial Band Offset by the Molecular Dipole Orientation for a Molecular Heterojunction Selector Jung Sun Eo, Jaeho Shin, Sanghyun Choi, Takgyeong Jeon, Seunghoon Yang, Jaeho Lee, Chul-Ho Lee, and Gunuk Wang <i>KU-KIST Graduate School of Converging Science and Technology, Korea University</i></p>
<p>TG3-J-2 16:15-16:45</p>	<p>Overcoming Doping Challenges in Organic Electronics Keehoon Kang <i>Department of Materials Science and Engineering, Yonsei University</i></p>
<p>TG3-J-3 16:45-17:00</p>	<p>Doped Semiconductor Nanocrystal Plasmonics Shin Hum Cho <i>Department of Chemical Engineering, Keimyung University</i></p>
<p>TG3-J-4 17:00-17:15</p>	<p>CMOS-compatible 3D Ferroelectric NAND Flash Memory for Advanced Memory Applications Ik-Jyae Kim, Min-Kyu Kim, Dongshin Kim, and Jang-Sik Lee <i>Department of Materials Science and Engineering, POSTECH</i></p>
<p>TG3-J-5 17:15-17:30</p>	<p>All Solid State Transparent Supercapacitor to Overcome Transparency-Capacity Dilemma Jongseon Seo, Geonhui Han, and Daeseok Lee <i>Department of Electronic Materials Engineering, Kwangwoon University</i></p>
<p>TG3-J-6 17:30-17:45</p>	<p>Rectification Control in Vertical Structure Molecular Junctions with Ferrocene-Terminated Alkyl Molecule Wang-Taek Hwang¹, Minwoo Song¹, Jongwoo Nam¹, Changjun Lee¹, Keehoon Kang², and Takhee Lee¹ <i>¹Department of Physics and Astronomy, Seoul National University, ²Department of Material Science & Engineering, Yonsei University</i></p>



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Room I (하트 II, 6층)

P. Device for Energy (Solar Cell, Power Device, Battery, etc.) 분과 [TI3-P] Mechanical & Heat Energy Conversion Devices

좌장: 박정웅 교수(가천대학교), 유상우 교수(경기대학교)

<p>TI3-P-1 16:00-16:30</p>	<p>Sustainable Output Power Generation based on Triboelectric Nanogenerator Jeong Min Baik <i>School of Advanced Materials Science and Engineering, Sungkyunkwan University</i></p>
<p>TI3-P-2 16:30-17:00</p>	<p>Mechanical Conversion and Transmission Systems for Mechanical Triboelectric Nanogenerators (TENGs) Dukhyun Choi <i>School of Mechanical Engineering, Sungkyunkwan University</i></p>
<p>TI3-P-3 17:00-17:15</p>	<p>Eco-Friendly Fabrication of an Organic Thermoelectric Device for Green Power Source with Zero Waste Jeong Han Song, Juhjung Park, Jeehyun Jeong, and Jeonghun Kwak <i>Department of Electrical and Computer Engineering and Inter-University Semiconductor Research Center, Seoul National University</i></p>
<p>TI3-P-4 17:15-17:30</p>	<p>Impact of Processing Conditions of Semiconducting Polymers on the Enhancement of their Thermoelectric Properties Jeehyun Jeong, Juhjung Park, and Jeonghun Kwak <i>¹Department of Electrical and Computer Engineering and Inter-University Semiconductor Research Center, Seoul National University</i></p>
<p>TI3-P-5 17:30-17:45</p>	<p>Miro or Nano Structural Strategy for Thermodynamics Heat Storage System Using MgO/Mg(OH)₂ Youngho Kim^{1,2}, Noeul Kim^{1,2}, Mysung Sung Sohn^{1,2}, Yeongji Yu^{1,2}, and Hak Ki Yu^{1,2} <i>¹Department of Materials Science and Engineering, Ajou University, ²Department of Energy Systems Research, Ajou University</i></p>



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Room J (하트 III, 6층)

B. Patterning 분과

[TJ3-B] Advanced Etch Processes

좌장: 채희엽 교수(성균관대학교)

<p>TJ3-B-1 16:00-16:30</p>	<p>Etch Characteristics of SiO₂ Using Fluorinated Ether Plasmas Sanghuyn You and Chang-Koo Kim <i>Ajou University</i></p>
<p>TJ3-B-2 16:30-16:45</p>	<p>Influence of Organic Additives to Ethylenediamine on Etch Characteristics of Copper Thin Films Using High Density Plasma Eun Taek Lim, Sung Yong Park, Ji Soo Lee, Seung Hyun Kim, Hyun Mok Jeong, and Chee Won Chung <i>Department of Chemical Engineering, Inha University</i></p>
<p>TJ3-B-3 16:45-17:00</p>	<p>Isotropic Atomic Layer Etching of Al₂O₃ Using NF₃ Remote Plasma and Al Precursors Yewon Kim¹, Okhyeon Kim¹, Khabib Khumaini^{1,2}, and Won-Jun Lee¹ ¹<i>Department of Nanotechnology and Advanced Materials Engineering, Sejong University, ²Department of Chemistry, Univeritas Pertamina</i></p>
<p>TJ3-B-4 17:00-17:15</p>	<p>Low-Temperature Plasma Atomic Layer Etching of Molybdenum via Sequential Oxidation and Chlorination Yebin Lee¹, Yongjae Kim², Hyeongwu Lee², Jiwon Son³, and Heeyeop Chae^{1,2} ¹<i>School of Chemical Engineering, Sungkyunkwan University, ²SKKU Advanced Institute of Nanotechnology (SAINT), Sungkyunkwan University, ³Mechatronics R&D Center, Samsung Electronics Co., Ltd.</i></p>
<p>TJ3-B-5 17:15-17:30</p>	<p>Ar/C₄F₆ 혼합 가스와 ICP-RF bias system 에서의 플라즈마 특성 분석을 통한 원자층 식각에 대한 연구 Min Young Yoon^{1,2}, Hee Jung Yeom¹, Jung Hyung Kim¹, Won Chegal¹, Yong Jai Cho¹, Deuk-Chul Kwon³, Jong-Ryul Jeong², and Hyo-Chang Lee¹ ¹<i>KRISS, ²Department of Materials Science & Engineering, Chungnam National University, ³Korea Institute of Fusion Energy (KFE)</i></p>
<p>TJ3-B-6 17:30-17:45</p>	<p>Photolithographically Defined Copolymeric Surfaces Enabling Perovskite Pattern Formation Sol An¹, Geemin Kim¹, Seok Ki Hyeong², Seoung Ki Lee² and Naechul Shin¹, and Myungwoong Kim¹ ¹<i>Department of Chemistry and Chemical Engineering, Inha University, ²Institute of Advanced Composite Materials, KIST</i></p>



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Room K (다이아몬드 I, 6층)

F. Silicon and Group-IV Devices and Integration Technology 분과 [TK3-F] Advanced Process Technology

좌장: 김경록 교수(UNIST)

<p>TK3-F-1 16:00-16:30</p>	<p>Highly Reliable 28-nm Embedded Flash Process for High-density and High-speed Automotive Grade-1 (-40~150°C) Applications Yong Kyu Lee, Jaehun Lee, HyunJin Shin, MyeongHee Oh, and Changmin Jeon <i>Foundry Business, Samsung Electronics Co., Ltd</i></p>
<p>TK3-F-2 16:30-16:45</p>	<p>Hybrid MIM Capacitor in 45-nm Embedded Flash Process for Touch IC DongHwi Hwang, SoJeong Jeon, Hyunik Park, Jaehun Lee, Jongsung Woo, Kyongsik Yeom, Changmin Jeon, Youngho Kim, and Yong Kyu Lee <i>Foundry Business, Samsung Electronics Co., Ltd.</i></p>
<p>TK3-F-3 16:45-17:00</p>	<p>Dopant Activation of Ga implanted SiGe/SiGe:B by Nanosecond Laser Annealing Kiseok Lee, Seunghyun Baik, Joosung Kang, Dongmin Yoon, So Young Kim, Hyerin Shin, Jin Woo Moon, Dongchan Suh, Heungsoo Park, and Dae-Hong Ko <i>Department of Materials Science and Engineering, Yonsei University</i></p>
<p>TK3-F-4 17:00-17:15</p>	<p>Effects of Nanosecond Laser Annealing on the Evolution of Microstructures and Strain Behaviors in the SiGe Epitaxial Films Grown on Nano-structured Si Wafer Chunghee Jo¹, Yongjoon Choi¹, Dongmin Yoon¹, So Young Kim¹, Hyerin Shin¹, Dong Chan Suh², Heungsoo Park², and Dae-Hong Ko¹ ¹Department of Material Science and Engineering, Yonsei University, ²BIO-IT Micro Fab Center, Yonsei University</p>
<p>TK3-F-5 17:15-17:30</p>	<p>Process Simplification of Nanosheet FET with Doped Ultra-Thin Layer on Substrate Khwang-Sun Lee and Jun-Young Park <i>Chungbuk National University</i></p>
<p>TK3-F-6 17:30-17:45</p>	<p>Approach for Ge-Rich SiGe Growth Using Ge Deposited by PVD Method Unhyun Im and Sangwan Kim <i>Department of Electrical and Computer Engineering, Ajou University</i></p>



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Room L (다이아몬드 II, 6층)

C. Material Growth & Characterization 분과

[TL3-C] Post Si

좌장: 장영준 교수(서울시립대학교)

<p>TL3-C-1 16:00-16:30</p>	<p>Nanoarchitecture of Mixed Dimensional Heterostructures for Optoelectronic Device Applications Kunook Chung <i>Department of Physics, UNIST</i></p>
<p>TL3-C-2 16:30-17:00</p>	<p>Remote Epitaxial Growth of Semiconductor Microrods for Fabricating Releasable and Deformable Lighting Devices Young Joon Hong <i>Department of Nanotechnology and Advanced Materials Engineering, Sejong University</i></p>
<p>TL3-C-3 17:00-17:15</p>	<p>Investigation of Electrical Properties of 2H-Si Microwire Seung-Heon Shin¹, Kyoung Hwa Kim², Gang Seok Lee², Jae Hak Lee², Hyung Soo Ahn², and Ho-Young Cha¹ <i>¹School of Electrical and Electronic Engineering, Hongik University, ²Department of Electronic Material Engineering, Korea Maritime and Ocean University</i></p>
<p>TL3-C-4 17:15-17:30</p>	<p>Fabrication of Defectless Epitaxial Si/SiGe Multi-Layers for 3D-DRAMs Jae-Cheon Yong¹, Dong-Chan Suh², Yongjoon Choi¹, Choonghee Jo¹, Ki-Seok Lee¹, Dong-Min Yoon¹, Hye-Rin Shin¹, Yong-Sang Jo³, Keong-Joon Kim³, Beck-Mo Son³, Jeongho Lee³, Heungsoo Park², and Dae-Hong Ko¹ <i>¹Department of Material Science and Engineering, Yonsei University, ²BIO-IT Micro Fab Center, Yonsei University, ³WONIK IPS Co., Ltd.</i></p>
<p>TL3-C-5 17:30-17:45</p>	<p>Heterojunction Silicon Photovoltaic Cell Applying Conductive Filament Doowon Lee and Hee-Dong Kim <i>Department of Electrical Engineering, and Convergence Engineering for Intelligent Drone, Sejong University</i></p>



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Room A (에메랄드 I, 5층)

D. Thin Film Process Technology 분과

[WA1-D] Thin Film Process II

좌장: 최병준 교수(서울과학기술대학교), 송봉근 교수(홍익대학교)

<p>WA1-D-1 09:00-09:15</p>	<p>HfO₂ Films Having Wide ALD Window Using a Novel Heteroleptic Hf Precursor by Plasma-Enhanced Atomic Layer Deposited Wan-Ho Choi¹, Hohoon Kim², Younghun Byun², and Jin-Seong Park¹ ¹Division of Materials Science and Engineering, Hanyang University, ²Mecaro Advanced Precursor System R&D center, MECARO Co., Ltd.</p>
<p>WA1-D-2 09:15-09:30</p>	<p>Enhanced Characteristics of HfO₂ Deposited by Atomic Layer Deposition Using Novel Precursor with Improved Thermal Stability Seung Won Lee, Min Ji Jeong, and Ji-Hoon Ahn Department of Materials Science and Chemical Engineering, Hanyang University</p>
<p>WA1-D-3 09:30-09:45</p>	<p>Improved PEALD ZrO₂ Film Properties Using Hollow Cathode Plasma Source Chang Ik Choi, Jae Chan Park, Seung Won Lee, Min Ji Jung, Ji Hoon Ahn, and Tae Joo Park Department of Materials Science and Chemical Engineering, Hanyang University</p>
<p>WA1-D-4 09:45-10:00</p>	<p>Improvement of Electrical Properties of ALD ZrO₂ Driven by Controlling Surface Reaction with Plasma Source Ae Rim Choi, Yeon Je Yoo, and Il Kwon Oh Department of Electrical and Computer Engineering, Ajou University</p>
<p>WA1-D-5 10:00-10:15</p>	<p>The Effect of Al₂O₃ Passivation Layer between ZrO₂/Ge Substrate Depending on Annealing Temperature Byoung Jun Won, Geun Ha Oh, and Il-Kwon Oh Department of Electrical and Computer Engineering, Ajou University</p>
<p>WA1-D-6 10:15-10:30</p>	<p>Substrate-dependent Selective Atomic Layer Etching of Metal Oxides Jeongbin Lee, Jaehong Noh, Tae Joo Park, and Woo-Hee Kim Department of Materials Science and Chemical Engineering, Hanyang University</p>



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Room B (에메랄드 II+III, 5층)

D. Thin Film Process Technology 분과

[WB1-D] Two-dimensional Materials

좌장: 김성근 책임(KIST), 안지훈 교수(한양대학교)

<p>WB1-D-1 09:00-09:30</p>	<p>Heterojunction Band Engineering for vdW Electronics & Optoelectronics Chul-Ho Lee^{1,2} ¹<i>KU-KIST Graduate School of Converging Science and Technology, Korea University</i> ²<i>Department of Integrative Energy Engineering, Korea University</i></p>
<p>WB1-D-2 09:30-09:45</p>	<p>Wafer-scale Crystalline MoS₂ Thin Films with Controlled Morphology Using Pulsed Metal-organic Chemical Vapor Deposition at Low Temperature Jeong-Hun Choi, Min-Ji Ha, and Ji-Hoon Ahn <i>Department of Materials Science and Chemical Engineering, Hanyang University</i></p>
<p>WB1-D-3 09:45-10:00</p>	<p>Two-dimensional Electron Gas for Conductive Bridge Random Access Memory Ju Young Sung^{1,2}, Chang Hee Ko^{1,2}, Chae Hyun Lee^{1,2}, Tae Jun Seok^{3,4}, Ji Hyeon Choi^{3,4}, Tae Joo Park^{3,4}, and Sang Woon Lee^{1,2} ¹<i>Department of Energy Systems Research, Ajou University</i>, ²<i>Department of Physics, Ajou University</i>, ³<i>Department of Materials Science & Chemical Engineering, Hanyang University</i>, ⁴<i>Department of Advanced Materials Engineering, Hanyang University</i></p>
<p>WB1-D-4 10:00-10:15</p>	<p>Two-Step Atomic-Layer-Deposited GeSe₂ for High-Performance Ovonic Threshold Switch Woohyun Kim¹, Chanyoung Yoo¹, Jeong Woo Jeon¹, Wonho Choi¹, Byongwoo Park¹, Gwang Sik Jeon¹, Sangmin Jeon¹, Yoon Kyeung Lee², and Cheol Seong Hwang¹ ¹<i>Department of Materials Science and Engineering and Inter-University Semiconductor Research Center, Seoul National University</i>, ²<i>Division of Advanced Materials Engineering, Jeonbuk National University</i></p>
<p>WB1-D-5 10:15-10:30</p>	<p>Temperature-Dependent Growth of Tin Selenide (Sn_xSe_{1-x}) Thin Films by Atomic Layer Deposition Jeong Woo Jeon¹, Chanyoung Yoo¹, Woohyun Kim¹, Wonho Choi¹, Byongwoo Park¹, Gwangsik Jeon¹, Sangmin Jeon¹, Yoon Kyeung Lee², and Cheol Seong Hwang¹ ¹<i>Department of Materials Science and Engineering and Inter-University Semiconductor Research Center, Seoul National University</i>, ²<i>Division of Advanced Materials Engineering, Jeonbuk National University</i></p>



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Room C (사파이어 I, 5층)

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

[WC1-Q] Metrology, Inspection, and Yield Enhancement I

좌장: 정용우 TL(SK 하이닉스), 강상우 소장(KRISS)

<p>WC1-Q-1 09:00-09:30</p>	<p>Spatially, Temporally, and Spectrally Resolved Thermal Imaging Microscopy and Semiconductor Applications 장기수, 김동욱, 정찬배, 김정대, 한일규 한국기초과학지원연구원 연구장비개발부</p>
<p>WC1-Q-2 09:30-09:45</p>	<p>반도체 패키지 계면 상태 진단을 위한 동적 열특성 기반 비파괴 분석 기술 마병진, 정태희, 최성순, 이관훈 한국전자기술연구원</p>
<p>WC1-Q-3 09:45-10:00</p>	<p>The Faster Method to Identify the Yield Detractor by the Automated Analysis Using Volume Diagnosis Result Baekwon Choi¹, Jeongsu Park², Hyungki Kim¹, Sangjin Park¹, Junghyun Choi¹, Junwan Park², and Brad Kim² ¹SK Hynix, ²Synopsys Korea</p>
<p>WC1-Q-4 10:00-10:15</p>	<p>Optical Characterization Equipment for Manufacturing Processes of Si Semiconductor Device YoungMin Park¹, HyunDon Jung¹, DongHan Kim¹, DongHyun Jang¹, YongHee Jeon¹, GyuHyeong Cho¹, Sung-Jin Chang², Woo Sik Soun², Chil Seong Jeong², Jong-Bum You², Jin Su Kim², and Jun-Mo Yang² ¹Etamax Co., Ltd., ²National Nanofab Center</p>
<p>WC1-Q-5 10:15-10:30</p>	<p>Development of A Real-Time Contamination Particle Sensor with Sampling and Anti-Contamination Module to Measure in Various Process Environments Jongho kim^{1,2}, Jihun Mun¹, and Sang-Woo Kang^{1,2} ¹KRISS, ²UST</p>



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Room D (사파이어 II+III, 5층)

K. Memory (Design & Process Technology) 분과

[WD1-K] Artificial Neural Network Applications

좌장: 김윤 교수(서울시립대학교), 김형진 교수(인하대학교)

<p>WD1-K-1 09:00-09:15</p>	<p>Second-order Flexible Mott Neuron Gwangmin Kim, Jae Hyun In, Younghyun Lee, Hakseung Rhee, and Kyung Min Kim <i>Department of Materials Science and Engineering, KAIST</i></p>
<p>WD1-K-2 09:15-09:30</p>	<p>온 칩 학습이 가능한 Spiking RBM 뉴로모픽 칩에서의 패턴 학습, 추론, 재구성의 구현 신의철, 최원석, 고두용, 변강현, 조영운, 윤민식, 진영훈, 강재현, 이성민, 최진하, 강유경, 김현우, 박재원, 김상범 <i>서울대학교 재료공학부</i></p>
<p>WD1-K-3 09:30-09:45</p>	<p>Demonstration of Neuromodulation-inspired Stashing Algorithm for Energy-efficient Spiking Neural Network Using a Self-Rectifying Memristor Array Woon Hyung Cheong¹, Jae Bum Jeon¹, Jae Hyun In¹, Geunyoung Kim¹, Hanchan Song¹, Jangho An², Juseong Park¹, Young Seok Kim¹, and Kyung Min Kim¹ <i>¹KAIST, ²Samsung Advanced Institute of Technology (SAIT)</i></p>
<p>WD1-K-4 09:45-10:00</p>	<p>1/f Noise in Amorphous Sb₂Te₃ for Energy-Efficient Stochastic Synapses in Neuromorphic Computing Su Yeon Jang¹, Deok Young Kang², Se Jeung Choi¹, In Hyuk Choi¹, Dong Hoon Kang¹, Hyeong Jun Seo¹, Jong Un Won¹, Young Hoon Kim¹, Chang Hoon Joe¹, Young Chae Roh¹, Min Seung Kang¹, Yea Ji Park¹, and Sang Bum Kim¹ <i>¹Seoul National University, ²University of California Berkeley</i></p>



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Room E (루비 II, 5층)

U. Bio-Medical 분과

[WE1-U] 바이오-메디컬용 반도체 회로설계

좌장: 이성규 박사(ETRI), 김철 교수(KAIST)

<p>WE1-U-1 09:00-09:15</p>	<p>A 216nW, 5.49 μV_{rms} Neural Recording Amplifier Using Current-Reuse Folded Cascode OTA with a 1.37 Power Efficiency Factor Min Jae Kim, Hyun Tae Park, Jun Gyu Kim, Sang Min Song, and Sung-Yun Park <i>Pusan National University</i></p>
<p>WE1-U-2 09:15-09:45</p>	<p>A Chopper Instrument Amplifier for Wearable ExG Monitoring Devices Yongjae Park and Seong-Jin Kim <i>UNIST</i></p>
<p>WE1-U-3 09:45-10:00</p>	<p>Multi-Channel, Low Power Neural Recording IC with Wide Input Range Yi-Gyeong Kim¹, Sung Q Lee², and Hye Jin Kim³ ¹AI Processor Research Section, ETRI, ²Future & Basic Technology Research Division, ETRI, ³Intelligent Sensors Research Section, ETRI</p>
<p>WE1-U-4 10:00-10:15</p>	<p>180도 위상으로 정렬한 1차 측파대 필터들과 글리치 제거회로를 사용한 생체 이식용 초저전력 고속 비동기식 BPSK 복조기 이론과 SoC 설계 Benjamin P. Wilkerson^{1,2} ¹Department of Electrical and Computer Engineering, Inha University, ²PW Semiconductor Labs, Inc.</p>
<p>WE1-U-5 10:15-10:30</p>	<p>A Low-Power, High-Resolution, Two-Step ADC with VCO-Based Multibit Phase Domain Quantizer for Biomedical Applications Hyeon Tae Park, Joon Gyu Kim, Sang Min Song, Min Jae Kim, and Sung-Yun Park <i>Pusan National University</i></p>



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Room F (스페이스 I, 6층)

G. Device & Process Modeling, Simulation and Reliability 분과

[WF1-G] Memory Devices and Advanced Modeling

좌장: 나현철 상무(DB 하이텍), 김성호 교수(세종대학교)

<p>WF1-G-1 09:00-09:15</p>	<p>Analysis of Short-Term Retention in 3-D NAND Flash Memory Using Charge Control Pulse Scheme Donghwi Kim¹, GilSang Yoon¹, DongHyun Go¹, Junghun Park¹, Jungsik Kim², and Jeong-Soo Lee¹ <i>¹Department of Electrical Engineering, POSTECH, ²Division of Electrical Engineering, Gyeongsang National University</i></p>
<p>WF1-G-2 09:15-09:30</p>	<p>Scaling Analysis of NbO_x-Threshold Switching Devices Hyun Wook Kim^{1,2}, Sol Jin², Heebum Kang¹, Eun Ryeong Hong^{1,2}, and Jiyong Woo^{1,2} <i>¹School of Electronic and Electrical Engineering, Kyungpook National University, ²School of Electronics Engineering, Kyungpook National University</i></p>
<p>WF1-G-3 09:30-09:45</p>	<p>Variation of Electrical and Memory Characteristics of Non-Circular Cell in 3D-NAND Flash Memory DongHyun Go¹, GilSang Yoon¹, Jounghun Park¹, Dongwhi Kim¹, Jungsik Kim², and Jeong-Soo Lee¹ <i>¹Department of Electrical Engineering, POSTECH, ²Division of Electrical Engineering, Gyeongsang National University</i></p>
<p>WF1-G-4 09:45-10:00</p>	<p>Accurate Implementation of the Bernoulli Function for the Scharfetter-Gummel Scheme Jeong-Hyeon Do and Sung-Min Hong <i>School of Electrical Engineering and Computer Science, GIST</i></p>
<p>WF1-G-5 10:00-10:15</p>	<p>Physicochemical modeling of conformal coating on periodical high aspect ratio porous media via atomic layer deposition Nhat-Minh Phung^{1,2}, Sun-Young Park^{1,3}, Minh-Tan Ha^{1,2}, Soonil Lee², Se-Hun Kwon³, and Seong Min Jeong¹ <i>¹Energy Efficiency Materials Center, KICET, ²Department of Materials Science and Engineering, Changwon National University, ³School of Materials Science and Engineering, Pusan National University</i></p>
<p>WF1-G-6 10:15-10:30</p>	<p>TCAD Analysis of Single-Photon Avalanche Diodes in CMOS Technology Won-Yong Ha¹, Woo-Young Choi¹, and Myung-Jae Lee² <i>¹Department of Electrical and Electronic Engineering, Yonsei University, ²Post-Silicon Semiconductor Institute, KIST</i></p>



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Room G (스페이드 II+III, 6층)

J. Nano-Science & Technology 분과 [WG1-J] Neuromorphic Electronics II

좌장: 김태욱 교수(전북대학교), 왕건욱 교수(고려대학교)

<p>WG1-J-1 09:00-09:15</p>	<p>Artificial Stimuli-Response System Capable of Conscious Response Seongchan Kim¹, Dong Gue Roe², Yoon Young Choi³, Hwije Woo¹, Joongpill Park⁴, Jong Ik Lee⁵, Yongsuk Choi³, Sae Byeok Jo³, Moon Sung Kang⁵, Young Jae Song¹, Sohee Jeong⁴, and Jeong Ho Cho³ ¹SKKU Advanced Institute of Nanotechnology (SAINT), Sungkyunkwan University, Sungkyunkwan University, ²School of Electrical and Electronic Engineering, Yonsei University, ³Department of Chemical and Biomolecular Engineering, Yonsei University, ⁴Department of Energy Science and Center for Artificial Atoms, Sungkyunkwan University, ⁵Department of Chemical and Biomolecular Engineering, Sogang University</p>
<p>WG1-J-2 09:15-09:45</p>	<p>Sensory Neuromorphic Device Technology Je-Jun Lee, Seunghwan Seo, Ju-Hee Lee, and Jin-Hong Park Department of Electrical and Computer Engineering, Sungkyunkwan University</p>
<p>WG1-J-3 09:45-10:00</p>	<p>Artificial Synapse Devices Using the Liquid for Low Power Consumption Dongshin Kim, Ik-Jyae Kim, and Jang-Sik Lee Department of Materials Science and Engineering, POSTECH</p>
<p>WG1-J-4 10:00-10:15</p>	<p>Ion-based Synaptic Device of Alkali Ion Intercalated 2D Metal Oxide Gichang Noh^{1,2}, Jeongho Kim², Eunpyo Park¹, Yooyeon Jo¹, Hamid Reza Rasouli³, Min-kyung Jo², Talip Serkan Kasirga³, Kibum Kang², and Joon Young Kwak¹ ¹Center of Neuromorphic Engineering, KIST, ²Department of Materials Science and Engineering, KAIST, ³Department of Materials Science and Nanotechnology, Bilkent University</p>
<p>WG1-J-5 10:15-10:30</p>	<p>Hafnia-Based Ferroelectric Thin-film Transistors for Advanced Neuromorphic Applications Ik-Jyae Kim, Min-Kyu Kim, Dongshin Kim, and Jang-Sik Lee Department of Materials Science and Engineering, POSTECH</p>



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Room H (하트 I, 6층)

E. Compound Semiconductors 분과 [WH1-E] Compound Semiconductor III

좌장: 김동현 박사(KANC)

<p>WH1-E-1 09:00-09:15</p>	<p>3-levels-stacked In_{0.53}Ga_{0.47}As MBCFETs with Regrown S/D Contacts In-Geun Lee¹, Hyeon-Bhin Jo¹, Sang-Tae Lee², Minwoo Kong⁴, Ji-Min Baek¹, Seung-Won Yun¹, Hyeon-Seok Jeong¹, Wan-Soo Park¹, Ji-Hoon Yoo¹, Su-Min Choi¹, Sang-Kuk Kim³, Jae-Gyu Kim³, Jacob Yun³, Ted Kim³, Tae-Woo Kim⁵, Dae-Hong Ko⁶, Jung-Hee Lee¹, Kwang-Seok Seo⁴, Chan-Soo Shin², and Dae-Hyun Kim¹ ¹Kyungpook National University, ²Korea Advanced Nano Fab Center, ³QSI Inc., ⁴Seoul National University, ⁵University of Ulsan, ⁶Yonsei University</p>
<p>WH1-E-2 09:15-09:30</p>	<p>Trap Behavior of Metamorphic HEMTs with Pulsed IV and 1/f Noise Measurements Ki-Yong Shin¹, Ju-Won Shin¹, Walid Amir¹, Jae-Phil Shim², Sang-Tae Lee², Hyun-Chul Jang², Kyung-Ho Park², Chan-Soo Shin², and Tae-Woo Kim¹ ¹School of Electrical, Electronic and Computer Engineering, University of Ulsan, ²Korea Advanced Nano Fab Center</p>
<p>WH1-E-3 09:30-09:45</p>	<p>Microcavity-integrated Flexible Mid-infrared Photodetector with Hetero-epitaxial Growth Seungwan Woo^{1,2}, Tae Soo Kim³, Jae-Hoon Han², In-Hwan Lee¹, Eung-Beom Yeon^{1,2}, Daehwan Jung², and Won Jun Choi² ¹Department of Materials Science and Engineering, Korea University, ²Center for Opto-electronic Materials and Devices, KIST, ³School of Electrical and Electronic Engineering, Yonsei University</p>
<p>WH1-E-4 09:45-10:00</p>	<p>Metal Contact Optimization of Quantum Dot Laser for Epitaxial Lift-Off Sung-Han Jeon^{1,2}, Dae-Hwan Ahn¹, Jindong Song¹, Won Jun Choi¹, Woo-Young Choi², Daehwan Jung¹, and Jae-Hoon Han¹ ¹Center for Opto-Electronic Materials and Devices, KIST, ²Department of Electrical and Electronic Engineering, Yonsei University</p>
<p>WH1-E-5 10:00-10:15</p>	<p>Fabrication and Characterization of Normally-Off β-Ga₂O₃ Thin-Film Phototransistor with A Thickness of 8-nm Youngbin Yoon¹, Youngki Kim¹, Wan Sik Hwang², and Myunghun Shin¹ ¹School of Electronics and Information Engineering, Korea Aerospace University, ²Department of Materials Engineering, Korea Aerospace University</p>
<p>WH1-E-6 10:15-10:30</p>	<p>Trap Analysis of AlGaIn/GaN HEMT with Different Al Composition Walid Amir¹, Ju-Won Shin¹, Ki-Yong Shin¹, Surajit Chakraborty¹, Jae-Moo Kim², Chu-Young Cho², Kyung-Ho Park², Takuya Hoshi³, Takuya Tsutsumi³, Hiroki Sugiyama³, Hideaki Matsuzaki³, and Tae-Woo Kim¹ ¹Department of Electrical, Electronic and Computer Engineering, University of Ulsan, ²Korea Advanced Nano Fab Center, ³NTT Device Technology Laboratories, NTT Corporation</p>



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Room I (하트 II, 6층)

M. RF and Wireless Design 분과

[W11-M] RF Circuits and Wireless Systems I

좌장: 권구덕 교수(강원대학교), 권익진 교수(아주대학교)

<p>W11-M-1 09:00-09:15</p>	<p>수정된 비대칭 Wilkinson 전력분배기를 사용한 비대칭 Doherty 전력증폭기의 전력이득 및 효율 향상 Kyungdong Bae¹, Woojin Choi^{2,3}, and Youngoo Yang^{2,3} ¹Department of Electronic and Electrical Engineering, Sungkyunkwan University, ²Department of Electrical and Computer Engineering, Sungkyunkwan University, ³para-PA Inc.</p>
<p>W11-M-2 09:15-09:30</p>	<p>복수의 Back-off 확장 Parameter를 이용한 3.4-3.8 GHz 대역 Doherty 전력 증폭기 Seungmin Woo¹ and Youngoo Yang^{1,2} ¹Department of Electrical and Computer Engineering, Sungkyunkwan University, ²para-PA inc.</p>
<p>W11-M-3 09:30-09:45</p>	<p>3.5 – 3.8 GHz GaN HEMT Doherty Power Amplifier with Minimized Electrical Length of Load Matching Network Jongjin Park¹, Woojin Choi^{1,2}, and Youngoo Yang^{1,2} Department of Electronic and Electrical Engineering, Sungkyunkwan University</p>
<p>W11-M-4 09:45-10:00</p>	<p>트랜지스터 기생성분이 포함된 출력 정합 및 2차 고조파 정합 네트워크를 이용한 광대역 Doherty 전력 증폭기 Soohyun Bin¹, Woojin Choi^{2,3}, and Youngoo Yang^{2,3} ¹Department of Electronic and Electrical Engineering, Sungkyunkwan University, ²Department of Electrical and Computer Engineering, Sungkyunkwan University, ³para-PA Inc.</p>
<p>W11-M-5 10:00-10:15</p>	<p>A 6.78MHz Wireless Power Transmitter with Resonant Point Racking for Battery-less Receiver Application 박현준, 남궁경호, 변영재 UNIST</p>
<p>W11-M-6 10:15-10:30</p>	<p>높은 격리 성능을 가지는 T자 구조 SPDT 스위치 설계 Sung Hwan Paik, Kyung Duck Choi, and Kang-Yoon Lee Department of Electrical and Computer Engineering, Sungkyunkwan University</p>



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Room J (하트 III, 6층)

H. Display and Imaging Technologies 분과

[WJ1-H] Imaging Technology

좌장: 권혁인 교수(중앙대학교), 전우진 교수(경희대학교)

<p>WJ1-H-1 09:00-09:30</p>	<p>Technology and Applications of Global Shutter Image Sensor Jae-kyu Lee, Jonghyun Go, Seung Sik Kim, Heesung Shim, In-Gyu Baek, Taehyoung Kim, Hongki Kim, Minwoong Seo, Chang-Rok Moon, and Hyoung-Sub Kim <i>Semiconductor R&D Center, Samsung Electronics Co., Ltd.</i></p>
<p>WJ1-H-2 09:30-10:00</p>	<p>Pseudo-High Dynamic Range CMOS Image Sensor Soo Youn Kim <i>Department of Semiconductor Science, Dongguk University</i></p>
<p>WJ1-H-3 10:00-10:15</p>	<p>Bio-inspired Curved Image Sensor for Machine Vision Applications Changsoon Choi <i>Center for Opto-Electronic Materials and Devices, KIST</i></p>
<p>WJ1-H-4 10:15-10:30</p>	<p>WSe₂/ReSe₂ van der Waals Heterostructure for Linearly Polarized Photodetection and Digital Incoherent Holography Jongtae Ahn¹, Jisu Jang¹, Seungho Song^{1,2}, Tae Wook Kim^{1,3}, Byoung-soo Yu¹, and Do Kyung Hwang¹ <i>¹Center for Opto-electronic Materials and Devices, KIST, ²Advanced Materials Science and Engineering, Sungkyunkwan University, ³School of Electrical Engineering, Korea University</i></p>



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Room K (다이아몬드 I, 6층)

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

[WK1-F] Photonic Device Technology

좌장: 조성재 교수(가천대학교)

<p>WK1-F-1 09:00-09:15</p>	<p>Capacitance Matching for a Non-volatile SIS Optical Phase Shifter with an HZO MFM Capacitor Jae-Hoon Han¹, Seung-Min Han^{1,2}, Dae-Hwan Ahn¹, Woo-Young Choi², and Jin-Dong Song¹ ¹Center for Opto-Electronic Materials and Devices, KIST, ²Department of Electrical and Electronic Engineering, Yonsei University</p>
<p>WK1-F-2 09:15-09:30</p>	<p>Free-Carrier Absorption-Assisted Photodetection Using A TiO_x/Ti/TiO_x Tri-Layer Film-Based Waveguide Bolometric Detector for Si Photonic Sensors Joon-sup Shim¹, Jinha Lim¹, Dae-Myeong Geum¹, Jong-Bum You², Joon Pyo Kim¹, Woo Jin Baek¹, Jae-Hoon Han³, and SangHyeon Kim¹ ¹KAIST, ²NNFC, ³KIST</p>
<p>WK1-F-3 09:30-09:45</p>	<p>Non-Volatile Resonance Wavelength Shift of a Si PN Ring Resonator with an HZO Ferroelectric Capacitor Seung-Min Han^{1,2}, Dae-Won Rho², Dae-Hwan Ahn¹, Jin-Dong Song¹, Woo-Young Choi², and Jae-Hoon Han¹ ¹Center for Opto-Electronic Materials and Devices, KIST, ²Department of Electrical and Electronic Engineering, Yonsei University</p>
<p>WK1-F-4 09:45-10:00</p>	<p>Performance Estimation of a Highly Efficient and Low-loss KTN Optical Phase Shifter for Silicon Photonics Seong Ui An, Yu Shin Kim, Seung Hyeon Han, and Younghyun Kim Department of Photonics and Nanoelectronics, BK21 FOUR ERICA-ACE Center, Hanyang University</p>
<p>WK1-F-5 10:00-10:15</p>	<p>Avalanche Mode LED based on CMOS Technology Doyoon Eom^{1,2}, Woo-Young Choi¹, and Myung-Jae Lee² ¹Department of Electrical and Electronic Engineering, Yonsei University, ²Post-Silicon Semiconductor Institute, KIST</p>
<p>WK1-F-6 10:15-10:30</p>	<p>Guard Ring 최적화를 통한 Single-Photon Avalanche Diode의 성능 향상 Hyun-Seung Choi^{1,2}, Youngcheol Chae¹, and Myung-Jae Lee² ¹Department of Electrical and Electronic Engineering, Yonsei University, ²Post-Silicon Semiconductor Institute, KIST</p>



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Room L (다이아몬드 II, 6층)

C. Material Growth & Characterization 분과

[WL1-C] 산화물 II

좌장: 이정우 교수(연세대학교)

<p>WL1-C-1 09:00-09:30</p>	<p>Rational Design of Semiconducting Metal Oxides for Highly Selective Chemical Sensors Ji-Soo Jang <i>¹Center for Electronic Materials, KIST</i></p>
<p>WL1-C-2 09:30-09:45</p>	<p>Hot Electron Tunneling in Ultrathin Oxide Heterostructures for Enhanced Photodetection Jaeyoung Jeon and Hyungwoo Lee <i>Ajou University</i></p>
<p>WL1-C-3 09:45-10:00</p>	<p>Atomic-Scale Observation of Interfacial Reconstruction at Bi₂O₂Se/SrTiO₃ Heterostructure Using Aberration-Corrected TEM Han Beom Jeong¹, Yoonsu Shim¹, Minsoo Kang¹, Kibum Kang¹, Jong Min Yuk¹, and Hu Young Jeong² <i>¹KAIST, ²UNIST</i></p>
<p>WL1-C-4 10:00-10:15</p>	<p>In situ Probing of Tunneling Electroresistance Switching on Ferroelectric Tunnel Junction Min-Hyoung Jung¹, Hyun il Seo¹, Panithan Sriboriboon¹, Yunseok Kim¹, Woo Seok Choi¹, Young-Min Kim¹, and Hu Young Jeong² <i>¹Sungkyunkwan University, ²UNIST</i></p>
<p>WL1-C-5 10:15-10:30</p>	<p>Electrocatalytic Surface with Sub-surface Activity in Manganese Oxide Heterostructures Jegon Lee¹, Prajwal Adiga², Sang A Lee³, Seung Hyun Nam¹, Hyeon-Ah Ju⁴, Min-Hyong Jung⁴, Hu Young Jeong⁵, Young-Min Kim⁴, Cindy Wong², Radwan Elzein², Rafik Addou², Kelsey A. Stoerzinger², and Woo Seok Choi¹ <i>¹Department of Physics, Sungkyunkwan University, ²School of Chemical, Biological and Environmental Engineering, Oregon State University, ³Department of Physics, Pukyong National University, ⁴Department of Energy Science, Sungkyunkwan University, ⁵Central Research Facilities and School of Materials Science and Engineering, UNIST, ⁶Physical Sciences Division, Pacific Northwest National Laboratory</i></p>



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Room A (에메랄드 1, 5층)

D. Thin Film Process Technology 분과 [WA2-D] Thin Film Process - Metallic Films

좌장: 한정환 교수(서울과학기술대학교), 최병준 교수(서울과학기술대학교)

<p>WA2-D-1 10:45-11:15</p>	<p>Atomic Layer Deposition Processes Using Newly Synthesized Precursors with Reactivity Enhanced Ligands Taeyong Eom <i>Thin Film Materials Research Center, KRICT</i></p>
<p>WA2-D-2 11:15-11:30</p>	<p>Ultra-Low Resistivity Mo₂C Thin Films Deposited by Plasma-Enhanced Atomic Layer Deposition Using A Novel Precursor Min-Ji Ha, Jeong-Hun Choi, and Ji-Hoon Ahn <i>Department of Materials Science and Chemical Engineering, Hanyang University</i></p>
<p>WA2-D-3 11:30-11:45</p>	<p>Fabrication of Multicomponent RuAlO_x Thin Films through Atomic Layer Modulation Ngoc Le Trinh¹, Chi Thang Nguyen¹, Bonwook Gu¹, Byungchan Lee¹, Mingyu Lee¹, Sehee Kim², Bonggeun Shong², and Han-Bo-Ram Lee¹ ¹<i>Department of Materials Science and Engineering, Incheon National University,</i> ²<i>Department of Chemical Engineering, Hongik University</i></p>
<p>WA2-D-4 11:45-12:00</p>	<p>Atomic Layer Deposition of Low-resistivity Molybdenum Nitride Using Two Types of F-free Mo Precursors and NH₃ Plasma Wangu Kang, Ji Sang Ahn, and Jeong Hwan Han <i>Department of Materials Science and Engineering, Seoul National University of Science and Technology</i></p>
<p>WA2-D-5 12:00-12:15</p>	<p>Highly Conductive, Dense, and Cl-free TiN_x Thin Film as a Cu Diffusion Barrier by Hollow Cathode Plasma Atomic Layer Deposition Ha Young Lee, Min Gyoo Cho, Jae Hee Go, Jeong Hwan Han, and Byung Joon Choi <i>Department of Materials Science and Engineering, Seoul National University of Science and Technology</i></p>
<p>WA2-D-6 12:15-12:30</p>	<p>Self-ionized Sputtering Technology of BEOL Metallization Byeong-Hwa_Jeong^{1,3}, Yukata-Kokaze³, Sang-Ho_Lee³, and Geun-Young_Yeom^{1,2} ¹<i>School of Advanced Materials Science and Engineering, Sungkyunkwan University,</i> ²<i>SKKU Advanced Institute of Nano Technology (SAINT), Sungkyunkwan University,</i> ³<i>Korea Institute for Super Materials, ULVAC Korea, Ltd.</i></p>



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Room B (에메랄드 II+III, 5층)

D. Thin Film Process Technology 분과

[WB2-D] Ferroelectrics

좌장: 박민혁 교수(서울대학교), 안지훈 교수(한양대학교)

<p>WB2-D-1 10:45-11:00</p>	<p>W 전극 위에 증착된 플루오라이트 구조 $\text{Hf}_{0.5}\text{Zr}_{0.5}\text{O}_2$ 강유전성 박막의 우수한 강유전성에 관한 연구 Kun Yang¹, Ju Yong Park¹, Dong Hyun Lee¹, Jin Joo Ryu^{3,4}, Gun Hwan Kim³, and Min Hyuk Park² ¹School of Materials Science and Engineering, Pusan National University, ²Department of Materials Science and Engineering and Inter-University Semiconductor Research Center, Seoul National University, ³Center for Thin Film Materials, KRICT, ⁴Department of Materials Science and Engineering, Yonsei University</p>
<p>WB2-D-2 11:00-11:30</p>	<p>Operando Transmission Electron Microscopy Investigation on Domain Dynamics in Two Dimensional Ferroelectric Materials Hyobin Yoo Sogang University</p>
<p>WB2-D-3 11:30-11:45</p>	<p>Theoretical Understanding of the Phase Formation in $(\text{Hf}_{1-x}\text{Zr}_x)\text{O}_2$; Effects of Composition, Thermodynamics and Kinetics Kun Hee Ye^{1,2}, Taeyoung Jeoung^{1,2}, Seungjae Yoon^{1,2}, Cheol Seong Hwang², and Jung-Hae Choi¹ ¹Electronic Materials Research Center, KIST, ²Department of Materials Science and Engineering and Inter-University Semiconductor Research Center, Seoul National University</p>
<p>WB2-D-4 11:45-12:00</p>	<p>Effects of Deposition and Annealing Temperatures on the Characteristics of $\text{Hf}_{0.5}\text{Zr}_{0.5}\text{O}_2$ Thin Film Prepared by Plasma Enhanced Atomic Layer Deposition Hak Gyeong Kim, Da Hee Hong, Jae Hoon Yu, and Hee Chul Lee Department of Advanced Materials Engineering, Korea Polytechnic University</p>
<p>WB2-D-5 12:00-12:15</p>	<p>Self-Rectifying Ferroelectric Tunnel Junction by Imprint Field Engineering Youngjin Goh, Jungheon Hwang, Minki Kim, Minhyun Jung, and Sanghun Jeon Korea School of Electrical Engineering, KAIST</p>
<p>WB2-D-6 12:15-12:30</p>	<p>Ti 박막층의 Direct Scavenging Effect를 이용한 $\text{Mo}/\text{Hf}_{0.3}\text{Zr}_{0.7}\text{O}_2/\text{Si}$ Capacitor의 반강유전성 및 Endurance 특성의 개선에 대한 연구 Se Hyun Kim¹, Geun Taek Yu¹, Geun Hyeong Park¹, Dong Hyun Lee¹, Ju Yong Park¹, Kun Yang¹, and Min Hyuk Park² ¹School of Materials Science and Engineering, Pusan National University, ²Department of Materials Science and Engineering and Inter-University Semiconductor Research Center, Seoul National University</p>



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Room C (사파이어 I, 5층)

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

[WC2-Q] Metrology, Inspection, and Yield Enhancement II

좌장: 강상우 소장(KRISS), 정용우 TL(SK 하이닉스)

<p>WC2-Q-1 10:45-11:15</p>	<p>Inline Convergence AFM Solutions 2022 for Semiconductor Industry Byoung-Woon Ahn, Ah-Jin Jo, and Sang-Joon Cho <i>Park Systems Co., Ltd.</i></p>
<p>WC2-Q-2 11:15-11:30</p>	<p>메모리소자의 나노미터 Trench 구조 계측을 통한 소자특성 분석 Haeri Kim, Dayeon Choi, Kyujin Choi, and Kyu Chan Shim <i>Research and Development Division, SK Hynix</i></p>
<p>WC2-Q-3 11:30-11:45</p>	<p>나노인덴테이션을 이용한 DRAM Low-k 박막 기계적 물성 분석 김재현 <i>SK Hynix</i></p>
<p>WC2-Q-4 11:45-12:00</p>	<p>기계 학습을 활용한 HAR 구조의 Profile 계측 배군호 <i>Advanced MI, SK Hynix</i></p>
<p>WC2-Q-5 12:00-12:15</p>	<p>TiN Film Growth Phase Monitoring Using Spectroscopic Ellipsometry Yong Woo Jung, Rae Seo Lee, Jin Ho Kim, Yu Seong Gim, Dong Gi Kim, Moon Gil Jung, and Dae Jong Kim <i>Ichon DRAM Metrology & Inspection Team, SK Hynix</i></p>
<p>WC2-Q-6 12:15-12:30</p>	<p>Physically Unclonable Function based on 2D MoS₂/WS₂-FET by Measurement and Characterization of Electrical Properties Jaeseo Park^{1,2}, Minji Park¹, Jung Woo Leem³, Zahyun Ku⁴, Jun Oh Kim¹, Won Chegal¹, Sang-Woo Kang^{1,2}, and Young L. Kim³ ¹Advanced Instrumentation Institute, KRISS, ²Science of Measurement, UST, ³Weldon School of Biomedical Engineering, Purdue University, ⁴Materials and Manufacturing Directorate, Air Force Research Laboratory</p>



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Room D (사파이어 II+III, 5층)

K. Memory (Design & Process Technology) 분과 [WD2-K] Processing and Analysis of Emerging Memory

좌장: 정성엽 박사(차세대융합기술원), 전종욱 교수(건국대학교)

<p>WD2-K-1 10:45-11:15</p>	<p>van der Waals Assembled Non-volatile Memory Joonki Suh <i>Department of Materials Science and Engineering, UNIST</i></p>
<p>WD2-K-2 11:15-11:30</p>	<p>The Effect of Self-heating Effect on the Lifetime of the Time-dependent Dielectric Breakdown 임재원, 유창현, 전종욱 <i>Department of Electrical and Electronics Engineering, Konkuk University</i></p>
<p>WD2-K-3 11:30-11:45</p>	<p>Multi-Gate BCAT Structure and Select Word-Line Driver in DRAM for Reduction of GIDL Chang Young Lim, Ju Han Ryu, Young Lae Kim, and Min-Woo Kwon <i>Department of Electric Engineering, Gangneung-Wonju National University</i></p>
<p>WD2-K-4 11:45-12:00</p>	<p>Hf_xAl_{1-x}O_y 트랩 층을 사용한 전하 트랩 플래시 메모리 셀의 전하 Retention 특성 모델링 김건웅, 백승재 <i>Department of Electrical and Electronic Engineering, Hankyong National University</i></p>
<p>WD2-K-5 12:00-12:15</p>	<p>UV Light-assisted Erasing of In-Ga-Sn-O (IGTO) Thin Film Transistor with Al₂O₃/HfO₂/Al₂O₃ for the Flash Memory Application Zeli Wang¹, Hongwei Xu², Jaekyeong Jeong², and Changhwan Choi¹ ¹<i>Division of Materials Science and Engineering, Hanyang University, </i>²<i>Department of Electronic Engineering, Hanyang University</i></p>
<p>WD2-K-6 12:15-12:30</p>	<p>A Study on the Optimization Methodology of Steep-Switching Phase-FET and Its Application to 3nm Gate-All-Around Field Effect Transistor Hanggyo Jung, Yeji Lee, Jooyoung Oh, Changhyun Yoo, and Jongwook Jeon <i>Department of Electrical and Electronics Engineering, Konkuk University</i></p>



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Room E (루비 II, 5층)

U. Bio-Medical 분과

[WE2-U] 바이오-메디컬용 반도체 응용

좌장: 김철 교수(KAIST), 이성규 박사(ETRI)

<p>WE2-U-1 10:45-11:00</p>	<p>Smart-phone Based Wireless Transcranial Ultrasound Neurostimulation Using a Capacitive Micromachined Ultrasound Transducer Seonghun Cho^{1,2}, Shinyong Shim¹, Butrus T. Khuri-Yakub³, Jae-Woong Jeong², and Byung Chul Lee¹ <i>¹Creative Research Center for Brain Science, KIST, ²Department of Electrical Engineering, KAIST, ³Department of Electrical Engineering, Stanford University</i></p>
<p>WE2-U-2 11:00-11:30</p>	<p>Integrated Circuits and Microsystems for Emerging Biomedical Applications Minkyu Je KAIST</p>
<p>WE2-U-3 11:30-11:45</p>	<p>Facile and Real-Time Identification of Blood Components via Self-Powered Organic-Inorganic Heterojunction Photodetectors Taehyun Park¹ and Hocheon Yoo² <i>¹Department of Chemical and Biological Engineering, Gachon University, ²Department of Electronic Engineering, Gachon University</i></p>
<p>WE2-U-4 11:45-12:00</p>	<p>대장내시경에 진단 중 천공 발생 방지를 위한 압력센서와 신호처리 방법 강영재¹, 김세은¹, 정창호¹, 정윤호², 이문구¹ <i>¹아주대학교 공과대학, ²순천향대학교 의과대학</i></p>



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Room F (스페이드 I, 6층)

G. Device & Process Modeling, Simulation and Reliability 분과 [WF2-G] Ab-initio Simulation and Quantum Transport

좌장: 홍성민 교수(GIST), 장지원 교수(연세대학교)

<p>WF2-G-1 10:45-11:15</p>	<p>Spin Circuit Model and Its Applications Seokmin Hong <i>Center for Spintronics, KIST</i></p>
<p>WF2-G-2 11:15-11:30</p>	<p>Quantum Transport Simulation of Nanosheet FETs with Various Cross-sections Including Electron-phonon Scattering Phil-Hun Ahn and Sung-Min Hong <i>School of Electrical Engineering and Computer Science, GIST</i></p>
<p>WF2-G-3 11:30-11:45</p>	<p>Short Channel Effects Induced by the Multi-domain in Negative Capacitance Field-Effect Transistors: A Phase-field Based Quantum Transport Study Hyeongu Lee and Mincheol Shin <i>Department of Electrical Engineering, KAIST</i></p>
<p>WF2-G-4 11:45-12:00</p>	<p>Design of Noise-Robust Entangling Quantum Logic Gates Using Electrode-Driven Silicon Quantum Dot Platform Hoon Ryu and Ji-Hoon Kang <i>KISTI</i></p>
<p>WF2-G-5 12:00-12:15</p>	<p>Computational Analysis of Bi₂O₂Se-Metal Contact Sukhyeong Youn and Jiwon Chang ¹<i>Department of System Semiconductor Engineering, Yonsei University, </i>²<i>Department of Materials Science & Engineering, Yonsei University</i></p>
<p>WF2-G-6 12:15-12:30</p>	<p>Landau Coefficients Extraction of Slab BaTiO₃ in Ferroelectric-Insulator Nanocapacitors Jeonghwan Jang, Junbeom Seo, and Mincheol Shin <i>School of Electrical Engineering, KAIST</i></p>



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Room G (스페이드 II+III, 6층)

J. Nano-Science & Technology 분과

[WG2-J] Functional Electronic Materials II

좌장: 김선주 교수(중앙대학교), 왕건욱 교수(고려대학교)

<p>WG2-J-1 10:45-11:00</p>	<p>Deep-Etched Si Microstructures via Metal-Assisted Chemical Etching Sunhae Choi, Kyunghwan Kim, Haekyun Bong, and Jungwoo Oh <i>School of Integrated Technology, Yonsei University</i></p>
<p>WG2-J-2 11:00-11:30</p>	<p>Stretchable Biodegradable Materials for Waste Free Electronic Patch Seung-Kyun Kang <i>Department of Materials Science and Engineering, Seoul National University</i></p>
<p>WG2-J-3 11:30-11:45</p>	<p>Cooler-free Operation of Micro-bolometer Based on Amorphous Vanadium Oxide (a-VO_x) Thin Film Thermistor up to 120°C Dasom Wang^{1,2}, Jaeyeong Bae^{1,3}, Ho Won Jang², Donghee Park¹, and Won Jun Choi¹ ¹<i>Center for Opto-Electronic Materials and Devices, KIST</i>, ²<i>Department of Materials Science and Engineering, Seoul National University</i>, ³<i>Department of Materials Science and Engineering, Korea University</i></p>
<p>WG2-J-4 11:45-12:00</p>	<p>Transition Metal Ion Doping Enhances the Electrochemical CO₂ Reduction Efficiency of ZIF-8 Jin Hyuk Cho and Soo Young Kim <i>Korea University</i></p>
<p>WG2-J-5 12:00-12:15</p>	<p>Modified Stoner-Wohlfarth Model Using Dispersion of Magnetic Easy Axis to Apply to Magnetization Switching Behavior of FePt-C Granular Films Donghyeon Lee¹, Donghyeon Han², Seyeop Jung¹, Nyun Jong Lee¹, Suzuki Ippei³, Takahashi Yukiko³, Jungmin Park⁴, and Sanghoon Kim¹ ¹<i>Department of Physics, University of Ulsan</i>, ²<i>Materials Science and Engineering, KAIST</i> ³<i>NIMS</i>, ⁴<i>Department of Physics, KAIST</i></p>
<p>WG2-J-6 12:15-12:30</p>	<p>High-performance Stretchable Thermoelectric Generators via Reducing the Contact Resistance of Intrinsically Stretchable Electrodes Hyeon Cho¹, Dongju Jang¹, Byeongmoon Lee², Seungjun Chung², and Yongtaek Hong¹ ¹<i>Department of Electrical and Computer Engineering, Seoul National University</i>, ²<i>Soft Hybrid Materials Research Center, KIST</i></p>



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Room H (하트 I, 6층)

E. Compound Semiconductors 분과 [WH2-E] Compound Semiconductor IV

좌장: 장우진 박사(ETRI)

<p>WH2-E-1 10:45-11:15</p>	<p>Resistive-switching and Photoelectrochemical Properties of Gallium Oxide Semiconductors Heejoong Ryou¹, Sunjae Kim^{1,2}, Dahee Seo¹, Youngbin Yoon³, Myunghun Shin³, and Wan Sik Hwang^{1,2} ¹Department of Materials Science and Engineering, Korea Aerospace University, ²Smart Drone Convergence, Korea Aerospace University, ³School of Electronics and Information Engineering, Korea Aerospace University</p>
<p>WH2-E-2 11:15-11:30</p>	<p>AlGaIn/GaN 이중접합 기반 상온 동작 수소 센서 연구 Won-Tae Choi¹, Jeong-Jin Kim², Tae-Hyun Park³, Jae-Hyun Hur³, and Ho-Young Cha^{1,2} ¹School of Electronic and Electrical Engineering, Hongik University, ²Metamaterial Electronic Device Research Center, Hongik University, ³Department of Chemical and Biological Engineering, Gachon University</p>
<p>WH2-E-3 11:30-11:45</p>	<p>Phase Change of Merged n-InAs(111) Thin Films Grown by Te-assisted Nanoscale ELOG Method Chang-Hun Song^{1,2}, Minwoo Kong^{2,3}, Hyunchul Jang¹, Sang Tae Lee¹, Hyeong-Ho Park¹, Chang Zoo Kim¹, Keun Man Song¹, Shinkeun Kim¹, Youngsu Choi¹, Dae-Hong Ko², and Chan-Soo Shin¹ ¹KANC, ²Department of Material Science and Engineering, Yonsei University, ³Department of Electrical and Computer Engineering, Seoul National University</p>
<p>WH2-E-4 11:45-12:00</p>	<p>AlGaIn/GaN/AlN DH-HEMT Structure with Nano-voids Embedded AlN Buffer Grown on SiC Substrate by High-temperature MOCVD Minho Kim, Keono Kim, Seongmin Kang, Yunseok Heo, Uiho Choi, and Okhyun Nam Convergence Center for Advanced Nano Semiconductor, Department of Nano-Semiconductor Engineering, Korea Polytechnic University</p>
<p>WH2-E-5 12:00-12:15</p>	<p>Investigation on Carrier Transport of In_{0.8}Ga_{0.2}As QW HEMTs at Low Temperature Ji-Hoon Yoo, Hyeon-Seok Jeong, Wan-Soo Park, Hyeon-Bin Jo, In-Geun Lee, and Dae-Hyun Kim School of Electronic and Electrical Engineering, Kyungpook National University</p>



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Room I (하트 II, 6층)

M. RF and Wireless Design 분과

[W12-M] RF Circuits and Wireless Systems II

좌장: 권익진 교수(아주대학교), 권구덕 교수(강원대학교)

<p>W12-M-1 10:45-11:15</p>	<p>Challenges and Trends on 5G NR Communication from RF Design Point Young-Taek Lee <i>pSemi, A Murata Company</i></p>
<p>W12-M-2 11:15-11:45</p>	<p>Research Trend of Sensor Readout System in Mobile Devices Seung-hoon Ko <i>Kwangwoon University</i></p>
<p>W12-M-3 11:45-12:00</p>	<p>A Dual-Band N-Path Balun-LNA for Advanced Cellular Applications Donguk Shin and Kuduck Kwon <i>Department of Electronic Engineering, Kangwon National University</i></p>
<p>W12-M-4 12:00-12:15</p>	<p>다중 입력 구조를 이용한 저 면적 · 광대역 · 초 저잡음 증폭기 설계 Kyung Jin Lee and Kang Yoon Lee <i>Department of Electrical and Computer Engineering, Sungkyunkwan University</i></p>
<p>W12-M-5 12:15-12:30</p>	<p>A CMOS Optoelectronic Receiver for Indoor-Monitoring LiDAR Sensors Hu Yu^{1,2}, Ji-Eun Joo^{1,2}, Myung-Jae Lee³, Ji-Hoon Kim^{1,2}, and Sung Min Park^{1,2} ¹Department of Electronic and Electrical Engineering, Ewha Womans University, ²Graduate Program in Smart Factory, Ewha Womans University, ³Post-Silicon Semiconductor Institute, KIST</p>



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Room J (하트 III, 6층)

H. Display and Imaging Technologies 분과

[WJ2-H] Display Technology I

좌장: 박진성 교수(한양대학교), 임유승 교수(세종대학교)

<p>WJ2-H-1 10:45-11:15</p>	<p>Development of Digital Transformation in the Display Industry Ilho Kim, Seokwoo Lee, and Sooyoung Yoon <i>LG Display Co., Ltd.</i></p>
<p>WJ2-H-2 11:15-11:30</p>	<p>Improvement in Device Performance of Trench-Structured Vertical Thin Film Transistors with IGZO Bilayer Channel Configuration Prepared by ALD Soo Hyun Bae¹, Jong-Heon Yang², Yong-Hae Kim², Chi-Sun Hwang², Young Ha Kwon³, Nak-Jin-Seong³, Kyu-Jeong Choi³, and Sung Min Yoon¹ <i>¹Kyung Hee University, ²ETRI, ³NCD Co., Ltd.</i></p>
<p>WJ2-H-3 11:30-11:45</p>	<p>Bending Stability Analysis of Flexible Oxide Thin Film Transistor with iCVD-Based Organic Layer Tae-Seung Jung and Sang-Hun Jeon <i>School of Electrical Engineering, KAIST</i></p>
<p>WJ2-H-4 11:45-12:00</p>	<p>Plasma-enhanced Atomic Layer Deposited Indium Oxide Film Using a New Novel Liquid DMION Indium Precursor for Thin Film Transistors Su-Hwan Choi¹, Tae Hyun Hong², Seong-Hwan Ryu², Jeong Hun Kim³, Hyun Kyung Lee³, Jang Hyeon Seok³, Jung Woo Park³, and Jin-seong Park^{1,2} <i>¹Division of Nanoscale of Semiconductor Engineering, Hanyang University, ²Divison of Materials Science and Engineering, Hanyang University, ³Thin Film Materials Team, Hansol Chemical</i></p>
<p>WJ2-H-5 12:00-12:15</p>	<p>Effects of Proton Beam Irradiation on the Active Layer Thickness of IGTO Thin Film Transistor Min-Gyu Shin, Seong-Hyun Hwang, Kie Yatsu, Dong-Ho Lee, and Hyuck-In Kwon <i>School of Electrical and Electronics Engineering, Chung-Ang University</i></p>
<p>WJ2-H-6 12:15-12:30</p>	<p>Impact of Device Geometry for Improving the Device Performance of Mesa-Shaped Vertical-Channel Thin-Film Transistors Using ALD-IGZO Channel Hyun-Min Ahn¹, Soo Hyun Bae¹, Young-Ha Kwon², Nak-Jin Seong², Kyu-Jeong Choi², Jong-Heon Yang³, Yong-Hae Kim³, Chi-Sun Hwang³, and Sung-Min Yoon¹ <i>¹Kyung Hee University, ²NCD, ³ETRI</i></p>



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Room K (다이아몬드 I, 6층)

F. Silicon and Group-IV Devices and Integration Technology 분과 [WK2-F] Neuromorphic Device Application

좌장: 권대응 교수(인하대학교)

<p>WK2-F-1 10:45-11:00</p>	<p>Analysis of Bit-Error in Spiking Neural Networks According to Retention Characteristics Taejin Jang, Bosung Jeon, Kyungchul Park, and Byung-Gook Park <i>Department of Electrical Engineering, Seoul National University</i></p>
<p>WK2-F-2 11:00-11:15</p>	<p>Spike Duration Adjustable Neuron Circuit for Stable Synaptic Operation Jonghyuk Park^{1,2}, Kyungchul Park^{1,2}, Bosung Jeon^{1,2}, and Byung-Gook Park^{1,2} ¹<i>Inter-University Semiconductor Research Center (ISRC), Seoul National University,</i> ²<i>Department of Electrical and Computer Engineering, Seoul National University</i></p>
<p>WK2-F-3 11:15-11:30</p>	<p>Analog Capacitor-less Neuron Circuit Using Multi-gate Feed Back Field Effect Transistor Jun Hyeong Lee, Misun Cha, Jaehoon Shin, Jooyoung Jeon, and Min-Woo Kwon <i>Department of Electric Engineering, Gangneung-Wonju National University</i></p>
<p>WK2-F-4 11:30-11:45</p>	<p>Nanoelectromechanical Memory Switches for Binary Neural Networks Hyeontae Bang, Sangjun Lee, Jae Seung Woo, and Woo Young Choi <i>Department of Electronic Engineering, Sogang University</i></p>
<p>WK2-F-5 11:45-12:00</p>	<p>Floating Gate Based Synaptic Device Using Back Tunneling Mechanism Donghyun Ryu, Junsu Yu, and Byung-Gook Park <i>Inter-University Semiconductor Research Center (ISRC) and Department of Electrical and Computer Engineering, Seoul National University</i></p>
<p>WK2-F-6 12:00-12:15</p>	<p>Analysis of The Effect of Line Resistance in 3D Synaptic Array on The Accuracy of Spiking Neural Networks Seongbin Oh^{1,2}, Dooyong Koh^{1,2}, Soochang Lee^{1,2}, Byung-Gook Park^{1,2}, and Jong-Ho Lee^{1,2} ¹<i>Department of Electrical and Computer Engineering, Seoul National University,</i> ²<i>ISRC, Seoul National University</i></p>
<p>WK2-F-7 12:15-12:30</p>	<p>Analog Memristive Devices with an Ion-Implanted Current Limiting Layer for Neuromorphic Computing Keonhee Kim^{1,2}, Dae Cheol Kang^{1,2}, Jae Gwang Lim^{1,2}, Yeonjoo Jeong¹, Jaewook Kim¹, Suyoun Lee¹, Joon Young Kwak¹, Jongkil Park¹, Gyu Weon Hwang¹, Kyeong-Seok Lee¹, Byeong-Kwon Ju², Jong Keuk Park¹, and Inho Kim¹ ¹<i>Center for Neuromorphic Engineering, KIST,</i> ²<i>Display and Nanosystem Laboratory, School of Electrical Engineering, Korea University</i></p>



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Room L (다이아몬드 II, 6층)

C. Material Growth & Characterization 분과 [WL2-C] Advanced Characterization

좌장: 정건욱 교수(UNIST)

<p>WL2-C-1 10:45-11:15</p>	<p>Terahertz Near-field Spectroscopy for Non-contact Mapping of Electrical Properties below the Diffraction Limit Teun-Teun Kim <i>Department of Physics and Energy Harvest-Storage Research Center (EHSRC), University of Ulsan</i></p>
<p>WL2-C-2 11:15-11:30</p>	<p>Revisiting People-Bean Model with Modern Data Analytics to Quantitatively Predict Epitaxial Strain Relaxation Jin Young Oh¹, Dongwon Shin², and Woo Seok Choi¹ <i>¹Department of Physics, Sungkyunkwan University, ²Materials Science and Technology Division, Oak Ridge National Laboratory</i></p>
<p>WL2-C-3 11:30-11:45</p>	<p>Prevention of Island Formation during Low Temperature SiGe Epitaxy under Ar/H₂ Ambient Conditions Dongmin Yoon¹, Chunghee Jo¹, Yongjoon Choi¹, Hyerin Shin¹, Joosung Kang¹, Jinwoo Moon¹, Hwa-yeon Ryu¹, Kiseok Lee¹, So Young Kim¹, Seunghyun Baik¹, Dong Chan Suh², Heungsoo Park², and Dae-Hong Ko¹ <i>¹Department of Material Science and Engineering, Yonsei University, ²BIO-IT Micro Fab Center, Yonsei University</i></p>
<p>WL2-C-4 11:45-12:00</p>	<p>Diamond Schottky Barrier Diode Fabricated on High-quality Misoriented Heteroepitaxial Diamond Substrate Using Microwave Plasma Chemical Vapor Deposition Taemyung Kwak¹, Uiho Choi¹, Sanghun Han¹, Seong-woo Kim², and Okhyun Nam¹ <i>¹Department of Nano & Semiconductor Engineering, Korea polytechnic University, ²Namiki Precision Jewel Co., Ltd.</i></p>
<p>WL2-C-5 12:00-12:15</p>	<p>Lateral Growth and Facet Propagation during the Low Temperature Selective Epitaxial Growth in the Nano-structured Si Wafers 신혜린¹, 윤동민¹, 최용준¹, 조충희¹, 정기쁨³, 오훈정², 심태현³, 서동찬², 박흥수², 고대홍¹ <i>¹연세대학교 공과대학 신소재공학과, ²연세대학교 BIT Micro Fab Center, ³한양대학교 산학협력단</i></p>
<p>WL2-C-6 12:15-12:30</p>	<p>Growth and Characterization of Heteroepitaxial (001) and (111) Diamond on Ir/sapphire Structures Uiho Choi¹, Heejin Shin¹, Jongbeom Lee¹, Taemyung Kwak¹, Geunho Yoo¹, Seong-Woo Kim², and Okhyun Nam¹ <i>¹Department of Nano & Semiconductor, Korea Polytechnic University, ²Adamant Namiki Precision Jewel Co., Ltd.</i></p>



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2022년 1월 24일(월) ~ 26일(수) | 강원도 하이원 그랜드호텔(컨벤션타워)

2022년 1월 26일(수), 14:00-15:30

Room A (에메랄드 I, 5층)

D. Thin Film Process Technology 분과

[WA3-D] Device Fabrication

좌장: 김성근 책임(KIST), 이용규 교수(명지대학교)

<p>WA3-D-1 14:00-14:15</p>	<p>Buffer-free Mechanical Separation Technique Enabling Atomically Flat and Uniform Release of Target Epitaxial Layers in III-V Heterostructure Honghwi Park and Hongsik Park <i>School of Electronic and Electrical Engineering, Kyungpook National University</i></p>
<p>WA3-D-2 14:15-14:30</p>	<p>Seamless Gap-filling in 3D Nanostructure Pattern Using Gradient Area Selective Deposition Chi Thang Nguyen¹, Eun-Hyoung Cho², Jeongwoo Park³, Mingyu Lee¹, Bonwook Gu¹, Bonggeun Shong³, and Han-Bo-Ram Lee¹ ¹<i>Department of Materials Science and Engineering, Incheon National University,</i> ²<i>Nano Electronics Lab, Samsung Advanced Institute of Technology,</i> ³<i>Department of Chemical Engineering, Hongik University</i></p>
<p>WA3-D-3 14:30-14:45</p>	<p>Improved Hydrogen Sensing Window Using ZnO-decorated Pt/AlGaIn/GaN HEMT Devices Se Eun Kim^{1,2}, Seo Young Jang^{1,2}, Hye Min Lee^{1,2}, and Sang Woon Lee^{1,2} ¹<i>Department of Energy Systems Research, Ajou University,</i> ²<i>Department of Physics, Ajou University</i></p>
<p>WA3-D-4 14:45-15:00</p>	<p>Monolithic 3D 향 SOI 웨이퍼 제작을 위한 새로운 제조 공정 개발: Epitaxial Si/SiGe Bilayer 를 이용한 접합과 분리 류화연¹, 윤동민¹, 최용준¹, 조충희¹, 신혜린¹, 강주성¹, 문진우¹, 박흥수², 고대홍¹ ¹<i>Department of Materials Science and Engineering, Yonsei University,</i> ²<i>BIO-IT Micro Fab Center, Yonsei University</i></p>
<p>WA3-D-5 15:00-15:15</p>	<p>Selective Etching of Si_{1-x}Ge_x versus Si in Multi-layer Using Wet Chemical and Inductively Coupled Plasma – Reactive Ion Etching (ICP-RIE) Yongjoon Choi¹, Choonghee Jo¹, Dongmin Yoon¹, So Young Kim¹, Hyerin Shin¹, Dong Chan Suh², Heungsoo Park², and Dae-Hong Ko¹ ¹<i>Department of Materials Science and Engineering, Yonsei University,</i> ²<i>BIO-IT Micro Fab Center, Yonsei University</i></p>
<p>WA3-D-6 15:15-15:30</p>	<p>Influence of Hydrochloric Acid Incorporation on Electrical Properties of Solution-Processed Hafnium-Aluminum Oxide Gate Insulator Jeong Hyun Ahn, Tae Eun Ha, Eun Kyung Jo, Hwarim Im, and Yong-Sang Kim <i>Department of Electrical and Computer Engineering, Sungkyunkwan University</i></p>



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Room B (에메랄드 II+III, 5층)

D. Thin Film Process Technology 분과

[WB3-D] Thin Film Transistors

좌장: 한정환 교수(서울과학기술대학교), 전우진 교수(경희대학교)

<p>WB3-D-1 14:00-14:15</p>	<p>High-performance Amorphous Indium-gallium-zinc Oxide Thin-film Transistors with Split Active Layers Jeonghee Ko¹, Yongwoo Lee¹, Ju Won Jeon¹, Hanbin Lee¹, Dong Myong Kim¹, Dae Hwan Kim¹, Jong-Ho Bae¹, Min-Ho Kang², and Sung-Jin Choi¹ ¹School of Electrical Engineering, Kookmin University, ²Department of Nano-process, NNFC</p>
<p>WB3-D-2 14:15-14:30</p>	<p>Device Performance Enhancement in Oxide Thin-Film Transistors Using IZO/IGZO Dual-Channels Prepared by Atomic Layer Deposition Seo-Hyun Moon¹, Soo-Hyun Bae¹, Young-Ha Kwon², Nak-Jin Seong², Kyu-Jeong Choi², and Sung-Min Yoon¹ ¹Kyung Hee University, ²NCD Co., Ltd.</p>
<p>WB3-D-3 14:30-14:45</p>	<p>Study of Sub-gap States Related to Electrical Characteristics of Low-Temperature In-Ga-Sn-O Thin-Film Transistors with Al₂O₃ Gate Insulators Prepared by Plasma-Enhanced Atomic Layer Deposition Hyeong Wook Kim, Changyoung Oh, and Bo Sung Kim Korea University</p>
<p>WB3-D-4 14:45-15:00</p>	<p>Device Feasibility of Atomic-Layer Deposition Process for In-Ga-Sn-O Active Channels of High-Performance Thin-Film Transistor Applications Shin-Ho Noh¹, Hyo-Eun Kim¹, Young-Ha Kwon², Nak-Jin Seong², Kyu-Jeong Choi², and Sung-Min Yoon¹ ¹Kyung Hee University, ²NCD Co., Ltd.</p>
<p>WB3-D-5 15:00-15:15</p>	<p>Optimization of Zinc-Tin Oxide Thin-Film Transistors and its Applications to Organic and Metal Oxide Hybrid Complementary Inverter Circuits Juhung Seo and Hocheon Yoo Department of Electronic Engineering, Gachon University</p>
<p>WB3-D-6 15:15-15:30</p>	<p>Mobility and Reliability Study of Solution-Processed IGZO TFTs by Fluorine Diffusion of CYTOP Passivation according to Post-Annealing Temperature Tae Eun Ha, Jeong Hyun Ahn, Eun Kyung Jo, Hwarim Im, and Yong-Sang Kim Department of Electrical and Computer Engineering, Sungkyunkwan University</p>



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Room C (사파이어 I, 5층)

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

[WC3-Q] Metrology, Inspection, and Yield Enhancement III

좌장: 정용우 TL(SK 하이닉스), 강상우 소장(KRISS)

<p>WC3-Q-1 14:00-14:30</p>	<p>Unveiling Functional Oxides via Atomic Scale Imaging Si-Young Choi <i>Department of Materials Science and Engineering, POSTECH</i></p>
<p>WC3-Q-2 14:30-14:45</p>	<p>Upconversion Nanoparticles-decorated WS₂/MoS₂ Phototransistors for VIS-SWIR Broadband Image Sensor Minji Park¹, Jaeseo Park^{1,2}, Won Chegal¹, and Sang-Woo Kang^{1,2} <i>¹Advanced Instrumentation Institute, KRISS, ²Science of Measurement, University of Science and Technology</i></p>
<p>WC3-Q-3 14:45-15:00</p>	<p>Effect of Atomic-Scale Defect Engineering on Thermoelectric Properties of Graphene Jinwook Baek^{1,2}, Myungwoo Choi², Travis G. Novak², Jicheol Byen¹, Hyejeong Lee¹, Donghwi Cho², Seonggu Hong¹, Jihun Mun¹, Sang-Woo Kang¹, Jaeyong Song¹, Hosun Shin¹, and Seokwoo Jeon² <i>¹KRISS, ²KAIST</i></p>
<p>WC3-Q-4 15:00-15:15</p>	<p>Photocatalytic Hydrogen Evolution Study of Nanocomposites by the In-situ Liquid Cell TEM Technique V. Navakoteswara Rao¹, Jun-Mo Yang¹, Jung Ho Yoo¹, Karthik Kannan², and Bee Lyong Yang² <i>¹Nano-Convergence Technology Division, National Nanofab Center; ²School of Advanced Materials Science and Engineering, Kumoh National Institute of Technology</i></p>
<p>WC3-Q-5 15:15-15:30</p>	<p>Measurement of Low-Concentration NO₂ Gas Using MoS₂ Scroll Based Gas Sensor Ho Yeon Park^{1,2}, Jihun Mun¹, Jinwook Baek¹, Soo-Hwan Jeong², and Sang-Woo Kang¹ <i>¹KRISS, ²Kyungpook National University</i></p>



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Room D (사파이어 II+III, 5층)

K. Memory (Design & Process Technology) 분과

[WD3-K] NAND Flash Memory

좌장: 강명곤 교수(한국교통대학교), 유경창 박사(삼성전자)

<p>WD3-K-1 14:00-14:30</p>	<p>Vertical NAND Technology Innovation for the Future Suk-Kang Sung <i>Samsung Electronics Co., Ltd</i></p>
<p>WD3-K-2 14:30-14:45</p>	<p>Vacuum Dielectric to Improve Cell-to-Cell Programming Interference in 3D NAND Flash Memory Woo-Jin Jung and Jun-Young Park <i>Chungbuk National University</i></p>
<p>WD3-K-3 14:45-15:00</p>	<p>Semiconducting한 소재의 유전 특성과 Trap 밀도 측정 방법에 대한 연구 심건호, 공동호, 백승재 <i>Department of Electronic and Electrical Engineering, Hankyong National University</i></p>
<p>WD3-K-4 15:00-15:15</p>	<p>Improved ISPP Scheme of 3-D NAND Flash for Narrow Threshold Voltage Distribution Giho Yang¹, Chanyang Park¹, Kihoon Nam¹, Min Sang Park², Hojung Kang², Jaesung Sim², and Rock-Hyun Baek¹ <i>¹Department of Electrical Engineering, POSTECH, ²SK hynix</i></p>
<p>WD3-K-5 15:15-15:30</p>	<p>Demonstration of Mechanical Stress during Thermal Recovery Configuration in a 3D NAND Flash String Yu-Jin Kim and Jun-Young Park <i>Chungbuk National University</i></p>



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Room E (루비 II, 5층)

A. Interconnect & Package 분과

[WE3-A] Advanced Package

좌장: 최광성 책임(ETRI), 김병준 교수(한국산업기술대학교)

<p>WE3-A-1 14:00-14:30</p>	<p>Wafer Level Package Process for HBM Sung Woo Ma, Minsuk Suh, and Woong-sun Lee <i>WLP Technology Group, SK Hynix</i></p>
<p>WE3-A-2 14:30-14:45</p>	<p>A Study on the Interfacial Reliability of Micro-nano Bimodal Cu Sintered Joints on DBC/AMB Substrates for Power Module Kirak Son, Aesun Oh, Eunyoung Park, and Hyun-Cheol Bae <i>DMC Convergence Research Department, ETRI</i></p>
<p>WE3-A-3 14:45-15:00</p>	<p>Challenges of Wafer Level Molded Under-Fill for 3D Stacked High Bandwidth Memory Je Hun Youn, Hyoung Chul Kwon, Seung-Hee Jo, and Woong-Sun Lee <i>WLP Technology, SK Hynix</i></p>
<p>WE3-A-4 15:00-15:15</p>	<p>티타늄 나노 패시베이션을 이용한 저온 구리 웨이퍼 본딩 Seungmin Park¹, Yoonho Kim¹, and Sarrah Eunkyung Kim² <i>¹Department of Manufacturing System and Design Engineering, Seoul National University of Science and Technology, ²Department of Semiconductor Engineering, Seoul National University of Science and Technology</i></p>
<p>WE3-A-5 15:15-15:30</p>	<p>Effects of Flux Material for MR-MUF Process in Fine Pitch Wafer Level Package Gi-Tae Moon, Seok-Hyun Hwang, Seung-Hee Jo, and Woong-Sun Lee <i>WLP Technology, SK Hynix</i></p>



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Room F (스페이드 I, 6층)

O. System LSI Design 분과

[WF3-O] Domain-Specific Circuits & Systems

좌장: 김지훈 교수(이화여자대학교)

<p>WF3-O-1 14:00-14:30</p>	<p>Algorithms and VLSI Architectures for IDMA Multiuser Detection Byeong Yong Kong <i>Division of Electrical, Electronic, and Control Engineering, Kongju National University</i></p>
<p>WF3-O-2 14:30-14:45</p>	<p>Vivado를 이용한 XDL 파일 생성 도구 최소연, 임나리, 유호영 <i>충남대학교 전자공학과</i></p>
<p>WF3-O-3 14:45-15:00</p>	<p>FPGA 역공학을 활용한 특정 패턴 LUT 검출 방법 임나리, 최소연, 유호영 <i>충남대학교 전자공학과</i></p>
<p>WF3-O-4 15:00-15:15</p>	<p>인공지능 연산 가속을 위한 Complementary Pass Transistor Logic 기반 6T SRAM PIM 전가산기 김준영, 김영민 <i>홍익대학교 전자전기공학부</i></p>



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Room G (스페이드 II+III, 6층)

J. Nano-Science & Technology 분과

[WG3-J] Nanomaterials

좌장: 강기훈 교수(연세대학교), 이관형 교수(서울대학교)

<p>WG3-J-1 14:00-14:15</p>	<p>Photo-switchable Molecular Electronic Devices with Perovskite/Graphene Electrodes Changjun Lee¹, Junwoo Kim¹, Jonghoon Lee¹, Minwoo Song¹, Keehoon Kang², and Takhee Lee¹ <i>¹Department of Physics and Astronomy, Seoul National University, ²Department of Materials Science and Engineering, Yonsei University</i></p>
<p>WG3-J-2 14:15-14:30</p>	<p>Ultrastrong Light-Matter Interactions in Two-Dimensional Materials Enabled by Surface Polaritons for Mid-Infrared Photonics In-Ho Lee <i>Center for Opto-Electronic Materials and Devices, KIST</i></p>
<p>WG3-J-3 14:30-14:45</p>	<p>Demonstration of PdSe₂ CMOS Circuit Using the Same Metal Contact in the Source/Drain Electrodes of n-/p-MOSFETs Jae Eun Seo^{1,2}, Eunpyo Park³, Tanmoy Das^{1,2}, Joon Young Kwak³, and Jiwon Chang^{1,2} <i>¹Department of System Semiconductor Engineering, Yonsei University, ²Department of Materials Science and Engineering, Yonsei University, ³Center for Neuromorphic Engineering, KIST</i></p>
<p>WG3-J-4 15:15-15:30</p>	<p>자가 조립된 나노 입자를 활용한 그래핀 양자점의 형성과 그 특성 연구 강현웅, 판딛비스마, 조제희 <i>전북대학교 반도체화학공학부</i></p>



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Room H (하트 I, 6층)

L. Analog Design 분과 [WH3-L] Analog Design I

좌장: 엄지용 교수(금오공과대학교), 정영호 교수(대구대학교)

<p>WH3-L-1 14:00-14:15</p>	<p>단일입력 비교기 기반의 저전력 2차 수동형 Noise-Shaping SAR ADC Dongsik Lee, Kihyun Kim, and Hyungil Chae <i>Department of Electronic Engineering, Konkuk University</i></p>
<p>WH3-L-2 14:15-14:30</p>	<p>High-Speed Column-Parallel ADC Using Data Feedforward Scheme in AMOLED External Compensation Seunghun Oh, Kyeongmin Park, Haewan Cho, and Franklin Bien <i>UNIST</i></p>
<p>WH3-L-3 14:30-14:45</p>	<p>Design of A Low-Noise and High Dynamic-Range CMOS Image Sensor Hyun Seon Choo, Minkyu Song, and Soo Youn Kim <i>Department of Semiconductor Science, Dongguk University</i></p>
<p>WH3-L-4 14:45-15:00</p>	<p>A 10-bit 1-MS/s Synchronous SAR ADC With A Hybrid RC DAC in 0.11μm CMOS for Image Sensor Application Hyoung-Jung Kim, Ji-Whan Kim, Ho-Jin Kim, Jun-Ho Boo, Jaeyeop Na, and Gil-Cho Ahn <i>Department of Electronic Engineering, Sogang University</i></p>
<p>WH3-L-5 15:00-15:15</p>	<p>A 16-bit Current Mode Dual-slope ADC with Reduced Errors Caused by Process Variations Yu-Rin Jin, Yeon-ho Seo, Dong-Han Ki, Sung-Mi Kim, and Seong-Ik Cho <i>Department of Electronic Engineering, Chonbuk National University</i></p>
<p>WH3-L-6 15:15-15:30</p>	<p>A 7-bit 1.3GS/s 3-bit/cycle SAR ADC with Time-Domain Quantization Jihyun Baek and Hyungil chae <i>Department of Electrical Engineering, Konkuk University</i></p>



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Room J (하트 III, 6층)

H. Display and Imaging Technologies 분과

[WJ3-H] Display Technology II

좌장: 박진성 교수(한양대학교), 권혁인 교수(중앙대학교)

<p>WJ3-H-1 14:00-14:30</p>	<p>Manufacturing Process of Ultra Fine LED for Micro LED Display Young-Woo Kim, Gi-Dong Sa, and Jeong-Hyun Kim <i>Korea Photonics Technology Institute</i></p>
<p>WJ3-H-2 14:30-14:45</p>	<p>Analysis of Aging Mechanism of Cd-free Inverted Quantum Dot Light-Emitting Diodes Hansol Seo, Minhyung Lee, Yeseul Park, and Jeonghun Kwak <i>Department of Electrical and Computer Engineering and Inter-University Semiconductor Research Center, Seoul National University</i></p>
<p>WJ3-H-3 14:45-15:00</p>	<p>Analysis of the Effect of H₂Pc Layer Inserted into Green Organic Light-emitting Diodes with a Single-cell Structure Tae Jun Ahn^{1,2}, Bum Ho Choi³, Young Baek Kim², and Yun Seop Yu² <i>¹Hankyong National University, ²KITECH, ³Technology Outsourcing Solution, Co.</i></p>
<p>WJ3-H-4 15:00-15:15</p>	<p>플렉시블 디스플레이를 위한 구부릴 수 있는 투명 전극 연구 장효원¹, 이용주^{1,2}, Biswas Swarup¹, 김혁¹ <i>¹서울시립대학교 전자전기컴퓨터공학부, ²한국생산기술연구원</i></p>
<p>WJ3-H-5 15:15-15:30</p>	<p>Efficient and Stable Cd-free Quantum Dot Light-Emitting Diodes via Modification of ZnMgO Electron Transport Layers Minhyung Lee, Hansol Seo, Yeseul Park, and Jeonghun Kwak <i>Department of Electrical and Computer Engineering and Inter-University Semiconductor Research Center, Seoul National University</i></p>



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Room K (다이아몬드 I, 6층)

F. Silicon and Group-IV Devices and Integration Technology 분과 [WK3-F] Advanced Device Technology

좌장: 김명수 교수(UNIST)

<p>WK3-F-1 14:00-14:15</p>	<p>Material Effects of Resistive Switching Uniformity based on Bi-layer Structure Memristor Yan-Han¹, Ki-Woo Song¹, Yeong-Jin An², Seong-Hyun Kim¹, Nguyen Kim Thanh¹, Sunil Babu Eadi¹, Hyuk-Min Kwon², and Hi-Deok Lee¹ <i>¹Department of Electronics Engineering, Chungnam National University, ²Department of Semiconductor Processing Equipment, Semiconductor Convergence Campus, Korea Polytechnics College</i></p>
<p>WK3-F-2 14:15-14:30</p>	<p>Effects of Irradiation of High-Energy Hydrogen Ions on the Characteristics of poly-Si Floating-Gate Metal-Oxide-Semiconductor Field-Effect Transistor Sibeom Kim¹, Young Jun Yoon², and Seongjae Cho¹ <i>¹Department of Electronic Engineering, Gachon University, ²KAERI</i></p>
<p>WK3-F-3 14:30-14:45</p>	<p>Multi-Valued Multiple-Sheets Field Effect Transistor Sungsoo Lee and Changhwan Shin <i>Department of Electrical and Computer Engineering, Sungkyunkwan University</i></p>
<p>WK3-F-4 14:45-15:00</p>	<p>Device Design of Ferroelectric-gated Feedback Field Effect Transistor with 4 States Juho Sung and Changhwan Shin <i>Department of Electrical and Computer Engineering, Sungkyunkwan University</i></p>
<p>WK3-F-5 15:00-15:15</p>	<p>Analysis of SET/RESET Process and Improvement of Resistance Uniformity in Memristor depending on the Difference in the Work Function Yeong-Jin An¹, Ki-Woo Song¹, Nguyen Kim Thanh¹, Tae-Gyu Ryu¹, Sunil Babu Eadi¹, Hyuk-Min Kwon², and Hi-Deok Lee¹ <i>¹Department of Electronics Engineering, Chungnam National University, ²Department of Semiconductor Processing Equipment, Semiconductor Convergence Campus, Korea Polytechnics College</i></p>
<p>WK3-F-6 15:15-15:30</p>	<p>Gate-Normal Charge Trapped (GCT) Tunnel Field-Effect Transistors (TFETs) Jae Seung Woo, Kyung Min Koo, and Woo Young Choi <i>Department of Electronic Engineering, Sogang University</i></p>



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Room L (다이아몬드 II, 6층)

N. VLSI CAD 분과

[WL3-N] Traditional CAD Issues and Design Enhancement

좌장: 강석형 교수(POSTECH), 현대준 교수(청주대학교)

WL3-N-1 14:00-14:15	베이지안 최적화를 이용한 메탈 스택 파라미터 선정 방법 남지우, 현대준 <i>청주대학교 전자공학과</i>
WL3-N-2 14:15-14:30	비대칭 게이트 설계를 위한 트랜지스터 크기 최적화 알고리즘 김경창, 현대준 <i>청주대학교 전자공학과</i>
WL3-N-3 14:30-14:45	컨택 라우팅 활용을 위한 셀 배치 최적화 방법 오제영, 현대준 <i>청주대학교 전자공학과</i>
WL3-N-4 14:45-15:00	Reinforcement Learning Based Detailed Placement Seonghyeon Park, Sung-Yun Lee, and Seokhyeong Kang <i>POSTECH</i>
WL3-N-5 15:00-15:15	SAT-Based Minimum Patch Generation for Functional ECO Jaemin Seo, Kyungjun Min, and Seokhyeong Kang <i>Department of Electrical Engineering, POSTECH</i>
WL3-N-6 15:15-15:30	Wire Length Estimation Using Machine Learning Jakang Lee, Daeyeon Kim, and Seokhyeong Kang <i>POSTECH</i>



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Room C (사파이어 I, 5층)

K. Memory (Design & Process Technology) 분과 [WC4-K] RRAM III

좌장: 김성준 교수(동국대학교), 정두석 교수(한양대학교)

<p>WC4-K-1 15:45-16:00</p>	<p>Reconfigurable Mott Physical Unclonable Function Jae Hyun In, Gwangmin Kim, and Kyung Min Kim KAIST</p>
<p>WC4-K-2 16:00-16:15</p>	<p>Evaluation of Physical Unclonable Function Performance Depending on Memristor Conduction Mechanism Jinwoo Park, Min Suk Song, Geun Ho Lee, and Hyungjin Kim Department of Electronic Engineering, Inha University</p>
<p>WC4-K-3 16:15-16:30</p>	<p>The InGaZnO 1T-1M Block for Edge Computing based on Monolithic Integration of TFT and Memristor Hyunkyu Lee, Youngjin Seo, Jingyu Park, Woo Sik Choi, Inseok Chae, Dong Myong Kim, Sung-Jin Choi, Jong-Ho Bae, Changwook Kim, and Dae Hwan Kim School of Electrical Engineering, Kookmin University</p>
<p>WC4-K-4 16:30-16:45</p>	<p>A True Random Number Generator based on A Cu_xTe_{1-x} Diffusive Memristor Jaehyun Kim, Kyung Seok Woo, Janguk Han, and Cheol Seong Hwang Department of Materials Science and Engineering and Inter-University Semiconductor Research Center, Seoul National University</p>
<p>WC4-K-5 16:45-17:00</p>	<p>Effect of Oxygen Content on Long-term and Short-term Schottky Barrier Modulations in Pd/IGZO/SiO₂/p⁺-Si Memristors Hee Jun Lee, Donguk Kim, Tae Jun Yang, Jong-Ho Bae, Sung-Jin Choi, Dong Myong Kim, Changwook Kim, and Dae Hwan Kim School of Electrical Engineering, Kookmin University</p>
<p>WC4-K-6 17:00-17:15</p>	<p>Stochastic, Low-current Artificial Synapse for Efficient Bayesian Learning Do Hoon Kim, Woon Hyung Cheong, Hanchan Song, Jae Bum Jeon, and Kyung Min Kim KAIST</p>
<p>WC4-K-7 17:15-17:30</p>	<p>Study on the Electrical Properties and Self-oscillation of Au Nanodots Incorporated NbO_x Threshold Switching Device Woojoon Park, Gwangmin Kim, Jae Hyun In, Hakseung Rhee, Juseong Park, Youngseok Kim, and Kyung Min Kim Department of Materials Science and Engineering, KAIST</p>



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Room D (사파이어 II+III, 5층)

K. Memory (Design & Process Technology) 분과

[WD4-K] Charge Trap Flash and PRAM

좌장: 김윤 교수(서울시립대학교), 권용우 교수(홍익대학교)

<p>WD4-K-1 15:45-16:00</p>	<p>Sandwich Structure Charge Trap Memristor for Retention Secured Neuromorphic Synapse Application Geunyoung Kim, Seoil Son, and Kyung Min Kim <i>Department of Materials Science and Engineering, KAIST</i></p>
<p>WD4-K-2 16:00-16:15</p>	<p>Schottky Barrier Based Double PN Junction Synapse with SONOS Structure Yijoon Kim, Hyangwoo Kim, and Chang-Ki Baek <i>Department of Convergence IT Engineering, POSTECH</i></p>
<p>WD4-K-3 16:15-16:30</p>	<p>3차원 적층형 charge trap flash 소자의 적층 두께 제어를 통한 멀티레벨 컨덕턴스 변화 구현 Hyun-Seok Choi¹, Jun Park¹, Dong hyuk Chae¹, Minsuk Koo², and Yoon Kim¹ <i>¹Department of Electrical and Computer Engineering, University of Seoul, ²Department of Computer Science and Engineering, Incheon National University</i></p>
<p>WD4-K-4 16:30-16:45</p>	<p>Hybrid Three- and Two-Terminal Charge Trap Memristive devices for Heterosynaptic Plasticity Jae Bum Jeon, Seong-In Cho, Geunyoung Kim, and Kyung Min Kim <i>KAIST</i></p>
<p>WD4-K-5 16:45-17:00</p>	<p>스퍼터 증착 ZnTe OTS의 성능 개선을 위한 공정 및 물성 평가연구 공동호, 심건호, 백승재 <i>School of Electronic and Electrical Engineering, Hankyong National University</i></p>
<p>WD4-K-6 17:00-17:15</p>	<p>Investigation of Phase-change Synapse Architectures by Fully-coupled Electrothermal and Phase-change Simulation Ho Thi Thu Trang and Yongwoo Kwon <i>Department of Materials Science and Engineering, Hongik University</i></p>
<p>WD4-K-7 17:15-17:30</p>	<p>Impact of Doping on the Characteristics of Binary Chalcogenide Ovonic Threshold Switch for Selector Devices Su-Bong Lee^{1,2}, Yoon-Gu Lee^{1,2}, Sang-Heon Park^{1,2}, Chaebin Park^{1,2} and Jong-Souk Yeo^{1,2} <i>¹School of Integrated Technology, Yonsei University, ²Yonsei Institute of Convergence Technology, Yonsei University</i></p>



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Room E (루비 II, 5층)

A. Interconnect & Package 분과

[WE4-A] Emerging Interconnect

좌장: 이태익 박사(KITECH), 김병준 교수(한국산업기술대학교)

<p>WE4-A-1 15:45-16:15</p>	<p>Low-Carbon Interconnection Technology for Heterogenous Integration Kwang-Seong Choi, Jiho Joo, Yong-Sung Eom, Gwang-Mun Choi, Chanmi Lee, Ki-Seok Jang, In-Seok Kye, Ho-Gyeong Yun, and Seok Hwan Moon <i>ETRI</i></p>
<p>WE4-A-2 16:15-16:45</p>	<p>Thermal Management at Nanoscale for Electronics Hyejin Jang <i>¹Materials Science and Engineering, Seoul National University</i></p>
<p>WE4-A-3 16:45-17:00</p>	<p>Bonding and Interfacial Analysis of Polymer Substrates by CNT Microwave Heating 손민정^{1,2}, 김민수¹, 고용호¹, 주병권², 이태익¹ <i>¹한국생산기술연구원 접합적층연구부분 마이크로조이닝센터, ²고려대학교 전기 전자공학부 디스플레이 및 나노시스템 연구실</i></p>
<p>WE4-A-4 17:00-17:15</p>	<p>고전력 전기자동차 파워 모듈용 DBC 기판과 IMS 기판의 방열 특성 비교 정봉민^{1,2}, 이가원¹, 오애선², 배현철^{2,3} <i>¹충남대학교 전자공학과, ²한국전자통신연구원 DMC융합연구단, ³과학기술연합대학원대학교 ETRI스쿨 차세대소자공학과</i></p>
<p>WE4-A-5 17:15-17:30</p>	<p>스프링 구조 변화에 따른 고주파 영향 분석 김인섭, 김문정 <i>공주대학교 전기전자제어공학부</i></p>



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Room F (스페이드 I, 6층)

O. System LSI Design 분과

[WF4-O] VLSI Design for Signal Processing

좌장: 김영민 교수(홍익대학교), 김지훈 교수(이화여자대학교)

WF4-O-1 15:45-16:15	Complexity-Latency Tradeoff for 5G SCL Polar Decoder Architecture 감동윤, 이영주 <i>포항공과대학교 전자전기공학과</i>
WF4-O-2 16:15-16:30	Post-Quantum Cryptography Coprocessor for RISC-V Jihye Lee, Whijin Kim, Sohyeon Kim, and Ji-Hoon Kim <i>Ewha Womans University</i>
WF4-O-3 16:30-16:45	A Low-Cost Voice Recognition System with Embedded AI Accelerator Kwang Hyun Go, Yue Ri Jeong, and Seung Eun Lee <i>Department of Electronic Engineering, Seoul National University of Science and Technology</i>
WF4-O-4 16:45-17:00	Area-Efficient Signal Acquisition for BDS B1C Signals Jiwoon Park, Minsu Kim, and Hoyoung Yoo <i>Chungnam National University</i>
WF4-O-5 17:00-17:15	RISC-V Based Multicore Processor for Smart IoT CCTV Application Seung-Young Lee, Jae-Hyoung Lee, and Woojoo Lee <i>Chung-Ang University</i>
WF4-O-6 17:15-17:30	Multi-mode Transprecision SpMV Engine for PageRank Whijin Kim, Jihye Lee, Sohyeon Kim, and Ji-Hoon Kim <i>Ewha Womans University</i>



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Room G (스페이드 II+III, 6층)

J. Nano-Science & Technology 분과

[WG4-J] Van der Waals Heterostructures

좌장: 손정인 교수(동국대학교), 이관형 교수(서울대학교)

<p>WG4-J-1 15:45-16:00</p>	<p>Atomic-Layer-Confined Multiple Quantum Wells Enabled by Monolithic Bandgap Engineering of Transition Metal Dichalcogenides Yoon Seok Kim¹, Sojung Kang², Jae-Pil So³, Jong Chan Kim⁴, Kangwon Kim⁵, Seunghoon Yang¹, Yeonjoon Jung⁶, Yongjun Shin⁶, Seongwon Lee³, Donghun Lee¹, Jin-Woo Park², Hyeonsik Cheong⁵, Hu Young Jeong⁷, Hong-Gyu Park^{1,3}, Gwan-Hyoung Lee^{6,8,9,10}, and Chul-Ho Lee^{1,11} <i>¹KU-KIST Graduate School of Converging Science and Technology, Korea University, ²Department of Materials Science and Engineering, Yonsei University, ³Department of Physics, Korea University, ⁴School of Materials Science and Engineering, UNIST, ⁵Department of Physics, Sogang University, ⁶Department of Materials Science and Engineering, Seoul National University, ⁷UNIST Central Research Facilities, UNIST, ⁸Research Institute of Advanced Materials, Seoul National University, ⁹Institute of Engineering Research, Seoul National University, ¹⁰Institute of Applied Physics, Seoul National University, ¹¹Department of Integrative Energy Engineering, Korea University</i></p>
<p>WG4-J-2 16:00-16:30</p>	<p>Beyond Binary 2D Metal-Chalcogenides: 2D Ternary Metal Chalcogenides and 2D Oxides Kibum Kang <i>Department of Materials Science and Engineering, KAIST</i></p>
<p>WG4-J-3 16:30-16:45</p>	<p>Van der Waals Schottky Gated Metal-semiconductor Field-effect Transistor at the Schottky-Mott Limit Yeon Ho Kim¹, Wei Jiang², Donghun Lee¹, Jong Chan Kim³, Woong Huh¹, Tae Soo Kim⁴, Jae-Pil So⁵, Hong-Gyu Park^{1,5}, Kibum Kang⁴, Hu Young Jeong³, Tony Low², and Chul-Ho Lee^{1,6} <i>¹KU-KIST Graduate School of Converging Science & Technology, Korea University, ²Department of Electrical and Computer Engineering, University of Minnesota, ³UNIST Central Research Facilities (UCRF) and Department of Materials Science and Engineering, UNIST, ⁴Department of Materials Science and Engineering, KAIST, ⁵Department of Physics, Korea University, ⁶Department of Integrative Energy Engineering, Korea University</i></p>
<p>WG4-J-4 16:45-17:00</p>	<p>유기금속화학기상증착법을 이용한 단일층 비스무스-산소-칼코겐 층상구조 성장 및 전기적 특성 분석 강민수¹, 채현준¹, 박현빈¹, 정한범¹, 정후영², 강기범¹ <i>¹한국과학기술원, ²울산과학기술원</i></p>
<p>WG4-J-5 17:00-17:15</p>	<p>Gate Modulation of 2D WSe₂-Based Field Effect Transistor with HSQ as Gate Dielectric via Remote Oxygen Plasma Treatment Hohyun Im, Dongryul Lee, Miae Kang, and Jihyun Kim <i>Korea University</i></p>
<p>WG4-J-6 17:15-17:30</p>	<p>레이저 조사를 통한 WO_x/WSe₂ 가스 센서 제작 및 NO₂ 감지 성능 향상 강미애, 김아영, 임호현, 김지현 <i>고려대학교</i></p>



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Room H (하트 I, 6층)

L. Analog Design 분과 [WH4-L] Analog Design II

좌장: 엄지용 교수(금오공과대학교), 정영호 교수(대구대학교)

<p>WH4-L-1 15:45-16:00</p>	<p>Photovoltaic Energy Harvesting System with Coarse and Fine Fast Maximum Power Point Tracking based on Perturb & Observe Algorithm Min Seong Kang, Eun Ho Choi, and Franklin Bien <i>UNIST</i></p>
<p>WH4-L-2 16:00-16:15</p>	<p>Design of Single-Inductor Multiple-Output(SIMO) DC-DC Converter Yeun Jeong Park, Tae Seob Oh, and Kang Yoon Lee <i>Department of Electrical and Computer Engineering, SungKyunKwan University</i></p>
<p>WH4-L-3 16:15-16:30</p>	<p>마그네틱 에너지 하베스팅을 위한 하베스터 / 부하 연결 제어 배터리 전력관리 회로 Jaeyeon Kim^{1,2}, Kyoungho Lee², Minseob Shim², and Ilku Nam¹ <i>¹Pusan National University, ²KERI</i></p>
<p>WH4-L-4 16:30-17:45</p>	<p>CMOS 기반 Analog Silicon Multiplier Hyo-Sung Park^{1,2}, Woo-Young Choi¹, and Myung-Jae Lee² <i>¹Department of Electrical and Electronic Engineering, Yonsei University, ²Post-Silicon Semiconductor Institute, KIST</i></p>
<p>WH4-L-5 16:45-17:00</p>	<p>Design of LDO Based Supply Modulator for 5.8Ghz DSRC Transceiver ASK Modulation Kyung-Je Jeon and Kang Yoon Lee <i>Department of Electrical and Computer Engineering, Sungkyunkwan University</i></p>
<p>WH4-L-6 17:00-17:15</p>	<p>Wide Range Optimized Multi Mode Readout Integrated Circuit for Gas Monitoring System Jeonghoon Cho, Hee Young Chae, Yunsik Lee, and Jae Joon Kim <i>Department of Electrical Engineering, UNIST</i></p>



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Room J (하트 III, 6층)

H. Display and Imaging Technologies 분과

[WJ4-H] Display Technology III

좌장: 전우진 교수(경희대학교)

<p>WJ4-H-1 15:45-16:00</p>	<p>Oxygen 함량이 서로 다른 Triple-Channel 구조를 갖는 Oxide Thin-Film Transistor 소자의 전기적 특성 분석 Kang-Min Lee^{1,2}, Byeong-Kwon Ju², and Sung-Hwan Choi¹ <i>¹KITECH, ²School of Electrical and Electronic Engineering, Korea University</i></p>
<p>WJ4-H-2 16:00-16:15</p>	<p>A Real-Time TFT Degradation Compensation with Noise-Immune Current Sensing AFE and Error Correction Algorithm for High-Resolution Mobile Displays Kyeonghan Shin, Kyeongmin Park, Seunghun Oh, Haewan Cho, and Franklin Bien <i>UNIST</i></p>
<p>WJ4-H-3 16:15-16:30</p>	<p>면적 연신과 전압 강하에 대한 휘도 감소를 보상할 수 있는 스트레처블 AMOLED 보상 화소 회로 Hyuck Su Lee, Lee Jong Mo, Jae Geun Woo, Seo Jin Kang, Eun Seong Yu, Chan Min Jeong, Min Seong Kim, Seoung Gyun Kim, and Byung Seong Bae <i>School of Electronics and Display Engineering, Hoseo University</i></p>
<p>WJ4-H-4 16:30-16:45</p>	<p>A New Scan Driver Circuit for Pulse Width Modulation Driving in μLED Display Eun Kyo Jung, Yong-Hoo Hong, Sung-Hyuck Ahn, Sara Hong, Eunho Kim, Ye-Rim Jeong, Hwarim Im, and Yong-Sang Kim <i>Department of Electrical and Computer Engineering, Sungkyunkwan University</i></p>
<p>WJ4-H-5 16:45-17:00</p>	<p>OLED 디스플레이의 내부보상 화소회로 과도응답 모델링 기법 최정훈, 문예향, 김재엽, 유이경, 박기찬, 전종욱 <i>건국대학교 전기전자공학부</i></p>
<p>WJ4-H-6 17:00-17:15</p>	<p>A Study on the Reliability of Gate Driver Suitable for Stretchable Displays Seo Jin Kang, Hyuck Su Lee, Jae Geun Woo, Eun Seong Yu, Min Seong Kim, Chan Min Jeong, Jong Mo Lee, Seoung Gyun Kim, and Byung Seong Bae <i>School of Electronics and Display Engineering, Hoseo University</i></p>
<p>WJ4-H-7 17:15-17:30</p>	<p>An Emission Driver Circuit with Enhanced Pull-Down Unit for Micro-LED Displays Ye-Rim Jeong, Eun Kyo Jung, Yong-Hoo Hong, Sung-Hyuck Ahn, Sara Hong, Eunho Kim, Hwarim Im, and Yong-Sang Kim <i>Department of Electrical and Computer Engineering, Sungkyunkwan University</i></p>



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Room K (다이아몬드 I, 6층)

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

[WK4-F] 3D Integration Technology

좌장: 김명수 교수(UNIST)

<p>WK4-F-1 15:45-16:00</p>	<p>The Process Development for Monolithic 3D Integration Using Large-Scale Silicon-On-Insulator (SOI) Wafer Bonding Hyeoncheol Cho¹, Hoonhee Han¹, Jaejoong Jung², Byeongjin Cho², and Changhwan Choi¹ ¹Division of Materials Science and Engineering, Hanyang University, ²Department of Electronic Engineering, KAIST</p>
<p>WK4-F-2 16:00-16:15</p>	<p>저마늄 확산 효과와 결정화 엔지니어링을 통한 3차원 수직 낸드플래시 메모리 용 폴리실리콘 채널 이동도 향상에 관한 연구 Tae In Lee¹, Yun Hee Lee¹, Eui Joong Shin¹, Min Ju Kim¹, Jung Hoon Lee², Jaeduk Lee², and Byung Jin Cho¹ ¹School of Electrical Engineering, KAIST, ²Flash Product & Technology, Samsung Electronics Co., Ltd.</p>
<p>WK4-F-3 16:15-16:30</p>	<p>Green Laser Annealing을 활용한 Monolithic 3D Integration 상부 PMOS 소자 구현과 성능 향상에 대한 연구 Youngkeun Park¹, Semin Noh¹, Jaejoong Jeong¹, Jaecheol Shin², and Byung Jin Cho¹ ¹School of Electrical Engineering, KAIST, ²Laser Process Development, Digital Imaging Technology</p>
<p>WK4-F-4 16:30-16:45</p>	<p>CMOS SPAD의 구조 최적화를 통한 수광 효율 향상 Eunsung Park^{1,2}, Woo-Young Choi¹, and Myung-Jae Lee² ¹Department of Electrical and Electronic Engineering, Yonsei University, ²Post-Silicon Semiconductor Institute, KIST</p>
<p>WK4-F-5 16:45-17:00</p>	<p>Noise Perspective of Low Temperature Gate Oxide Adjustment with Single and Dual Dipole Engineering for 3D Sequential Approach Younggwang Yoon¹, Jacopo Franco², Eddy Simoen², Alessio Spessot², and Naoto Horiguchi² ¹SK Hynix, ²IMEC</p>
<p>WK4-F-6 17:00-17:15</p>	<p>Three-Dimensional Topology Simulation of Vertically Stacked Complementary Field Effect Transistor (CFET) with 5 nm Channel Width In Ki Kim and Sung-Min Hong School of Electrical Engineering and Computer Science, GIST</p>
<p>WK4-F-7 17:15-17:30</p>	<p>Investigation of Effect of Monolithic 3D Inverter Stacked with MOSFETs on Random Dopant Fluctuation Geun Jae Lee^{1,2}, Tae Jun Ahn^{1,2}, and Yun Seop Yu^{1,2} ¹Department of ICT Robot Engineering, Hankyong National University, ²Department of Electrical, Electronic and Control Engineering, Hankyong National University</p>



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2022년 1월 26일(수), 15:45-17:30

Room L (다이아몬드 II, 6층)

N. VLSI CAD 분과

[WL4-N] New Devices and Hardware with CAD

좌장: 송대건 교수(경북대학교), 장경욱 교수(성균관대학교)

WL4-N-1 15:45-16:00	A Novel Ternary Logic Gates Implementation, Using Anti-Ambipolar Transistors(AAT) and PMOSs Jongbeom Kim ¹ and Taigon Song ^{1,2} ¹ School of Electronics Engineering, Kyungpook National University, ² School of Electronic and Electrical Engineering, Kyungpook National University
WL4-N-2 16:00-16:15	Standard Cell Design Methodology for Complementary FETs (CFETs) Eunbin Park ¹ and Taigon Song ^{1,2} ¹ School of Electronics Engineering, Kyungpook National University, ² School of Electronic and Electrical Engineering, Kyungpook National University
WL4-N-3 16:15-16:30	Buried Power Rail Schemes Analysis in 3nm Layout Taehak Kim and Taigon Song School of Electronic and Electrical Engineering, Kyungpook National University
WL4-N-4 16:30-16:45	Low Power Ternary Logic Circuit Using Depletion-type MOSFET Hyundong Lee ¹ and Taigon Song ^{1,2} ¹ School of Electronics Engineering, Kyungpook National University, ² School of Electronic and Electrical Engineering, Kyungpook National University
WL4-N-5 16:45-17:00	T-CMOS 를 이용한 최적의 삼진 순차회로 설계 Jonghyun Ko ¹ and Taigon Song ^{1,2} ¹ School of Electronic and Electrical Engineering, Kyungpook National University, ² School of Electronics Engineering, Kyungpook National University
WL4-N-6 17:00-17:15	Power Efficiency Analysis of DC-DC Converters in XMODEL Piljun Jeong ¹ and Jaeha Kim ² ¹ Inter-University Semiconductor Research Center, Seoul National University, ² Department of Electrical and Computer Engineering, Seoul National University
WL4-N-7 17:15-17:30	Data Bus Inversion Encoder Hardware Design for Serializer-Containing Data Bus Scheme Seongyoon Kang and Jongsun Park Department of Semiconductor System Engineering, Korea University



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2022년 1월 25일(화), 09:00-18:00

하이원 그랜드호텔(컨벤션타워), 로비 (5층)

[TP1] 포스터 세션 1

A. Interconnect & Package

심사위원: 김사라은경 교수(서울과학기술대학교), 이소연 교수(금오공과대학교)

TP1-001	Effects of Polymer, Insert Material and New Manufacturing Process for CMP Performance of the CMP Retainer Ring Application Soon-Young Hyun ¹ , Hae-Kwon Kim ¹ , Sun Yanjie ¹ , Jaebok Lee ² , and Hyunjin Shin ² ¹ SABIC, ² WillbeS&T Co., Ltd.
TP1-002	KGSD Wafer Warpage(WPG) Characteristic for High Bandwidth Memory(HBM) Sooyeon Yoo, Hyoungchul Kwon, Seunghee Jo, and Woongsun Lee WLP Technology, SK Hynix
TP1-003	Thermal Reliability of Air-Gap TSV(Through Silicon Via) Eunsol Jo and Gu-Sung Kim Electronic Packaging Research Center, Kangnam University
TP1-004	Deposition Condition of Low Stress Tungsten in the Trench Mold Using Finite Element Analysis Jong-Sung Lee ¹ , Suncheul Kim ² , Donghoon Han ² , Myoung-Gyu Lee ^{1,3} , and Young-Chang Joo ^{1,3} ¹ Department of Materials Science & Engineering, Seoul National University, ² Samsung Electronics Co., Ltd., ³ Research Institute of Advanced Materials, Seoul National University
TP1-005	Improving Mechanical Stability of Al-Cu Ultrasonic Joint for Battery Tab by Adopting Ni Interlayer Jong-Min Jeong ^{1,2} , Jungsoo Kim ¹ , Yong-Jin Lee ¹ , Seung-Boo Jung ² , and Min-Su Kim ¹ ¹ Advanced Joining & Additive Manufacturing R&D Department, KITECH, ² School of Advanced Materials Science and Engineering, Sungkyunkwan University
TP1-006	A Modified Ladder-TLM Method for Precise Evaluation of the Contact Parameters of Ultrathin Semiconductor Devices Youngjin Park, Byeong-Gyu Park, Jiyeong Yun, and Hongsik Park School of Electronics Engineering, Kyungpook National University
TP1-007	웨어러블 전자소자용 니팅 머신기를 활용한 섬유 기반 인터커넥트 신재명 ¹ , 이미정 ² , 김윤희 ³ , 김병준 ¹ ¹ 한국산업기술대학교 신소재공학과, ² 국민대학교 신소재공학, ³ 국민대학교 융합디자인테크놀로지학과



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TP1-008	<p>Source/drain Contact Model for Scaled Vertical FET Structures with Consideration of Vertical Current Terms in the Contact Regions Byeong-Gyu Park, Youngjin Park, Jiyeong Yun, and Hongsik Park <i>School of Electronic and Electrical Engineering, Kyungpook National University</i></p>
TP1-009	<p>Effect of Carbon Implantation on Thermal Stability of Metal-Insulator-Semiconductor Contact Using TiO₂ Interfacial Layer Donghun Lee¹, Iksoo Park¹, Jungsik Kim², and Jeong-Soo Lee¹ ¹Department of Electrical Engineering, POSTECH, ²Division of Electrical Engineering, Gyeongsang National University</p>
TP1-010	<p>고온방치시험을 통한 이종금속 초음파 접합부의 환경신뢰성 평가 Taejoon Noh, Kyung-Yeol Kim, Dong-Gil Kang, and Seung-Boo Jung <i>Sungkyunkwan University</i></p>
TP1-011	<p>Ni 프로브 핀에 Damage가 없는 고선택비의 Cu/Ni 습식 식각 공정 Seungmin Park¹, Yoonho Kim¹, Yeongjun Park², Kwangsik Oh², and Sarah Eunkyung Kim³ ¹Department of Manufacturing System and Design Engineering, Seoul National University of Science and Technology, ²Department of Electrical and Information Engineering, Seoul National University of Science and Technology, ³Department of Semiconductor Engineering, Seoul National University of Science and Technology</p>
TP1-012	<p>다공성 Ag 나노층을 이용한 구리 웨이퍼 본딩 Yoonho Kim¹, Seungmin Park¹, and Sarah Eunkyung Kim² ¹Department of Manufacturing System and Design Engineering, Seoul National University of Science and Technology, ²Department of Semiconductor Engineering, Seoul National University of Science and Technology</p>
TP1-013	<p>TiO₂나노구 단일층 구조를 활용한 폴리머 기반 Thermal Interface Material의 열전도 성능 향상 문진욱¹, 정의진², 정복스민², 허원준², 박진섭^{1,2} ¹한양대학교 나노반도체공학과, ²한양대학교 융합전자공학과</p>
TP1-014	<p>Sn-0.7Cu-0.2Cr 솔더와 구리 기판 사이의 금속간화합물의 계면 반응 및 형태 손준혁^{1,2}, 유동열^{1,2}, 김윤찬^{1,3}, 변동진², 방정환¹ ¹한국생산기술연구원 마이크로조이닝센터, ²고려대학교 신소재공학과, ³서울과학기술대학교 신소재공학과</p>
TP1-015	<p>Solvent 분자량에 따른 수용성 SAC305 솔더 페이스트의 젖음성 및 솔더링성 연구 전소연, 유현주, 이태영, 유세훈 한국생산기술연구원 뿌리기술연구소 접합적층연구부문</p>
TP1-016	<p>Ni-less EPIG 표면처리와 Sn-3.0Ag-0.5Cu (SAC 305) 솔더 접합부 계면반응 및 기계적 특성 이태영^{1,2}, 전소연¹, 김영호², 유세훈¹ ¹한국생산기술연구원 뿌리기술연구소 접합적층연구부문, ²한양대학교 신소재공학과</p>



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TP1-017	<p>핀 신뢰성 테스트 프로그램 보드 개발 Jin Su Kang¹, Yeon Jeong Ji², Hee Jin Woo¹, Song Hee Park¹, Dong Soo Jung³, and Young Hyung Kim² ¹Kumoh National Institute of Technology, ²Defense & IT Technology Research Institute, ³Raon Solution</p>
TP1-018	<p>Laser Debonding Process for Rework of OLED Displays 고명준^{1,2}, 김민수¹, 유세훈¹, 박영배², 이태익¹ ¹한국생산기술연구원 접합적층연구부분 마이크로조이닝센터, ²안동대학교 신소재공학부 전자재료신뢰성 연구실</p>

B. Patterning

심사위원: 이진균 교수(인하대학교), 임연호 교수(전북대학교)

TP1-019	<p>Characterization of Micro-Arcing and Plasma Impedance Monitoring with Discrete Wavelet Transform Seonghyeon Lee¹, Hojin Kang¹, Hojun Choi¹, Jaehyeon Kim¹, and Heeyeop Chae^{1,2} ¹School of Chemical Engineering, Sungkyunkwan University, ²SKKU Advanced Institute of Nanotechnology, Sungkyunkwan University</p>
TP1-020	<p>Sensitivity Enhancement of Optical Signal for Plasma Etching Endpoint Detection by Modified Clustering Method with Discrete Wavelet Transform Hojun Choi¹, Seonghyeon Lee¹, Jaehyeon Kim¹, and Heeyeop Chae^{1,2} ¹School of Chemical Engineering, Sungkyunkwan University, ²SKKU Advanced Institute of Nanotechnology, Sungkyunkwan University</p>
TP1-021	<p>Ceramic Heater Temperature Measurement with Heat Transfer Control Structure Attached Sun-Hee Lee, Hee-Tae Kwon, Woo-Jae Kim, Gi-Won Shin, Ji-Hwan Kim, In-Young Bang, and Gi-Chung Kwon Electrical and Biological Physics, Kwangwoon University</p>
TP1-022	<p>OLED 화소 형성을 위한 실리콘 원자 함유 고불소화 포토레지스트 개발 김가영¹, 최승수¹, 이의호², 이승택³, 정병준², 이정환³, 이진균¹ ¹Program in Environment and Polymer Engineering, Inha University, ²Department of Materials Science and Engineering, University of Seoul, ³Department of Materials Science and Engineering, Inha University</p>
TP1-023	<p>회절광의 위상 특성 최적화를 통한 극자외선 노광공정용 마스크 이미징 성능 향상 연구 조민선^{1,3}, 정동민^{2,3}, 김득규^{1,3}, 김연수^{2,3}, 안진호^{1,2,3} ¹한양대학교 나노반도체공학과, ²한양대학교 신소재공학과, ³EUV-IUCC (Industry University Collaboration Center)</p>
TP1-024	<p>EUV 펄리클 주름에 의한 마스크 회절 특성 변화가 마스크 이미지 전사 특성에 미치는 영향 이동기^{1,3}, 김영웅^{1,3}, 문승찬^{2,3}, 최진혁^{2,3}, 위성주^{1,3}, 안진호^{1,2,3} ¹한양대학교 신소재공학과, ²한양대학교 나노반도체공학과, ³EUV-IUCC (Industry University Collaboration Center)</p>



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TP1-025	<p>Plasma Atomic Layer Etching for Titanium Nitride at Low Temperatures Dahee Shim¹, Heeju Ha¹, Hojin Kang¹, and Heeyeop Chae^{1,2} ¹School of Chemical Engineering, Sungkyunkwan University, ²SKKU Advanced Institute of Nanotechnology (SAINT), Sungkyunkwan University</p>
TP1-026	<p>Atomic Layer Etching of Al₂O₃ with NF₃ Plasma Fluorination and Trimethylaluminum Ligand Exchange Jihyun Kim¹, Dahee Shim¹, Yongjae Kim², Hyeongwu Lee², and Heeyeop Chae^{1,2} ¹School of Chemical Engineering, Sungkyunkwan University, ²SKKU Advanced Institute of Nanotechnology (SAINT), Sungkyunkwan University</p>
TP1-027	<p>극자외선 및 심자외선 리소그래피용 포토레지스트 합성을 위한 연속 흐름 반응 공정 및 반응 속도론 연구 Kiyoungh Kwon¹, Jihoon Woo¹, Jiyeong Yeo², Seungyeon Choi², Myungwoong Kim², and Jinkyun Lee^{1,3} ¹Program in Environment and Polymer Engineering, Inha University, ²Department of Chemistry and Engineering, Inha University, ³Department of Polymer Science and Engineering, Inha University</p>
TP1-028	<p>금속을 함유한 고불소화 프탈로사이아닌의 EUV 레지스트로서의 가능성 최민규¹, 김준일¹, 구예진¹, 김강현³, 박병규⁴, 이상설⁴, 이진균^{1,2} ¹Program in Environmental and Polymer Engineering, Inha University, ²Department of Polymer Science and Engineering, Inha University, ³Department of Mechanical Engineering, POSTECH, ⁴Pohang Accelerator Laboratory, POSTECH</p>
TP1-029	<p>평판형 컷오프 프로브 측정 특성 분석 및 플라즈마 밀도 균일도 측정 염희중^{1,2}, 유광호¹, 윤민영¹, 채광석¹, 김정형¹, 이효창¹ ¹Korea Research Institute of Standards and Science, ²Department of Physics, Chungnam National University</p>
TP1-030	<p>세라믹 소재의 내플라즈마 특성과 플라즈마 변수의 상관관계 분석 홍성완^{1,2}, 김정형¹, 정종율², 이효창¹ ¹한국표준과학연구원, ²충남대학교</p>



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C. Material Growth & Characterization

심사위원: 김태헌 교수(울산대학교), 백승협 책임연구원(KIST)

TP1-031	<p>Defect-Mediated Control of Ferroelectric Hysteresis in Epitaxial $\text{Bi}_{1/2}(\text{Na}_{0.82}\text{K}_{0.18})_{1/2}\text{TiO}_3$ Thin Films</p> <p>Yong Jin Jo¹, Muhammad Sheeraz¹, Nguyen Xuan Duong¹, Gyeheyon Kim², Changhee Sohn², Ill Won Kim¹, Chang Won Ahn¹, and Tae Heon Kim¹</p> <p>¹Department of Physics and Energy Harvest-Storage Research Center, University of Ulsan, ²Department of Physics, UNIST</p>
TP1-032	<p>Solvent-Free Mechanochemical Synthesis of Ni-Based Fluoroperovskites</p> <p>Jin San Choi¹, Muhammad Sheeraz¹, Fazli Akram¹, Hyoung-Su Han², Jae-Shin Lee², Chang Won Ahn¹, and Tae Heon Kim¹</p> <p>¹Department of Physics and Energy Harvest-Storage Research Center, University of Ulsan, ²School of Materials Science and Engineering, University of Ulsan</p>
TP1-033	<p>졸-겔법에 의한 Ti 첨가 실리카 유리 제조와 그의 특성</p> <p>Seongmin Ju, U Sik Kim, Sang Yeol Shin, and Jaesun Kim</p> <p>Taihan Fiberoptics Co., Ltd.</p>
TP1-034	<p>Bandgap Alignment through $\alpha\text{-(Al}_x\text{Ga}_{1-x})_2\text{O}_3$ and $\alpha\text{-(In}_x\text{Ga}_{1-x})_2\text{O}_3$ Thin Films Solid Solution Grown by Mist CVD</p> <p>Kyoung-Ho Kim^{1,2}, Minh-Tan Ha¹, Yun-Ji Shin¹, Seong-Min Jeong¹, and Si-Young Bae¹</p> <p>¹KICET, ²Pusan National University</p>
TP1-035	<p>High Efficiency Perovskite Photovoltaic Cells with Bifacial Reflective Color-Tunability</p> <p>Jihyeon Heo^{1,2}, Incheol Jung³, Hyunwoo Park⁴, Ju Hwan Han⁴, Hyeonwoo Kim³, Hansol Park^{1,2}, Jin-Seong Park⁴, Hyeongtag Jeon⁴, Kyu-Tae Lee³, and Hui Joon Park^{1,2}</p> <p>¹Department of Organic and Nano Engineering, Hanyang University, ²Human-Tech Convergence Program, Hanyang University, ³Department of Physics, Inha University, ⁴Division of Materials Science and Engineering, Hanyang University</p>
TP1-036	<p>Comparative Study of Ferroelectric $\text{Hf}_{0.5}\text{Zr}_{0.5}\text{O}_2$ Capacitors with TiN, Ru, and RuO_2</p> <p>In Soo Lee¹, Beom Yong Kim^{1,2}, Hyeon Woo Park¹, Yong Bin Lee¹, Suk Hyun Lee¹, Minsik Oh¹, Seung Kyu Ryoo¹, Seung Yong Byun¹, Doo Sup Shim¹, and Cheol Seong Hwang¹</p> <p>¹Department of Materials Science and Engineering and Inter-University Semiconductor Research Center, Seoul National University, ²R&D Division, SK Hynix</p>
TP1-037	<p>Atomistic Understanding of the Strain- and Temperature-Dependent Dielectric Constant of $\text{Be}_{0.25}\text{Mg}_{0.75}\text{O}$ Superlattice</p> <p>SeungJae Yoon^{1,2}, Gyuseung Han^{1,2}, Kun Hee Ye^{1,2}, Taeyoung Jeong^{1,2}, Cheol Seong Hwang², and Jung-Hae Choi¹</p> <p>¹Electronic Materials Research Center, KIST, ²Department of Materials Science and Engineering and Inter-University Semiconductor Research Center, Seoul National University</p>
TP1-038	<p>Morphology Control of ZnO Microcrystals via Hydrothermal Remote Epitaxy</p> <p>Joonghoon Choi and Young Joon Hong</p> <p>Department of Nanotechnology and Advanced Materials Engineering, Sejong University</p>



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TP1-039	Thru-hole Epitaxy of GaN on Multi-layered-graphene/sapphire Templates for Readily Detachable Crystalline Films Hyunkyu Lee ¹ , Dongsoo Jang ² , and Chinkyoo Kim ^{1,2} ¹ Department of Information Display, Kyung Hee University, ² Department of Physics, Kyung Hee University
TP1-040	Effects of Preheated S as a Precursor of HfS₂ Chemical Vapor Deposition Using Three-Heater Zone Juchan Hwang and Kwangwook Park Jeonbuk National University
TP1-041	Epitaxial Growth of Ferroelectric HfO₂-Based Thin Films by RF Sputtering Hyung-Jin Choi, Sung-Jin Jung, Jun Young Lee, and Seung-Hyub Baek Electronic Materials Research Center, KIST
TP1-042	HfO₂ Epitaxy on Si-wafer by Sputtering for Ferroelectric Field Effect Transistor Sung-Jin Jung ¹ , Hyung-Jin Choi ¹ , Jun Young Lee ¹ , Soo Young Jung ¹ , Ruiguang Ning ¹ , Min seok Kim ¹ , Seong Keun Kim ¹ , and Seung Hyub Baek ^{1,2,3} ¹ KIST, ² Yonsei University, ³ Korea University of Science and Technology
TP1-043	Low Temperature Depositions of Vanadium Oxide Thin Films for Optoelectronic Applications Dae-Hwan Ahn, Seunghwi Koo, Dae-Kyu Han, and Donghee Park Center for Opto-Electronic Materials and Devices, Post-Silicon Semiconductor Institute, KIST
TP1-044	Direction Observation of Ferroelectric Effect on Ferroelectric Thin Film (SrMnO₃) by Using X-ray Micro Diffraction Rui He ¹ , Rui Tang ¹ , Shinkyu Lee ¹ , Sangmo Kim ² , and Chung Wung Bark ¹ ¹ Gachon University, ² Sejong University
TP1-045	Hetero-epitaxial Piezoelectric Film for Fingerprint and Vein Recognition System Soo Young Jung ^{1,2} , Jin Soo Park ^{3,4} , Byeong-hyeon Lee ⁵ , Sung-Ok Won ⁵ , Byung Chul Lee ³ , Ho Won Jang ² , and Seung-Hyub Baek ^{1,6} ¹ Electronic Materials Research Center, KIST, ² Department of Materials Science and Engineering, Seoul National University, ³ Creative Research Center for Brain Science, KIST, ⁴ Department of Electrical Engineering, Korea University, ⁵ Advanced Analysis Center, KIST, ⁶ Division of Nano and Information Technology, University of Science and Technology
TP1-046	Single Crystalline PMN-PZT Thin Film Bonding Technology for High-Performance MEMS Devices Development Ruiguang Ning ^{1,2} and Seung-Hyub Baek ^{1,2} ¹ University of Science and Technology, ² KIST
TP1-047	High-performance Dielectric ZnSnO₃/P(VDF-TrFE) Composite Films for Energy-harvesting Applications Fazli Akram ¹ , Amir Ullah ² , Tae Heon Kim ¹ , Ill Won Kim ¹ , and Chang Won Ahn ¹ ¹ Department of Physics and Energy Harvest-Storage Research Center (EHSRC), University of Ulsan, ² Department of Physics, Islamia College



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TP1-048	Lithium Nucleation and Growth Mechanism on Lithiophilic Surface Son Ha, Jong Chan Hyun, Dong Hyuk kang, Jimin Park, and Young Soo Yun <i>KU-KIST Graduate School of Converging Science and Technology, Korea University</i>
TP1-049	The Crystallization Mechanism of Organic Molecules by Physical Vapor Transport Process: Supercooled Liquid Intermediate State Youngkwan Yoon and Hee Cheul Choi <i>Department of Chemistry, POSTECH</i>
TP1-050	Defect States of $\text{FA}_{0.8}\text{MA}_{0.2}\text{PbI}_{3-x}\text{Br}_x$ Single Crystals Grown by Inverse-temperature Crystallization Kyoung Su Lee ¹ , Dae Young Park ² , Mun Seok Jeong ² , and Eun Kyu Kim ¹ ¹ <i>Department of Physics and Quantum-Function Research Laboratory, Hanyang University,</i> ² <i>Department of Physics and Semiconductor Nanophotonics Laboratory, Hanyang University</i>
TP1-051	Properties of Phase Transformations of Hexagonal Si Microneedle Jung Hyun Park ¹ , Kyoung Hwa Kim ¹ , Su Hyun Mun ¹ , Soyeong Kim ¹ , Gang Seok Lee ¹ , Jae Hak Lee ¹ , Hyung Soo Ahn ¹ , Young Tea Chun ¹ , Min Yang ¹ , Sam Nyung Yi ¹ , Sun-Lyeong Hwang ² , and Suck-Whan Kim ³ ¹ <i>Department of Electronic Material Engineering, Korea Maritime and Ocean University,</i> ² <i>Kangnam University,</i> ³ <i>Department of Physics, Andong National University</i>
TP1-052	Hexagonal Si Epilayer on 4H-SiC Substrate Grown by Mixed-Source HVPE Gang Seok Lee ¹ , Kyoung Hwa Kim ¹ , Soyeong Kim ¹ , Su Hyun Mun ¹ , Jung Hyun Park ¹ , Jae Hak Lee ¹ , Hyung Soo Ahn ¹ , Hunsoo Jeon ² , Ho-Young Cha ³ , Won Jae Lee ⁴ , Sang-Mo Koo ⁵ , and Suck-Whan Kim ⁶ ¹ <i>Department of Electronic Material Engineering, Korea Maritime and Ocean University,</i> ² <i>Power Semiconductor Commercialization Center,</i> ³ <i>School of Electrical and Electronic Engineering, Hongik University,</i> ⁴ <i>Department of Advanced Materials Engineering, Dong-Eui University,</i> ⁵ <i>Department of Electronic Materials Engineering, Kwangwoon University,</i> ⁶ <i>Department of Physics, Andong National University</i>
TP1-053	Rotation of Graphene on Cu(111) Surface and Stacking Angle-controlled Bilayer Graphene Hyeyeon Cho and Hee Cheul Choi <i>Department of Chemistry, POSTECH</i>
TP1-054	Synthesis of Highly Conductive 2D Metal-Organic Framework Thin Film by Chemical Vapor Deposition Myeonggeun Choe, Jin Young Koo, Sarah Sunah Park, and Hee Cheul Choi <i>Department of Chemistry, POSTECH</i>
TP1-055	Electron Doping of TCNQ-Based Cocrystals via Selective Reduction of TCNQ Hye Soo Kim ¹ , Jin Young Koo ² , and Hee Cheul Choi ² ¹ <i>Division of Advanced Materials Science, POSTECH,</i> ² <i>Department of Chemistry, POSTECH</i>
TP1-056	Ga₂O₃-Based Photodetector with Annealed Metal Buffer Layer on Sapphire Substrates Dong-Eon Kim ^{1,2} , Seong-Ho Cho ^{1,3} , Minh-Tan Ha ¹ , Yun-Ji Shin ¹ , Seong-Min Jeong ¹ , Min-Su Park ² , and Si-Young Bae ¹ ¹ <i>Energy and Environmental Division, KICET,</i> ² <i>Department of Electronics Engineering, Dong-A University,</i> ³ <i>Department of Materials Science and Engineering, Pusan National University</i>



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TP1-057	Electrical Properties of Metal-insulator-semiconductor Structure Diamond Schottky Barrier Diode Grown on Hetero-epitaxial Diamond Substrate Sanghun Han ¹ , Taemyung Kwak ¹ , Uiho Choi ¹ , Hyeonu Kang ¹ , Geunho Yoo ¹ , Seong-woo Kim ² , and Okhyun Nam ² ¹ Department of Nano & Semiconductor Engineering, Korea Polytechnic University (KPU), ² Adamant Namiki Precision Jewel Co., Ltd.
TP1-058	The Effect of AlGaN Interlayer on AlN-Based Double-Heterostructure HEMT Keono Kim, Minho Kim, Uiho Choi, Seongmin Kang, Yunseok Heo, and Okhyun Nam Convergence Center for Advanced Nano Semiconductor, Department of Nano-Semiconductor, Korea Polytechnic University
TP1-059	Growth of Carbon-doped p-type InGaAs Layers on InP(111)B Substrate Minwoo Kong ^{1,2} , Chang-Hun Song ^{3,4} , Hyunchul Jang ³ , Sang Tae Lee ³ , Chang Zoo Kim ³ , Shinkeun Kim ³ , Youngsu Choi ³ , Kwangseok Seo ^{1,3} , and Chan-Soo Shin ³ ¹ Department of Electrical and Computer Engineering, Seoul National University, ² Inter-university Semiconductor Research Center, Seoul National University, ³ KANC, ⁴ Department of Material Science and Engineering, Yonsei University
TP1-060	Study on the Growth of Gallium Oxide Thin Films Using Diamond Buffer Layer Grown by the Hot filament-CVD Ji-Yeon Seo ^{1,2} , Tae-Gyu Kim ³ , Yun-Ji Shin ¹ , Seong-Min Jeong ¹ , and Si-Young Bae ¹ ¹ Energy and Environmental Division, KICET, ² Department of Nano Fusion Technology, Pusan National University, ³ Department of Nano Mechatronics Technology, Pusan National University
TP1-061	Asymmetric Flow Rate Control for High-quality α-Ga₂O₃ on 2-inch Sapphire Substrate Sunjae Kim ^{1,2} , Hyeong-Yun Kim ^{1,3} , Jae-Hyeong Lee ^{1,4} , Min-Ji Oh ¹ , Dae-Woo Jeon ¹ , and Ji-Hyeon Park ¹ ¹ KICET, ² Korea Aerospace University, ³ Pukyong National University, ⁴ Andong National University
TP1-062	Fabrication and Characterization of ϵ-Ga₂O₃-Based Solar Blind UV Photodetector Seong-Ho Cho ^{1,2} , Dong-Eon Kim ^{1,3} , Yun-Ji Shin ¹ , Minh-Tan Ha ¹ , Seong-Min Jeong ¹ , Se Hun Kwon ² , Min-Su Park ³ , and Si-Young Bae ¹ ¹ KICET, ² Pusan National University, ³ Dong-A National University
TP1-063	Control of Mist Flow by Changing the Susceptor Design for the Growth of Ga₂O₃ Thin Films in Mist Chemical Vapor Deposition Sun-Young Park ^{1,2} , Minh-Tan Ha ¹ , Kyoung-Ho Kim ¹ , Yun-Ji Shin ¹ , Seong-Min Jeong ¹ , Se-Hun Kwon ² , and Si-Young Bae ¹ ¹ Energy and Environmental Division, KICET, ² School of Materials Science and Engineering, Pusan National University
TP1-064	Magnetic Properties of Granular Thin Films FePt-X(X= TiO₂, Ta₂O₅) according to Deposited Temperature Eun-ji Im, Donghyun Lee, Nyunjong Lee, Jungmin Park, and Sanghoon Kim Department of Physics, University of Ulsan
TP1-065	Effect of Insulator Layers on Domain Switching Dynamics in HfO₂-Based Metal-Ferroelectric-Insulator-Semiconductor Capacitors Yoon Ki Kim and Sang Mo Yang Department of Physics, Sogang University



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TP1-066	<p>리사이클링 CVD-SiC 소재를 이용한 고순도 SiC 단결정 성장</p> <p>김용현¹, 배시영¹, 이윤주¹, 김슬기¹, 신윤지¹, 이명현¹, 양인석², 김일곤², 김창민², 정성민¹</p> <p>¹한국세라믹기술원, 에너지환경본부, ²하나머티리얼즈</p>
TP1-067	<p>N-polar GaN HEMT Structure Growth Using Metal Organic Chemical Vapor Deposition</p> <p>Seongmin Kang, Yunseok Heo, Minho Kim, Keono Kim, Uiho Choi, and Okhyun Nam</p> <p>Convergence Center for Advanced Nano Semiconductor (CANS), Department of Nano-Semiconductor Engineering, Korea Polytechnic University (KPU)</p>
TP1-068	<p>Phase Engineering and High-crystalline Hetero Epitaxial Growth of α-Ga₂O₃ by Mist Chemical Vapor Deposition</p> <p>Joon Hui Park and You Seung Rim</p> <p>Department of Intelligent Mechatronics Engineering, and Convergence Engineering for Intelligent Drone, Sejong University</p>
TP1-069	<p>A Surface-Emitting Photonic Crystal Laser By InGaN Tunnel Junction Nanowire heterostructure</p> <p>Jeong-Kyun Oh, Dae-Young Um, Ji-Yeon Kim, Cheul-Ro Lee, and Yong-Ho Ra</p> <p>School of Advanced Materials Engineering, Engineering College, Jeonbuk National University</p>
TP1-070	<p>A 913 nm-wavelength InGaN Quasi-quantum Dot Fabricated On Non-polar GaN Nanowire Structures</p> <p>Ji-Yeon Kim, Dae-Young Um, Jeong-Kyun Oh, Cheul-Ro Lee, and Yong-Ho Ra</p> <p>School of Advanced Materials Engineering, Engineering College, Jeonbuk National University</p>

D. Thin Film Process Technology

심사위원: 김성근 책임(KIST), 한정환 교수(서울과학기술대학교), 안지훈 교수(한양대학교),
전우진 교수(경희대학교), 이웅규 교수(명지대학교)

TP1-071	<p>Enhanced Blue Fluorescent Protein (eBFP)/IGZO Thin Film-Based Phototransistors for Real-Time UV Monitoring Application</p> <p>Jongwon Yoon¹ and Woong-Ki Hong²</p> <p>¹Jeonju Center, Korea Basic Science Institute, ²Center for Scientific Instrumentation, Korea Basic Science Institute</p>
TP1-072	<p>Synaptic Device with Double-Structured Gate Dielectric of Ionic Behavior Showing Electrical Synaptic Characteristics</p> <p>Min A Park¹, Jung Wook Lim^{1,2}, and Sung Hoon Hong^{1,2}</p> <p>¹Nano New Materials Application Lab, ETRI, ²Department of Advanced Device Engineering, UST</p>
TP1-073	<p>Improvement of the Electrical Properties in Hf_{0.3}Zr_{0.7}O₂ with Al Doping Using Atomic Layer Deposition</p> <p>Min Ji Jeong, Seung Won Lee, and Ji-Hoon Ahn</p> <p>Department of Materials Science and Chemical Engineering, Hanyang University</p>



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TP1-074	Implementation of High Performance Al_2O_3 / IZO TFTs Under Various Diffusion Conditions Se Hyeong Lee, So-Young Bak, and Moonsuk Yi <i>Department of Electronics Engineering, Pusan National University</i>
TP1-075	Amorphous-IGZO TFT based on Yttrium-Doped Zirconia Dielectric Eun Kyung Jo, Jeong Hyun Ahn, Tae Eun Ha, Hwarim Im, and Yong-Sang Kim <i>Department of Electrical and Computer Engineering, Sungkyunkwan, University</i>
TP1-076	Phase Control of Two-Dimensional Tin Sulfide Compounds Deposited by Atomic Layer Deposition Dong Geun Kim, Jeong-Hun Choi, and Ji-Hoon Ahn <i>Department of Materials Science and Chemical Engineering, Hanyang University</i>
TP1-077	Implementation of High-Performance Potassium-Selective Sensor Platform based on IGZO Thin-Film Transistor by Resistive Coupling Effect Young Jun Lee and Won-Ju Cho <i>Department of Electronic Materials Engineering, Kwangwoon University</i>
TP1-078	Wake-up 현상 억제 강유전성 $\text{Mo}/\text{Hf}_{0.5}\text{Zr}_{0.5}\text{O}_2/\text{Mo}$ 캐패시터의 하부전극에 따른 영향 연구 Geun Taek Yu ¹ , Se Hyun Kim ¹ , Ju Yong Park ¹ , Dong Hyun Lee ¹ , and Min Hyuk Park ² <i>¹School of Materials Science and Engineering, Pusan National University, ²Department of Materials Science and Engineering and Inter-University Semiconductor Research Center, Seoul National University</i>
TP1-079	A Study on the Development of Titanium-Based Thin Film Transistors Using Super-cycles of Plasma-enhanced Atomic Layer Deposition Chohyeon Park ^{1,2} and Jung Wook Lim ^{1,2} <i>¹ETRI, ²University of Science and Technology</i>
TP1-080	Wafer-Scaled Vertical Three-Terminal Oxygen-Based Synapse Device for High-Density Neuromorphic System Geonhui Han, Jongseon Seo, and Daeseok Lee <i>Department of Electronic Materials Engineering, Kwangwoon University</i>
TP1-081	Improvement of Atomic Layer Deposited TiO_2 Film Crystallinity by Plasma Atomic Layer Annealing with DC Biasing Jeong Woo Shin ¹ , Dohyun Go ² , Jaehyeong Lee ³ , Seunghyeon Lee ³ , and Jihwan An ^{2,3} <i>¹New Energy Engineering, Seoul National University of Science and Technology, ²Nano-Bio Engineering, Seoul National University of Science and Technology, ³MSDE, Seoul National University of Science and Technology</i>
TP1-082	Evaluation of Yttrium as an Acceptor Dopant in TiO_2 for DRAM Capacitor Applications Tae Kyun Kim, Dae Seon Kwon, Junil Lim, Haengha Seo, Heewon Paik, and Cheol Seong Hwang <i>Department of Materials Science and Engineering and Inter-University Semiconductor Research Center, Seoul National University</i>



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TP1-083	<p>Electrical Characteristics of Ge₂Sb₂Te₅ Phase Change Memory Line Cells with Thin Film Transistor Wonho Choi, Chanyoung Yoo, Woohyun Kim, Jeong Woo Jeon, Byongwoo Park, Gwangsik Jeon, Sangmin Jeon, and Cheol Seong Hwang <i>Department of Materials Science and Engineering and Inter-University Semiconductor Research Center, Seoul National University</i></p>
TP1-084	<p>Ferroelectricity of Hf_{1-x}Zr_xO₂ Thin Films Using Hf[Cp(NMe₂)₃] and Zr[Cp(NMe₂)₃] Precursors Depending on Zr Content via Atomic Layer Deposition Youkyoung Oh, Hyo-Bae Kim, and Ji-Hoon Ahn <i>Department of Materials Science and Chemical Engineering, Hanyang University</i></p>
TP1-085	<p>지속가능한 ALD 공정챔버 개발을 위한 공정갭에 따른 가스유동 평가 유경훈¹, 김춘식², 손범수², 송근수³, 이건형⁴ <i>¹한국생산기술연구원, ²(주)티엔지, ³(주)금영이엔지, ⁴삼성디스플레이</i></p>
TP1-086	<p>Controlling Charge Carrier Density for Complementary-like Inverter based on Solution-Processed Ambipolar Semiconductor Yeon Jun Kim¹, Jingwan Kim², Yongju Lee³, Swarup Biswas³, Hyeok Kim³, Yun-Hi Kim², and Jeonghun Kwak¹ <i>¹Department of Electrical and Computer Engineering and Inter-University Semiconductor Research Center, Seoul National University, ²Department of Chemistry, Gyeongsang National University, ³School of Electrical and Computer Engineering, University of Seoul</i></p>
TP1-087	<p>Non-Volatile Ambipolar Floating-Gate Memory Devices Using Small-Molecules Bilayer Yunchae Jeon¹, Seongjae Kim², and Hocheon Yoo² <i>¹Department of Biomedical Engineering, Gachon University, ²Department of Electronic Engineering, Gachon University</i></p>
TP1-088	<p>A Study on the Identification of Hydrogen Diffusion Mechanism in IGZO Thin Film Transistors and Its Electrical Characteristics Hee Yeon Noh, Joonwoo Kim, June-Seo Kim, Myoung-Jae Lee, and Hyeon-Jun Lee <i>Division of Nanotechnology, DGIST</i></p>
TP1-089	<p>Morphology-Dependent Negative Differential Resistance Behaviors of Zinc Oxide/p-Si Heterojunction Structures Somi Kim¹, Taehyun Park^{1,2}, and Hocheon Yoo¹ <i>¹Department of Electronic Engineering, Gachon University, ²Department of Chemical & Biological Engineering, Gachon University</i></p>
TP1-090	<p>Dielectric Surface-Dependent Photoresponsive Characteristics of C8-BTBT Thin-Film Phototransistors Jihyun Shin, Somi Kim, and Hocheon Yoo <i>Department of Electronic Engineering, Gachon University</i></p>
TP1-091	<p>Polycrystalline Al₂O₃ Thin Film by Aerosol Deposition Using A Sacrificial Layer for Flexible Device Hyeon Ho Cho and Hak Ki Yu <i>Department of Materials Science and Engineering and Department of Energy Systems Research, Ajou University</i></p>



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TP1-092	Carrier Transport Analysis of Quantum Dot/Metal Oxide Hybrid Phototransistors with Metal-Chalcogenide Interfaces Joon Bee Park ¹ , Jaehyun Kim ² , Chanho Jo ¹ , Young-Woo Jang ¹ , and Sung Kyu Park ¹ ¹ School of Electrical and Electronics Engineering, Chung-Ang University, ² Department of Chemistry and Materials Research Center, Northwestern University
TP1-093	Fully Transparent and Highly Sensitive Chemical Sensor based on a-IGZO Thin-Film Transistor with Coplanar Gates on Flexible Polyimide Substrates Tae-Hwan Hyun and Won-Ju Cho Department of Electronic Materials Engineering, Kwangwoon University
TP1-094	Atomic Layer Deposition of Ru Thin Films Using Novel Ru(II) Precursor with Enhanced Reactivity Seung Hoon Oh ^{1,2} , Seung Min Yeo ¹ , Hyeon Bin Park ¹ , Tae Joo Park ² , Taeyong Eom ¹ , and Taek-Mo Chung ¹ ¹ Division of Advanced Materials, KRICT, ² Department of Materials Science and Chemical Engineering, Hanyang University
TP1-095	IGZO Nanowire-Based High-Performance Field-Effect Transistors Using Electrospun PVP Nanofiber Template Transfer Ki-Woong Park and Won-Ju Cho Department of Electronic Materials Engineering, Kwangwoon University
TP1-096	NF₃ 및 F₃NO 플라즈마를 이용한 산화규소와 질화규소의 반응성 이온 식각 특성 연구 Woo-Jae Kim, Sun-Hee Lee, In Young Bang, Ji Hwan Kim, Yeon Soo Park, Hee Tae Kwon, Gi Won Shin, and Gi-Chung Kwon Kwangwoon University
TP1-097	Structural Rearrangement of Molecular Layer Deposited Metalcone to 2D like Carbon by Electron Beam Irradiation for Area Selective Deposition Seunghwan Lee ¹ , GeonHo Baek ² , and Jin-Seong Park ^{1,2} ¹ Division of Materials Science and Engineering, Hanyang University, ² Division of Nano-Scale Semiconductor Engineering, Hanyang University
TP1-098	Atomic Layer Deposition of Two-Dimensional (2D) Bismuth Oxyselenides (Bi₂O₂Se) Hyeon Bin Park ^{1,2} , Ki Bum Kang ² , Taeyong Eom ¹ , and Taek-Mo Chung ¹ ¹ Division of Advanced Materials, KRICT, ² Department of Materials Science and Engineering, KAIST
TP1-099	Analysis of the off-state Characteristics of In-Ga-Zn-Oxide TFTs with Additional Potential Barrier in Channel Region Jinsil Gong ¹ , Hyoungbeen Ju ² , Jiyoung Bang ² , Sehoon Oh ² , Yeonsu Lee ² , Hyeonjeong Sun ¹ , Minjin Kwon ¹ , Onejae Sul ³ , and Seung-Beck Lee ^{1,2,3} ¹ Department of Electronic Engineering, Hanyang University, ² Department of Nanoscale Semiconductor Engineering, Hanyang University, ³ Institute of Nano Science and Technology, Hanyang University
TP1-100	High Performance of IGZO Transistor Deposited by Plasma Enhanced Atomic Layer Deposition: In-Ga-Zn Sublayer Ratio Approach Seong Hun Yoon, Min Jae Kim, Yoon Ji Choi, and Jeong Eun Oh Department of Electronic Engineering, Hanyang University



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TP1-101	High-Performance Polycrystalline Indium Gallium Oxide Thin –Film Transistor with SiO₂ Passivation Layer Sangwon Chung, Cheolhee Choi, Gwangbok Kim, Dohyun Kim, and Jae Kyeong Jeong <i>Department of Electronic Engineering, Hanyang University</i>
TP1-102	Ferroelectric Lanthanum-Modified Bismuth Titanates Thin Film for High Efficiency Photovoltaic Rui Tang and Chung Wung Bark <i>Department of Electrical Engineering, Gachon University</i>
TP1-103	Voltage Pulse Dependence of Controllability for The Conduction Phase in Oxide Transistors with Dual Gate Dielectrics Jaehee Lee ^{1,2} and Jung Wook Lim ^{1,2} ¹ ETRI, ² University of Science and Technology
TP1-104	High-k Engineered Dielectric Layer Based Self-Sensitivity Amplifying Dual Gate Ion-Sensitive Field-Effect Transistor Yeong-Ung Kim and Won-Ju Cho <i>Department of Electronic Materials Engineering, Kwangwoon University</i>
TP1-105	Influence of External Oxide on Resistive Switching Properties of HfO₂-Based Memristors Ye Byeol An, Seung Hee Cha, Jeong A Lee, Tae Woong Moon, and Jae Kyeong Jeong <i>Department of Electronic Engineering, Hanyang University</i>
TP1-106	Improvement Contact Resistance of Oxide Semiconductors Using a Titanium Nitride Interlayer at High-Temperature Annealing Seungwan Seo ¹ , Taiky Kim ¹ , Hongwei Xu ¹ , Heesung Han ¹ , and Jae Kyeong Jeong ¹ ¹ Department of Electronic Engineering, Hanyang University
TP1-107	Improved Polysilicon Thin-film Transistor Characteristics Using Microwave Annealing Sun Hyeong Lee, Jongwon Lee, and Hyunsang Hwang POSTECH
TP1-108	Area-Selective Atomic Layer Deposition of Ru Thin Films Using Phosphonic Acid Self-Assembled Monolayers with Different Alkyl Chain Lengths Seo-Hyun Lee, Jeong-Min Lee, and Woo-Hee Kim <i>Department of Materials Science and Chemical Engineering, Hanyang University</i>
TP1-109	Area-Selective Atomic Layer Deposition of Ruthenium Thin Films Using Vapor-Phase Amino Group-Containing Inhibitors Jieun Oh, Jeong-Min Lee, and Woo-Hee Kim <i>Department of Materials Science and Chemical Engineering, Hanyang University</i>



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TP1-110	<p>Polymer Electret을 이용한 DNNT 기반의 비휘발성 OFET 메모리 권희진, 이용수, 김승모, 이준호, 김시현, 권민규, 황현준, 이병훈 <i>Department of Electrical Engineering, POSTECH</i></p>
TP1-111	<p>SnO₂ 삼진 로직 소자 제작 및 시간에 따른 소자 안정성 연구 이해원, 김소영, 이호인, 이용수, 김승모, 황현준, 이병훈 <i>Department of Electrical Engineering, POSTECH</i></p>
TP1-112	<p>저온 성장된 ZrO₂ MIM 커패시터의 전기적 특성 향상 방법에 관한 연구 김승모, 이준호, 이용수, 이호인, 김시현, 권희진, 이해원, 황현준, Surajit Some, 이병훈 <i>Department of Electrical Engineering, POSTECH</i></p>
TP1-113	<p>2D 물질 기반 Band Modulation FET의 전기적 특성에 관한 연구 이준호¹, 김승모¹, Muhammad Taqi², 이호인¹, 이용수¹, 권민규¹, 이해원¹, 황현준¹, 유원종², 이병훈¹ ¹Department of Electrical Engineering, POSTECH, ²Department of Nano Science and Engineering, Sungkyunkwan University</p>
TP1-114	<p>Performance Merits of Scaled ZnO Stacked Nanosheet Channel Ternary Field Effect Transistor Ho-In Lee, So-Young Kim, Seung-Mo Kim, Yongsu Lee, Hae-Won Lee, Heejin Kwon, Junho Lee, Hyeon Jun Hwang, and Byoung Hun Lee <i>Department of Electrical Engineering, POSTECH</i></p>
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TP1-116	<p>A Study on the Physical Properties of Low-temperature Silicon Nitride Thin Films Deposited with PE-ALD Baek-Ju Lee, Dong-Won Seo, Jae-Soon Hwang, and Jae-Wook Choi <i>Advanced Technology TF, Hanwha Corporation</i></p>
TP1-117	<p>Enhancement in Electron Mobility through Band-Gap Engineering in Atomic-Layer-Deposited In-Ga-Zn-O Stacks Jae Hoon Cho, Min Hoe Cho, Jae Seok Hur, Seong hun Yoon, and Jae Kyeong Jeong <i>Department of Electronic Engineering, Hanyang University</i></p>
TP1-118	<p>An Artificial Receptor Using Diffusive Memristor based on Surface Electromigration Young Geun Song¹, Chong-Yun Kang^{1,2}, and Jung Ho Yoon¹ ¹Center for Electronic Materials, KIST, ²KU-KIST Graduate School of Converging Science and Technology, Korea University</p>



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TP1-119	<p>Characteristics of Negative Bias Illumination Stress at Varying Wavelengths of a-InGaZnO TFT</p> <p>Jongmin Yoo and Byoungdeog Choi <i>Department of Electrical and Computer Engineering, Sungkyunkwan University</i></p>
TP1-120	<p>차세대 Device Seamless Gap-fill 공정을 위해 Inhibitor를 이용한 SiO₂ PE-ALD 공정 개발</p> <p>Yoenju Choi^{1,2}, Taehoon Kim², Hangyul Lee², Jusung Park², Juhwan Park², Dongho Ryu², and Woojin Jeon¹ ¹<i>Department of Advanced Materials Engineering for Information and Electronics, Kyung Hee University, </i>²<i>Semiconductor R&D Center, WONIK IPS Co., Ltd.</i></p>
TP1-121	<p>Improvement of Reliability of Multi-Stacked Active Layer a-InGaZnO Thin Film Transistors</p> <p>Ayeon Jang and Byoungdeog Choi <i>Department of Electrical and Computer Engineering, Sungkyunkwan University</i></p>
TP1-122	<p>Analysis of High-temperature Annealing Dependence of 7nm Channel IGZO TFTs</p> <p>Hyeonjeong Sun¹, Hyoungbeen Ju², Jiyoung Bang², Jinsil Gong¹, Sehoon Oh², Yeonsu Lee², Minjin Kwon¹, Onejae Sul³, and Seung-Beck Lee^{1,2,3} ¹<i>Department of Electronic Engineering, Hanyang University, </i>²<i>Department of Nanoscale Semiconductor Engineering, Hanyang University, </i>³<i>Institute of Nano Science and Technology (INST), Hanyang University</i></p>
TP1-123	<p>Threshold Switching Characteristics of Chromium Telluride Thin Film Deposited by RF Sputtering</p> <p>Minkyu Kang, Jaeyeon Kim, Wansun Kim, and Hyunchul Sohn <i>Department of Materials Science and Engineering, Yonsei University</i></p>
TP1-124	<p>Non-Filamentary Forming-free Resistive Switching Characteristics of NiO Thin Film Deposited by RF Sputtering System</p> <p>Changho Yoon, Jeongwoo Lee, Jaeyeon Kim, and Hyunchul Sohn <i>Department of Materials Science and Engineering, Yonsei University</i></p>
TP1-125	<p>Threshold Switching Characteristics of LaxNi_{1-x}O₃ Thin Film Deposited by RF Co-Sputtering System</p> <p>Jeongwoo Lee, Changho Yoon, and Hyunchul Sohn <i>Department of Materials Science and Engineering, Yonsei University</i></p>
TP1-126	<p>Threshold Switching Characteristics of Amorphous Ga₂Te₃ Film with Ag Doping</p> <p>Jaeyeon Kim, Minkyu Kang, Wansun Kim, Jeongwoo Lee, and Hyunchul Sohn <i>Department of Materials Science and Engineering, Yonsei University</i></p>
TP1-127	<p>Roll-to-roll Process-Based Low-temperature Atmospheric Spatial Atomic Layer Deposition Technology and Applications</p> <p>Jae-Wook Lee, Kyung-Hwan Kim, and Kyung-Hyun Choi <i>Department of Mechatronics Engineering, Jeju National University</i></p>



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TP1-129	Effects of Electric Field on the Surface Adsorption of Al Precursors: a DFT Study Jiho Yang and Bonggeun Shong <i>Chemical Engineering, Hongik University</i>
TP1-130	A Wake-up-free Effect in Metal-ferroelectric-metal Capacitor Consisted of Hf_{0.5}Zr_{0.5}O₂ and TiN(200) Bottom Electrode Dong Hee Han ^{1,2} , Ae Jin Lee ^{1,2} , Minkyong Nam ^{1,2} , Taehwan Moon ³ , and Woojin Jeon ^{1,2} <i>¹Department of Advanced Materials Engineering for Information and Electronics, Kyung Hee University, ²Integrated Education Program for Frontier Science & Technology (BK21 Four), Kyung Hee University, ³Material Research Center, Samsung Advanced Institute of Technology</i>
TP1-131	Molecular Oxidation Mechanism of TiN Surfaces: a DFT Study Ju Hyeon Jung, Hongjun Oh, Neung-Kyung Yu, and Bonggeun Shong <i>Chemical Engineering, Hongik University</i>
TP1-132	Improved Resistive Switching Characteristics Using HfO₂ NRs Memristor Jae Uk Kwon ^{1,2} , and Jung Ho Yoon ¹ <i>¹Electronic Materials Research Center, KIST, ²Department of Materials Science and Engineering, Korea University</i>
TP1-133	Mechanistic Analysis for an Alternative Low-Temperature Atomic Layer Deposition of Titanium Nitride Jinwoo Lee, Tran Thi Ngoc Van, and Bonggeun Shong <i>Chemical Engineering, Hongik University</i>
TP1-134	Improvement of Electrical Stability of Thin a-IGZO TFTs by Two-step Annealing Minjin Kwon ¹ , Jinsil Gong ¹ , Hyeonjeong Sun ¹ , Hyoungbeen Ju ² , Jiyoung Bang ² , Sehoon Oh ² , Yeonsu Lee ² , Onejae Sul ³ , and Seung-Beck Lee ^{1,2,3} <i>¹Department of Electronic Engineering, Hanyang University, ²Department of Nanoscale Semiconductor Engineering, Hanyang University, ³Institute of Nano Science and Technology, Hanyang University</i>
TP1-135	Chemical Mechanism for Surface Passivation of Silicon Nitride with Aldehyde Jiwon Kim, Hongjun Oh, and Bonggeun Shong <i>Chemical Engineering, Hongik University</i>
TP1-136	Electronic Physically Unclonable Functions(PUFs) based on Solution-Processible Organic Thin-Film Transistor Arrays with Enhanced Stability for Advanced Hardware Security Technology Dongyoung Kim ^{1,2} , Seongil Im ^{2,3} , Hyunsu Ju ² , and Jung Ah Lim ^{1,2} <i>¹University of Science and Technology, ²KIST, ³Yonsei University</i>



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TP1-138	Surface Diffusion of Ru on Various Substrates: A DFT Study Changhyun Ahn and Bonggeun Shong <i>Chemical Engineering, Hongik University</i>
TP1-139	Gas Sensors for Hydrogen Detection Using Pt/TiO₂ Nanorods/Pt structure Suk Yeop Chun ^{1,2} , Young Geun Song ² , Chong-Yun Kang ^{1,2} , and Jung Ho Yoon ² ¹ <i>KU-KIST Graduate School of Converging Science and Technology, Korea University,</i> ² <i>Electronic Materials Research Center, KIST</i>
TP1-140	High-resolution Piezoresistive Film based on Anisotropically Aligned Ni/PDMS Composite for e-skin Applications Hanul Kim, Daesik Kim, Jiseok Seo, and Yongtaek Hong <i>Seoul National University</i>
TP1-141	Indium Gallium Tin Oxide Thin Film Transistor Fabricated by Atomic Layer Deposition Hyeonhui Jo, Jong Hyeon Won, Pil Ju Youn, and Jeong Hwan Han <i>Department of Materials Science and Engineering, Seoul National University of Science and Technology</i>
TP1-142	Effect of Atomic-Layer-Deposited HfO₂ or ZrO₂ Interlayer on the Electrical Performance of P-type SnO Thin Film Transistor Jina Kim ¹ , Hee Won Jang ¹ , Myeong Gil Chae ¹ , Wonho Jo ¹ , Bo Keun Park ² , Taek-Mo Chung ² , and Jeong Hwan Han ¹ ¹ <i>Department of Materials Science and Engineering, Seoul National University of Science and Technology,</i> ² <i>Division of Advanced Materials, KRICT</i>
TP1-143	Improving Functions of Tellurium-Based Ovonic Threshold Switch through Material Doping Hyun Kyu Seo ¹ , Jin Joo Ryu ² , Su Yeon Lee ¹ , Wooseok Song ² , Gun Hwan Kim ² , and Min Kyu Yang ¹ ¹ <i>Intelligent Electronic Device Lab, Sahmyook University,</i> ² <i>Division of Advanced Materials, KRICT</i>
TP1-144	Reduced Graphene Oxide Thin Film by Low-temperature Microwave-assisted Reduction Cheul Hyun Yoon and Byoung Don Kong <i>Department of Electrical Engineering, POSTECH</i>
TP1-145	MoO₂ Thin Film as a Conductive Oxide Electrode for the Next Generation DRAM Capacitor Using Atomic Layer Deposition Ye Won Kim ¹ , Dae Chol Lee ¹ , Ae Jin Lee ¹ , Gyu Hwa Hong ¹ , Songyi Moon ² , Taewon Youn ² , Minyung Lee ² , and Woojin Jeon ¹ ¹ <i>Department of Advanced Materials Engineering for Information and Electronics, and Integrated Education Program for Frontier Science & Technology (BK21 Four), Kyung Hee University,</i> ² <i>SK Hynix</i>



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TP1-146	<p>Growth of Rutile TiO₂ Using VO₂ Thin Films Deposited by Atomic Layer Deposition Seungwoo Lee¹, Dong Hee Han¹, Min Kyeong Nam¹, Ye Won Kim¹, Dong Hyun Kim², Kyung Mog Kim², Yong Joo Park², and Woojin Jeon¹ ¹Department of Advanced Materials Engineering for Information and Electronics, and Integrated Education Program for Frontier Science & Technology (BK21 Four), Kyung Hee University, ²Advanced Research Development Team, SK Trichem Co., Ltd.</p>
TP1-147	<p>Enhancement of Y-doped HfO₂ Thin Film Atomic Layer Deposition Process Using Liquid Delivery System Young Uk Ryu¹, Jenam Kim¹, Hansol Oh², Inchun Hwang², Yong Joo Park², and Woojin Jeon¹ ¹Department of Advanced Materials Engineering for Information and Electronics, and Integrated Education Program for Frontier Science & Technology (BK21 Four), Kyung Hee University, ²Advanced Research Development Team, SK Trichem Co., Ltd.</p>
TP1-148	<p>Growth and Properties of Molybdenum Oxide Thin Film by rf Magnetron Sputtering Jae Hyeon Lee, Wangu Kang, and Jeong Hwan Han Department of Materials Science and Engineering, Seoul National University of Science and Technology</p>
TP1-149	<p>Improve HfO₂-TiN Interface Characteristics by Introducing a Passivation Layer to Suppress an Interfacial Layer Dae Cheol Lee¹, Byung Seok Kim¹, Ye Won Kim¹, Ji Hyeon Hwang¹, Dong Hee Han¹, Ae Jin Lee¹, Hansol Oh², Yong Joo Park², and Woojin Jeon¹ ¹Department of Advanced Materials Engineering for Information and Electronics, and Integrated Education Program for Frontier Science & Technology (BK21 Four), Kyung Hee University, ²Advanced Research Development Team, SK Trichem Co., Ltd.</p>
TP1-150	<p>Characteristics of Low Dielectric Constant SiCOH Films Deposited by PECVD Using Octamethylcyclotetrasiloxane and Phenyltrimethoxysilane Precursors Taesoon Jang, Namwuk Baek, Jihwan Cha, Shinwon Kang, Chanyong Seo, Gihoon Park, and Donggeun Jung Department of Physics, Sungkyunkwan University</p>
TP1-151	<p>Effects of Carbon Tetrafluoride/Oxygen (CF₄/O₂) Based Plasma Etching on low-k Thin Films Deposited with the 1,1,1,3,5,7,7 Octamethyl-3,5-Bis(trimethylsiloxy) Tetrasiloxane Precursor by PECVD Namwuk Beak¹, Hyuna Lim², Jihwan Cha¹, and Donggeun Jung¹ ¹Department of Physics, Sungkyunkwan University, ²ASM Korea Ltd.</p>
TP1-152	<p>High-mobility InGaSnO Thin Film Transistors Fabricated by Plasma-Enhanced Atomic Layer Deposition Jong Hyeon Won¹, Hyeonhui Jo¹, Pil Ju Youn¹, Heenang Choi², Bo Keun Park², Taek-Mo Chung², and Jeong Hwan Han¹ ¹Department of Materials Science and Engineering, Seoul National University of Science and Technology, ²Division of Advanced Materials, KRICT</p>
TP1-153	<p>Atomic Layer Deposition of SrO Thin Films with a Novel Sr Precursor and O₃ on Si Substrate Yeji Lee¹, Daeun Lim¹, Jonghyun Kim¹, Seungjo Yea¹, Chanwoo Park², Bo Keun Park², Taek-Mo Chung², and Woongkyu Lee¹ ¹Department of Electrical Engineering, Myongji University, ²Thin Film Materials Research Center, KRICT</p>
TP1-154	<p>Atomic Layer Deposition of Ga₂O₃ Thin Films by Two Consecutive Pulses of O₃ and H₂O 윤필주¹, 조현희¹, 원종현¹, 박보근², 정택모², 한정환¹ ¹Department of Materials Science and Engineering, Seoul National University of Science and Technology, ²Division of Advanced Materials, KRICT</p>



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TP1-155	Annealing Effect of Li Based Diffusive Memristor in Various Ambient Ju Hwan Park, Gyu Min Park, and Byung Joon Choi <i>¹Department of Materials Science and Engineering, Seoul National University of Science and Technology</i>
TP1-156	Thermal Analysis of Chalcogenide Films for Ovonic Threshold Switch Ju Hwan Park ¹ , Myeong Jun Jung ¹ , Gun Hwan Kim ² , Min Kyu Yang ³ , and Byung Joon Choi ¹ <i>¹Department of Materials Science and Engineering, Seoul National University of Science and Technology, ²Thin-Film Materials Research Center, KRICT, ³Division of AI Convergence Engineering, Sahmyook University</i>
TP1-157	Low Temperature Growth of ZnO Thin Films by Atomic Layer Deposition Ye Bin Weon, Ji Young Park, Myeong Jun Jung, and Byung Joon Choi <i>Department of Materials Science and Engineering, Seoul National University of Science and Technology</i>
TP1-158	Bi-layered ZrO₂/Y₂O₃ Structure for Ge-Based Devices Grown by Atomic Layer Deposition Geun-Ha Oh and Il-Kwon Oh <i>Department of Electrical and Computer Engineering, Ajou University</i>
TP1-159	Growth of In-situ Crystallized Rutile-TiO₂ Thin Films on SnO₂ Layers for DRAM Capacitors Daeun Lim ¹ , Yeji Lee ¹ , Jonghyun Kim ¹ , Jina Kim ² , Jeong Hwan Han ² , and Woongkyu Lee ¹ <i>¹Department of Electrical Engineering, Myongji University, ²Department of Materials Science and Engineering, Seoul National University of Science and Technology</i>
TP1-160	1-Selector -1-Memristor(1S1R) Device with Low Power for Neuromorphic Computing Application Ji Eun Kim ^{1,2} , Sahn Nahm ² , and Jung Ho Yoon ¹ <i>¹Electronic Materials Research Center, KIST, ²Materials Science and Engineering, Korea University</i>
TP1-161	Atomic Layer Deposition of Molybdenum Carbides: The Influences of Mo Precursor and Post-reduction Annealing Ji Sang Ahn, Wangu Kang, and Jeong Hwan Han <i>Department of Materials Science and Engineering, Seoul National University of Science and Technology</i>
TP1-162	Effects of the Thickness and Deposition Temperature on the Resistivity of Atomic-Layer-Deposited Ruthenium Film Eun Chong Ko, Jae Yeon Kim, and Jeong Hwan Han <i>Department of Materials Science and Engineering, Seoul National University of Science and Technology</i>
TP1-163	Effects of Annealing Temperature on Electrical Properties of In-Ga-Sn-O Thin Films Changyong Oh, So Hee Park, and Bo Sung Kim <i>Department of Applied Physics, Korea University</i>



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TP1-165	Study of Conduction Mechanism in SiO_2 Thin Films Deposited by Plasma Enhanced Atomic Layer Deposition Taehyeon Kim, Changyong Oh, So Hee Park, and Bo Sung Kim <i>Department of Applied Physics, Korea University</i>
TP1-166	Effects of Nd:YVO₄ Laser Beam Power on the Annealing of RF-Sputtered MoS_2 Layers Van Tuan Nguyen ¹ , Yuanrui Qi ¹ , Minseok Song ¹ , In Hwan Kim ¹ , Vu Binh Nam ² , DaeHo Lee ² , Sang Jik Kwon ¹ , and Eou-Sik Cho ¹ ¹ <i>Department of Electronic Engineering, Gachon University, </i> ² <i>Department of Mechanical Engineering, Gachon University</i>
TP1-167	Anti-Ferroelectric Properties of the ALD Si-doped HfO_2 Devices with Tungsten and Molybdenum Metal Contacts Tae Heun Kim ¹ , Duho Kim ¹ , Boncheol Ku ¹ , Chul Won Chung ² , and Changhwan Choi ¹ ¹ <i>Division of Materials Science & Engineering, Hanyang University, </i> ² <i>Department of Energy Engineering, Hanyang University</i>
TP1-168	Study of Activation and Deactivation Process in Heavily Phosphorus-Doped Epitaxial Si Film by High-Resolution X-ray Photoelectron Spectroscopy Hwa-yeon Ryu ¹ , Heungsoo Park ² , and Dae-Hong Ko ¹ ¹ <i>Department of Materials Science and Engineering, Yonsei University, </i> ² <i>BIO-IT Micro Fab Center, Yonsei University</i>
TP1-169	Cyclic Etching of Copper Thin Films Using Organic Compound/O_2/Ar Gas Seung Hyun Kim, Eun Taek Lim, Ji Soo Lee, Sung Yong Park, Hyun Mok Jeong, and Chee Won Chung <i>Department of Chemical Engineering, Inha University</i>
TP1-170	인간 두뇌 구조를 모방한 전 무기질 광시냅스 Go Eun Choi and You Seung Rim <i>Department of Intelligent Mechatronics Engineering, and Convergence Engineering for Intelligent Drone, Sejong University</i>
TP1-171	Improving the Stability of MgO-Based Capacitors by Inserting BeO Thin Film Grown via Atomic Layer Deposition Bo Wen Wang, Seungsoo Kim, Haewon Song, Haengha Seo, Xiangyuan Li, Jin Myung Choi, Jinwoo Choi, and Cheol Seong Hwang <i>Department of Materials Science and Engineering, and Inter-University Semiconductor Research Center, Seoul National University</i>
TP1-172	Infiltration Kinetics of Metalorganic Precursors in Polymers Probed by in-situ Fourier Transform Infrared Spectroscopy Jiwoong Ham, Min Kyoung Ko, and Nari Jeon <i>Department of Materials Science and Engineering, Chungnam National University</i>



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TP1-174	The Electrical Characteristics of ALD Si-doped HfO₂ Ferroelectric FET Device Heedam Shin, Ye Rim Shin, Boncheol Ku, and Changhwan Choi <i>Division of Materials Science and Engineering, Hanyang University</i>
TP1-175	Ferroelectricity of La-doped Hf_{0.5}Zr_{0.5}O₂ Films Yoogeun Han, Ju-Young Jeong, and Hyunchul Sohn <i>Department of Materials Science and Engineering, Yonsei University</i>
TP1-176	Effect of La on Dielectric Constant of ZrO₂ Films Deposited by Atomic Layer Deposition Ju-young Jeong, Yoogeun Han, and Hyunchul Sohn <i>Department of Materials Science and Engineering, Yonsei University</i>
TP1-177	Understanding the Role of Elements in Ge-Se System through Thin Film Analysis for Selector Device Application Young-Min Kim ^{1,2} , Subong Lee ^{1,2} , Deok-Jin Jeon ^{1,2} , and Jong-Souk Yeo ^{1,2} <i>¹School of Integrated Technology, College of Engineering, Yonsei University, ²Yonsei Institute of Convergence Technology, Yonsei University</i>
TP1-178	Indium-Gallium-Zinc-Oxide Thin Film Transistor Using Ta₂O₅ Gate Insulator Eun Seong Yu, Jae Geun Woo, Hyuck Su Lee, Seo Jin Kang, Chan Min Jeong, Min Seong Kim, Seoung Gyun Kim, Jong Mo Lee, and Byung Seong Bae <i>Department of Electronic Display Engineering, Hoseo University</i>
TP1-179	Density Functional Theory Study on the Surface Reaction of Aminosilane Precursors on an OH-terminated SiO₂ Surface Heeju Son ¹ , Khabib Khumaini ^{1,2} , Hyeonsu Roh ¹ , Hye-Lee Kim ¹ , and Won-Jun Lee ¹ <i>¹Department of Nanotechnology and Advanced Materials Engineering, Sejong University, ²Department of Chemistry, Univeritas Pertamina</i>
TP1-180	Evaluation of a Novel Niobium Precursor for Atomic Layer Deposition of Niobium Oxide Films Hayeong Kim ^{1,2} , Jiwon Park ^{2,3} , Seon-Jeong Maeng ¹ , Sun Young Baik ⁴ , Cha Young Yoo ⁴ , and Ju-Young Yun ^{1,2} <i>¹Vacuum Materials Measurement Team, KRISS, ²Division of Nano & Information Technology (Nanomaterials Science & Engineering), University of Science and Technology, ³Department of Advanced Materials Engineering, Daejeon University, ⁴EGTM Co., Ltd.</i>
TP1-181	Bilayer Oxide Synaptic TFT for Operating Synaptic Plasticity under 10 fJ Seong-In Cho, Jae Beom Jeon, and Sang-Hee Ko Park <i>KAIST</i>



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TP1-183	Highly Flexible Deep Ultraviolet Photodetectors Using Gallium Oxide Thin Films Grown by Atomic Layer Deposition Eun Seok Lee ^{1,2} , Heung-Yoon Choi ^{1,2} , Se Eun Kim ^{1,2} , Jae Deock Jeon ^{1,2} , and Sang Woon Lee ^{1,2} ¹ Department of Energy Systems Research, Ajou University, ² Department of Physics, Ajou University
TP1-184	Low Temperature Fabrication of TFT Using Indium-Rich α-IGZO and SU-8 Gate Insulator Jae Geun Woo, Chan Min Jeong, Eun Seong Yu, Hyuck Su Lee, Kim Min Seong, Seoung Gyun Kim, Jong Mo Lee, Seo Jin Kang, and Byung Seong Bae Department of Electronic Display Engineering, Hoseo University
TP1-185	The Effect of UV Exposure Time on SU-8 Gate Insulator in Oxide TFT Chan-Min Jeong, Jae Geun Woo, Eun Seong Yu, Seo Jin Kang, Hyuck Su Lee, Seoung Gyun Kim, Min Seong Kim, and Byung Seong Bae School of Electronics and Display Engineering, Hoseo University
TP1-186	Atomic Layer Deposition of Heterogeneously-Doped Tin Oxides and Their Electrical Properties Myeong-Jin Lee, Jiwon Oh, Do-Hyeong Kim, Won Seok Ku, Soo-In Cho, and Jin-Ha Hwang Department of Materials Science and Engineering, Hongik University
TP1-187	Study on the Electrical Performance Change and Application of Indium Oxide Thin Film Transistor to Switching Circuit by MoO₃ Doping Anvar Tukhtaev, Jae-Yun Lee, Berdiev Jonibek Elmurodovich, Isamaddinov Shukhrat, Zhao Han Lin, Wang Xiao Lin, Jin-Hee Lee, Yong-Hwan Kim, Fei-Shan, and Sung-Jin Kim College of Electrical and Computer Engineering, Chungbuk National University
TP1-188	Study on the Electrical and Surface Properties According to the Fabrication Method and Concentration of Ambipolar Oxide Semiconductor Transistor Jae-Yun Lee, Anvar Tukhtaev, Berdiev Jonibek Elmurodovich, Isamaddinov Shukhrat, Zhao Han Lin, Wang Xiao Lin, Jin-Hee Lee, Yong-Hwan Kim, Fei-Shan, and Sung-Jin Kim College of Electrical and Computer Engineering, Chungbuk National University



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E. Compound Semiconductors

심사위원: 장우진 박사(ETRI)

TP1-189	Operational Characteristics of Various Slant-Gate Based AlGaIn/GaN High Electron Mobility Transistors Jun-Ho Lee, Sang-Hoon Lee, Jung-Hoon Hwang, and Hyun-Seok Kim <i>Division of Electronics and Electrical Engineering, Dongguk University</i>
TP1-190	TCAD Simulation Study of Proton Irradiation-Induced Displacement Damage in GaN-Based Electronics Young Jun Yoon ¹ , Jae Sang Lee ¹ , Yujong Kim ¹ , Ogyun Seok ² , and Dong-Seok Kim ¹ <i>¹Korea Multi-Purpose Accelerator Complex, KAERI, ²School of Electronic Engineering, Kumoh National Institute of Technology</i>
TP1-191	First-principles Study of Electron-phonon Interaction in Copper Iodide Min Hyeok Kim and Byoung Don Kong <i>Department of Electrical Engineering, POSTECH</i>
TP1-192	Fabrication and Characteristics of 28 GHz Low Noise Amplifier Using a mHEMT Technology Jong-Min Lee, Woo-jin Chang, Byoung-Gue Min, and Dong Min Kang <i>RF/Power Components Research Section, ETRI</i>
TP1-193	GaN-on-GaN 웨이퍼를 이용하여 제조된 HEMTs 소자 및 에피 특성 평가 김정진, 김태현, 김현지, 차호영 <i>홍익대학교</i>
TP1-194	Evaluations of Deep-level Traps in InAlAs Buffer Layers of InP HEMTs Using Transient Current Analysis Sang Tae Lee ¹ , Hyunchul Jang ¹ , Chang-Hun Song ^{1,3} , Shinkeun Kim ¹ , Donghyun Kim ¹ , Jae-Phil Shim ¹ , Kiyong-Shin ² , Minwoo Kong ⁴ , Tae-woo Kim ² , and Chan-Soo Shin ¹ <i>¹KANC, ²School of Electronics Engineering, University of Ulsan, ³Department of Material Science and Engineering, Yonsei University, ⁴Seoul National University</i>
TP1-195	Effect of Multi-cap Structure on Tunneling Resistance in Non-alloyed Ohmic Contact of InP-Based HEMTs Hyunchul Jang ¹ , Sang Tae Lee ¹ , Jaephil Shim ¹ , Ki-Yong Shin ² , Chang-Hun Song ^{1,3} , Minwoo Kong ⁴ , Tae-Woo Kim ² , Keun Man Song ¹ , Shinkeun Kim ¹ , Donghyun Kim ¹ , Kyung-Ho Park ¹ , and Chan-Soo Shin ¹ <i>¹KANC, ²University of Ulsan, ³Yonsei University, ⁴Seoul National University</i>
TP1-196	Growth of n-InAs(111) Thin Films with Te-assisted Nanoscale ELOG Method Chang-Hun Song ^{1,2} , Minwoo Kong ^{2,3} , Hyunchul Jang ¹ , Sang Tae Lee ¹ , Hyeong-Ho Park ¹ , Chang Zoo Kim ¹ , Keun Man Song ¹ , Shinkeun Kim ¹ , Youngsu Choi ¹ , Dae-Hong Ko ² , and Chan-Soo Shin ¹ <i>¹KANC, ²Department of Material Science and Engineering, Yonsei University, ³Department of Electrical and Computer Engineering, Seoul National University</i>



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TP1-197	<p>Hot electron에 의한 0.13 μm 고주파 GaN HEMT의 열화현상 김승환¹, 민병규², 조규준², 이종민², 장유진², 강동민², 김형탁¹ ¹전자전기공학과, ²RF/전력부품연구실, 전자통신연구원</p>
TP1-198	<p>The Dielectric Function of an Anisotropic SnSe at Low Temperature Xuan Au Nguyen¹, Tae Jung Kim^{1,2}, Van Long Le³, Hoang Tung Nguyen³, and Young Dong Kim¹ ¹Department of Physics, Kyung Hee University, ²Center for Converging Humanities, Kyung Hee University, ³Institute of Materials Science, Vietnam Academy of Science and Technology</p>
TP1-199	<p>Electrical Properties of Ni/β-Ga₂O₃ Schottky Barrier Diodes with Intermediate p-NiO_x Layer Ji Young Min and You Seung Rim Department of Intelligent Mechatronics Engineering, and Convergence Engineering for Intelligent Drone, Sejong University</p>
TP1-200	<p>Si (001) 기판 위 III-V layer 전사 후 MOCVD 재성장 에 관한 연구 윤소연^{1,2}, 김호성², 한원석², 박민수¹ ¹Department of Electronics Engineering, Dong-A University, ²ETRI</p>
TP1-201	<p>β-Ga₂O₃ 기반 쇼트키배리어다이오드의 오믹 접합 특성 향상 연구 Won Jin Song and You Seung Rim Department of Intelligent Mechatronics Engineering, and Convergence Engineering for Intelligent Drone, Sejong University</p>
TP1-202	<p>Ferroelectric Gate AlGaIn/GaN HEMT for Reconfigurable RF Application Jeong Yong Yang, Min Jae Yeom, Jaeyong Lee, Changkun Park, and Geonwook Yoo Soongsil University</p>
TP1-203	<p>Crystalline/Polycrystalline HfO₂ Bilayer Gate Dielectric for AlGaIn/GaN MOS-HEMT Min Jae Yeom¹, Sang Hee Kim¹, Jong Yong Yang¹, Junseok Heo², and Geonwook Yoo¹ ¹Soonsil University, ²Ajou University</p>
TP1-204	<p>Proton Irradiation-Induced Performance Improvement in AlGaIn/GaN HEMTs Eunjin Kim¹, Jeong-Gil Kim¹, Dong-Seok Kim², and Jung-Hee Lee¹ ¹School of Electronic and Electrical Engineering, Kyungpook National University, ²KAERI</p>
TP1-205	<p>Growth of Rhin Barrier InAlGaIn/GaN Heterostructure and Its Excellent Device Performance. Seung-Hyeon Kang, Jeong-Gil Kim, Eun-Jin Kim, and Jung-Hee Lee School of Electronics Engineering, Kyungpook National University</p>



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TP1-206	Hybrid Schottky-Ohmic Drain β-Ga₂O₃ Field-Effect Transistors in Extended Thermal Annealing Condition Yeong Je Jeong, Chan Ho Lee, Min Jae Yeom, Jeong Yong Yang, and Geonwook Yoo <i>Soongsil University</i>
TP1-207	Importance of V_T Correction in the Extraction of Effective Mobility in In_{0.8}Ga_{0.2}As/In_{0.48}Al_{0.52}As QW HEMTs Wan-Soo Park, Ji-Hoon Yoo, Hyeon-Seok Jeong, Hyeon-Bhin Jo, In-Geun Lee, and Dae-Hyun Kim <i>School of Electronic and Electrical Engineering, Kyungpook National University</i>

F. Silicon and Group-IV Devices and Integration Technology

심사위원: 김명수 교수(UNIST), 박준영 교수(충북대학교)

TP1-208	Ni-Al alloy for Ohmic Contact Formation on n-type 4H-SiC Young Jae Park, Seongjun Kim, Min-Jae Kang, Min-Je Sung, Dong-Eun Kim, Ju Young Kwak, Sung Woong Han, Nam Suk Lee, and Hoon-Kyu Shin <i>National Institute for Nanomaterials Technology, POSTECH</i>
TP1-209	High Performance Plasmonic THz Detector with Additional Resistor Sang Hyo Ahn, Min Woo Ryu, Minjae Kim, and Kyung Rok Kim <i>Department of Electrical Engineering, UNIST</i>
TP1-210	Hot-Carrier Injection Parameter Modeling in TCAD for Accurate Gate Leakage Current Prediction Yoo Bin Song and Kyung Rok Kim <i>Department of Electrical Engineering, UNIST</i>
TP1-211	Design of Pass Diode-Based Low-Power Ternary Inverter Circuit Jae Hyeon Jun ¹ , Young Eun Choi ¹ , Woo-Seok Kim ¹ , Seung Woo Hong ¹ , Myoung Kim ¹ , Su Hyeon Jo ¹ , and Kyung Rok Kim ^{1,2} <i>¹Department of Electrical Engineering, UNIST, ²Terrell Corp.</i>
TP1-212	Ternary SRAM Using Tunneling-Based T-CMOS for Low Power Application Young-Eun Choi ¹ , Woo-Seok Kim ¹ , Jae Hyeon Jun ¹ , Seung Woo Hong ¹ , Myung Kim ¹ , Su Hyeon Jo ¹ , and Kyung Rok Kim ^{1,2} <i>¹Department of Electrical Engineering, UNIST, ²Terrell Corp.</i>
TP1-213	Highly-Scalable Ternary CMOS Technology in 28-nm Foundry Process Woo-Seok Kim ¹ , Young Eun Choi ¹ , Jae Hyeon Jun ¹ , Seung Woo Hong ¹ , Myoung Kim ¹ , Suhyeon Jo ¹ , and Kyung Rok Kim ^{1,2} <i>¹Department of Electrical Engineering, UNIST, ²Terrell Corp.</i>



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TP1-214	<p>Design of Novel Ternary Sense Amplifier for Low-Power Ternary SRAM Myoung Kim¹, Young Eun Choi¹, Woo-seok Kim¹, Jae Hyeon Jun¹, Seung Woo Hong¹, Su Hyeon Jo¹, and Kyung Rok Kim^{1,2} ¹Department of Electrical Engineering, UNIST, ²Temell Corp.</p>
TP1-215	<p>Band-to-Band Tunneling Analytical Model and Implications in Compact Modeling of Ternary CMOS Seung-Woo Hong¹, Young-Eun Choi¹, Woo-Seok Kim¹, Jae Hyeon Jun¹, Myoung Kim¹, Su Hyeon Jo¹, and Kyung Rok Kim^{1,2} ¹Department of Electrical Engineering, UNIST, ²Temell Corp.</p>
TP1-216	<p>Simulation of a Strained SiGe Optical Mach-Zehnder Modulator with a L Shaped Pn-junction in a Si Photonics Platform Youngjoo Bae, Tae Won Jin, Jaeung Jeong, and Younghyun Kim Department of Photonics and Nanoelectronics, BK21 FOUR ERICA-ACE Center, Hanyang University</p>
TP1-217	<p>Effects of Oxygen Plasma Treatment on Rapid-Thermal-Annealed HfO₂ Dielectric Characteristics Dongbin Kim and Byoungdeog Choi Department of Electrical and Computer Engineering, Sungkyunkwan University</p>
TP1-218	<p>Effect of Annealing Temperature on Trap Density and Off-current of Poly-Si TFT Youngrok Kim and Byoungdeog Choi Department of Electrical and Computer Engineering, Sungkyunkwan University</p>
TP1-219	<p>Performance Degradation with Tunneling Effect for a Feedback Field-effect Transistor Jong Hyeok Oh and Yun Seop Yu Department of ICT Robot Engineering, Hankyong National University</p>
TP1-220	<p>RF 송수신기 보호용 고전압 PIN Limiter 다이오드 원종일¹, 정동윤², 조두형², 권성규², 장현규², 박건식² ¹반도체소부장기술센터, ²ETRI DMC 연구단</p>
TP1-221	<p>Designing Microdisk-Based Optical Modulators with High Coupling Efficiency via Transformation Optics Jonghyung Lee, Honghwi Park, and Hongsik Park School of Electronics and Electrical Engineering, Kyungpook National University</p>
TP1-222	<p>모오스 구동 싸이리스터를 적용한 인체모델용 정전기방전 시험기 정동윤¹, 박건식¹, 김상인², 권성규¹, 장현규¹, 조두형¹, 원종일¹, 임종원¹ ¹ETRI, ²갑승파워시스템</p>



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TP1-223	<p>Application of Silicon Based High Temperature Field Effect Transistor in Complementary Metal-Oxide-Semiconductor Logic</p> <p>Yunjae Oh, Taewoong Jeong, Seoyeon Chun, Inyoung Lee, Hyojin Park, and Ilhwan Cho <i>Department of Electronic Engineering, Myongji University</i></p>
TP1-224	<p>고전압 mesa형 PIN 리미터 다이오드 항복전압 특성 연구</p> <p>권성규¹, 정동윤¹, 원종일², 조두형¹, 장현규¹, 박건식¹ <i>¹DMC 융합연구단, ETRI, ²반도체소부장기술센터, ETRI</i></p>
TP1-225	<p>Implementation of a Calcium-Based Plasticity Learning Model with Hybrid CMOS-Memristor Circuits</p> <p>Jae Gwang Lim^{1,2}, Dae Cheol Kang^{1,2}, Keonhee Kim^{1,2}, Yeonjoo Jeong¹, Jaewook Kim¹, Suyoun Lee¹, Joon Young Kwak¹, Jongkil Park¹, Gyu Weon Hwang¹, Kyeong-Seok Lee¹, Byeong-Kwon Ju², Inho Kim¹, and Jong Keuk Park¹ <i>¹Center for Neuromorphic Engineering, KIST, ²Display and Nanosystem Laboratory, School of Electrical Engineering, Korea University</i></p>
TP1-226	<p>TritCell™ Stability Enhancement by Subthreshold Swing based on T-CMOS Analytical Model</p> <p>Su Hyeon Jo¹, Young-Eun Choi¹, Woo-Seok Kim¹, Jae Hyeon Jun¹, Seung Woo Hong¹, Myoung Kim¹, and Kyung Rok Kim^{1,2} <i>¹Department of Electrical Engineering, UNIST, ²Ternell Corp.</i></p>
TP1-227	<p>ESD Characteristics Improvement of 7V GGMOS Device Through the Suppression of Hot Carrier Degradation</p> <p>Youngkwon Kim, Jongmin Kim, Youngchul Kim, Heeguk.Chae, and Joontae Jang <i>Technology Enabling Design Support Team, DB HiTek</i></p>
TP1-228	<p>Comparison of Batch-Normalization and Layer-Normalization for Hardware-based Binary Neural Network Implementation</p> <p>Hyeongsu Kim^{1,2} and Jong-Ho Lee^{1,2} <i>¹Department of Electrical and Computer Engineering, Seoul National University, ²Inter-university Semiconductor Research Center, Seoul National University</i></p>
TP1-229	<p>pTFET의 주된 저주파 잡음 메커니즘 연구</p> <p>Hyun-Jin Shin¹, Sunil Babu Eadi¹, Ji-Woon Yang², Jae-Woo Lee², Hyuk-Min Kwon³, and Hi-Deok Lee¹ <i>¹Department of Electronics Engineering, Chungnam National University, ²Department of Electronics & Information Engineering, Korea University, ³Department of Semiconductor Processing Equipment, Semiconductor Convergence Campus, Korea Polytechnics College</i></p>
TP1-230	<p>Integrate-and-Fire Neuron Circuit Simulation with 180-nm Technology for Si CMOS Spiking Neural Network</p> <p>Arati Kumari Shah, Seung Hyun Kim, and Seongjae Cho <i>Department of Electronic Engineering, Gachon University</i></p>
TP1-231	<p>Processing-in-Memory Architecture based on Low-Power Nonvolatile Memory and Its System-Level Evaluation</p> <p>Udaya Mohanan Kannan¹, Yeon-Joon Choi², Sibeom Kim¹, Seongjae Cho¹, and Byung-Gook Park² <i>¹Department of Electronic Engineering, Gachon University, ²Department of Electrical and Computer Engineering, Seoul National University</i></p>



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TP1-232	Improving the Resistive Switching Uniformity Ta₂O₅-Based Memristors with Single-layer and Bi-layer Structures Ki-Woo Song ¹ , Sunil Babu Eadi ¹ , Seong-Hyun Kim ¹ , Kim Thahn Nguyen ¹ , Hyuk-Min Kwon ² , and Hi-Deok Lee ¹ ¹ Department of Electronics Engineering, Chungnam National University, ² Department of Semiconductor Processing Equipment, Semiconductor Convergence Campus of Korea Polytechnic College
TP1-233	Design and Compact Modeling of Metal-Oxide Memristor and System-Level Evaluation for Its Application in Spiking Neural Network Hardware Saurabh Suredra Joshi, Arati Kumari Shah, Seung Hyun Kim, and Seongjae Cho Department of Electronic Engineering, Gachon University
TP1-234	Analysis of Trantenna Impedance Matching with Channel Area Min Jae Kim, Min Woo Ryu, Sang Hyo Ahn, and Kyung Rok Kim Department of Electrical Engineering, UNIST
TP1-235	Analysis of Polarization Gradient Effect on Negative Capacitance Tunnel Field-Effect Transistor (NC-TFET) Dongkeun Lee and Sangwan Kim Department of Electrical and Computer Engineering, Ajou University
TP1-236	Hybrid M3D CMOS 로직 구현 및 인터페이스 개발 Jong-Tack Kim and Byung-do Yang Department of Electronics Engineering, Chungbuk National University

G. Device & Process Modeling, Simulation and Reliability

심사위원: 서지웅 TL(SK하이닉스), 이재우 교수(고려대학교)

TP1-237	Vacuum Inner Spacer to Improve Power Efficiency of Nanosheet FETs during Electro-Thermal Annealing Dong-Hyun Wang and Jun-Young Park Chungbuk National University
TP1-238	A Simulation Study for Reducing Power Consumption during Using Punch-Through Current Annealing in Gate-All-Around MOSFETs Min-Gyeong Kim and Jun-Young Park Chungbuk National University
TP1-239	Reliable Artificial Synapse Using Multilevel HfO₂ RRAM for Neuromorphic Computing Applications Heebum Kang ¹ , Jinah Park ² , Do Kyung Lee ² , Hyun Wook Kim ^{1,2} , Eun Ryeong Hong ^{1,2} , Minjoon Ahn ² , Sol Jin ² , and Jiyong Woo ^{1,2} ¹ School of Electronic and Electrical Engineering, Kyungpook National University, ² School of Electronics Engineering, Kyungpook National University
TP1-240	Enhancement of Radiation Hardness by Adopting Metal-Interlayer-Semiconductor Source/Drain Contact Structure on Ge Based SRAM Cell Seong-Ji Min and Hyun-Yong Yu School of Electrical Engineering, Korea University



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TP1-241	<p>SPICE Modeling of Field Effect Transistor-Type Neuron Device with $\text{Al}_2\text{O}_3/\text{Si}_3\text{N}_4$ as a Gate Insulator Stack for Neuromorphic System</p> <p>Jeong-Hyun Kim, Min-Kyu Park, and Jong-Ho Lee <i>Department of ECE and ISRC, Seoul National University</i></p>
TP1-242	<p>Structural and Electrical Properties of Aggregated Charged Oxygen Vacancies in Rutile-Based TiO_{2-x} for Resistive Random Access Memory Device</p> <p>Tae Young Jeong^{1,2}, Kun Hee Ye^{1,2}, Seung Jae Yoon^{1,2}, Jihun Kim², Cheol Seong Hwang², and Jung-Hae Choi¹</p> <p>¹Electronic Materials Research Center, KIST, ²Department of Materials Science and Engineering and Inter-University Semiconductor Research Center, Seoul National University</p>
TP1-243	<p>High-Voltage FinFET with Superior DC/RF Performance Using Dual Material Gate and High-k Field Plate</p> <p>Kyoungwan Oh¹, Hyangwoo Kim², and Chang-Ki Baek^{1,2}</p> <p>¹Department of Electrical Engineering, POSTECH, ²Department of Convergence IT Engineering, POSTECH</p>
TP1-244	<p>MIM Capacitor의 Hafnium Oxide 두께에 따른 S-Parameter 변화</p> <p>Jung-Rae Park, Seong-Won Seo, Cheong-Ha Jung, and Gu-Sung Kim <i>Electronic Package Research Center</i></p>
TP1-245	<p>낮은 턴온 전압으로 인한 오픈 드레인 구조 LDMOS 소자의 ESD 불량 분석</p> <p>Youngbum Eom, Myoungchul Lim, Joungcheul Choi, Sangwook Nam, and DongKyun Sohn <i>R&D Center, SK Hynix</i></p>
TP1-246	<p>SCR기반 ESD 보호 소자의 전류 감내 특성 향상을 위한 구조 설계 방법 연구</p> <p>Myoungchul Lim, Youngbum Eom, Joungchul Choi, Sangwook Nam, and Donggyun Son <i>R&D Center, SK Hynix</i></p>
TP1-247	<p>The Influence of Annealing Temperature and Time on HfZrO Ferro-Capacitor</p> <p>Seunghee Jin¹, Dong Geun Park¹, Jungchun Kim¹, Donghyun Kim¹, Seain Bang¹, Min Jung Kim¹, Seoyeon Choi¹, Kiseok Heo¹, Jiyong Woo², Jeong Hun Kim³, Jong-Pil Im³, Seung Eon Moon³, and Jae Woo Lee¹</p> <p>¹Department of Electronics and Information Engineering, Korea University, ²School of Electronics Engineering, Kyungpook National University, ³ICT Creative Research Laboratory, ETRI</p>
TP1-248	<p>Surge Current Capability and Dynamic Characteristics of 1.2kV 4H-SiC MPS Diodes against Thermal Runaway</p> <p>Min Seok Jang, Jee Hun Jeong, Sang Woo Kim, and Ho Jun Lee <i>Pusan National University</i></p>
TP1-249	<p>Dependence between Polarization Switching Properties of Ferroelectric and Subthreshold Swing in NCFET</p> <p>Woori Ham¹, Sungmun Song¹, Gyuil Park², Wonwoo Kho², Hyunjoo Hwang², Jisoo Kim², Hyo-Bae Kim³, Ji-Hoon Ahn³, and Seung-Eon Ahn^{1,2}</p> <p>¹Department of Nano & Semiconductor Eng, Korea Polytechnic University, ²Department of IT · Semiconductor Convergence Eng, Korea Polytechnic University, ³Department of Material Science and Chemical Eng, Hanyang University</p>



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TP1-250	<p>Design of Capacitorless DRAM-based on Storage Layer Separated Using Separation Oxide and Polycrystalline Silicon</p> <p>Geon Uk Kim¹, Young Jun Yoon², Jae Hwa Seo³, Min Su Cho¹, Sang Ho Lee¹, Jin Park¹, Hee Dae An¹, So Ra Min¹, Jaewon Jang¹, Jin-Hyuk Bae¹, Sin-Hyung Lee¹, and In Man Kang¹</p> <p>¹Electronic and Electrical Engineering, Kyungpook National University, ²KAERI, ³KERI</p>
TP1-251	<p>Stack Channel Ternary TFT 의 모델 개발과 응용</p> <p>김기영, 김소영, 이용수, 황현준, 이병훈</p> <p>Department of Electrical Engineering, POSTECH</p>
TP1-252	<p>Finite Element Modelling of Elasto-Capillary Bending in NAND Flash Structure</p> <p>Seonghwan Choi¹, Minjae Hur², Jongwon Baek², Jiwoong Sue², and Myoung-Gyu Lee¹</p> <p>¹Seoul National University, ²SK Hynix</p>
TP1-254	<p>Analysis of Threshold Voltage Shift and Field-Effect Mobility Behavior of IGZO TFTs under Current Stress at Cryogenic Temperature</p> <p>Sangwon Lee, Jingyu Park, Ga Won Yang, Dong Myong Kim, Sung-Jin Choi, Jong-Ho Bae, Changwook Kim, and Dae Hwan Kim</p> <p>School of Electrical Engineering, Kookmin University</p>
TP1-255	<p>Substrate-Biasing Effect on the Operation of Multi-layer MoS₂ Field-Effect Transistors with h-BN Dielectric</p> <p>Jimin Park, Chang Seon Park, Jangyup Son, Won Jun Jung, Min Park, Dong Su Lee, and Dae-Young Jeon</p> <p>Institute of Advanced Composite Materials, KIST</p>
TP1-256	<p>Suppression of the Floating Body Effect of the Double-Gate Transistor with the Buried Oxide Engineering Method</p> <p>Jaemin Gil, Ju Sung Kim, and Woongkyu Lee</p> <p>Department of Electrical Engineering, Myongji University</p>
TP1-257	<p>ESD Damage Analysis of ESD PNP for Bi-Directional ESD Protection</p> <p>Youngsang Son, Euiyoun Hong, Youngchul Kim, Jwoon Lee, Jongmin.kim, and Joontae Jang</p> <p>Technology Enabling Design Support Team, DB HiTek</p>
TP1-258	<p>Analysis of Self-heating Effect considering Circuit Operation and Reliability</p> <p>Changhyun Yoo and Jongwook Jeon</p> <p>Department of Electrical and Electronics Engineering, Konkuk University</p>
TP1-259	<p>Multiphysics Modeling of Edge-defined Film-fed Growth for Ga₂O₃ Single Crystal</p> <p>Su-Min Lim^{1,2}, Nhat-Minh Phung^{1,3}, Minh-Tan Ha¹, Yun-Ji Shin¹, Young-Soo Lim², Si-Young Bae¹, and Seong-Min Jeong¹</p> <p>¹KICET, ²Pukyong National University, ³Changwon National University</p>



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TP1-260	Circuit Analysis of 3nm GAA mNS-FET Considering Interconnect RC Wonyeong Jang, Yeji Lee, Kyung-bae Kwon, and Jongwook Jeon <i>Department of Electrical and Electronic Engineering, Konkuk University</i>
TP1-261	Alpha Particle Effect according to the Presence or Absence of Bottom Oxide in 3 nm Process Multi-Nanosheet Field Effect Transistor Haesu An, Hyeonjung Shim, Changhyun Yoo, and Jongwook Jeon <i>Department of Electrical and Electronic Engineering, Konkuk University</i>
TP1-262	The Future of Mono-layer MoS2 Channel Transistor without Stacking Jihun Park, Minsung Kim, and Jongwook Jeon <i>Department of Electrical and Electronic Engineering, Konkuk University</i>
TP1-263	Phase-field Modeling of Thin Film Growth by Chemical Vapor Deposition Hwan Wook Lee and Yongwoo Kwon <i>Hongik University</i>
TP1-264	향복 전압과 온-상태 전압 강하의 트레이드-오프 특성 개선을 위한 초접합 구조의 Carrier Stored Trench Bipolar Transistor 최적화에 관한 연구 허윤영, 조창현, 강이구 <i>극동대학교 에너지 IT 공학과</i>
TP1-265	Schottky Diode 내장형 Power MOSFET 전기적 특성 분석 Chang Hyeon Jo, Jong Mun Choi, and Ey Goo Kang <i>Far East University</i>
TP1-266	Analysis of the Static Characteristics of 4H-SiC Schottky Barrier Diode, Junction Barrier Diode, and Merged PiN Diode Using TCAD Simulation 유다희, 정지훈, 왕태희, 이호준 <i>부산대학교 전기공학과</i>



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H. Display and Imaging Technologies

심사위원: 오누리 교수(한양대학교), 박동욱 교수(서울시립대학교)

TP1-267	<p>이중 포토다이오드를 이용한 다중 대역 CMOS Image Sensor</p> <p>HyunJoon Sung¹ and Yunkyung Kim^{1,2}</p> <p>¹Department of ICT Integrated Safe Ocean Smart Cities Engineering, Dong-A University, ²Department of Electronics Engineering, Dong-A University</p>
TP1-268	<p>High-Stability Scan Driver Circuit based on a-IGZO TFT for Depletion Mode</p> <p>Sung-Hyuck Ahn, Eun Kyo Jung, Yong-Hoo Hong, Sara Hong, Eunho Kim, Ye-Rim Jeong, Hwarim Im, and Yong-Sang Kim</p> <p>Department of Electrical and Computer Engineering, Sungkyunkwan University</p>
TP1-269	<p>Influence of Dopant Concentration in Flrpic-Doped Blue Phosphorescent Organic Light Emitting Diodes</p> <p>Giyeon Lee and Byoungdeog Choi</p> <p>Department of Electrical and Computer Engineering, Sungkyunkwan University</p>
TP1-270	<p>Leakage Current Characteristics of Photo-Sensitive Siloxane Insulator</p> <p>Chanhee Han and Byoungdeog Choi</p> <p>Department of Electrical and Computer Engineering, Sungkyunkwan University</p>
TP1-271	<p>Enhancement of Emission Uniformity of Inkjet-printed Polymer Light-emitting Diodes via Drop-spacing Controlled Hole-injection Layers as Emission-defining Layers</p> <p>Hyungsoo Yoon^{1,2}, Dahyun Kim^{1,2}, Sujin Jeong^{1,2}, Geonhee Kim^{1,2}, and Yongtaek Hong^{1,2}</p> <p>¹Department of Electrical and Computer Engineering, Seoul National University, ²Inter-University Semiconductor Research Center, Seoul National University</p>
TP1-272	<p>Al₂O₃ 보호막 층의 증착두께와 방법이 IGZO TFT 의 내방사선성에 미치는 영향에 관한 연구</p> <p>황성현¹, 야쯔기에¹, 이동호¹, 배강환¹, 박익준², 권혁인¹</p> <p>¹중앙대학교 전자전기공학과, ²중부대학교 전기전자공학과</p>
TP1-273	<p>Analysis of Energy Transfer Between Quantum Dots and Exciton Harvesting Layers in Quantum Dot Light-Emitting Diodes</p> <p>Ahyoung Hong, Jaeyoul Kim, and Jeonghun Kwak</p> <p>Department of Electrical and Computer Engineering, Inter-university Semiconductor Research Center, Seoul National University</p>
TP1-274	<p>Chiroptical Diketopyrrolopyrrole(DPP)-Based Organogelators for Circularly Polarized Light Detection</p> <p>Hanna Lee^{1,2}, Hyemi Han¹, Jeong Ho Cho², and Jung Ah Lim¹</p> <p>¹Center for Opto-Electronic Materials and Devices, KIST, ²Department of Chemical and Biomolecular Engineering, Yonsei University</p>



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TP1-275	Understanding the Charge Carrier Transport in MoS₂ Transistors with Graphene Electrodes Jisu Jang and Do Kyung Hwang <i>KIST</i>
TP1-276	Novel Circularly Polarized Light-Sensing Near-Infrared Organic Phototransistors based on Chiroptical Narrow Bandgap π-Conjugated Polymer Thin-Films Hyemi Han, Jongtae Ahn, Do Kyung Hwang, and Jung Ah Lim <i>Center for Optoelectronic Materials and Devices, Post-Silicon Semiconductor Institute, KIST</i>
TP1-277	High Performance Linear Polarization-Sensitive Photodetector with 2D MoTe₂/ReS₂Heterostructure Byoung-Soo Yu ^{1,2} , Jongtae Ahn ¹ , and Do Kyung Hwang ^{1,2} ¹ <i>Center of Optoelectronic Materials and Devices, Post-Silicon Semiconductor Institute, KIST,</i> ² <i>Division of Nano and Information, KIST School, University of Science and Technology</i>
TP1-278	Lithium Ion Based IGZO Synaptic Transistor for Highly Linear Weight Update Kang-Hwan Bae ¹ , Seung-Hyun Lim ¹ , Chaeseon Jeong ¹ , Geun Ho Lee ² , Sangwook Youn ² , Felix Sunjoo Kim ¹ , Hyungjin Kim ² , and Hyuck-In Kwon ¹ ¹ <i>Chung-Ang University,</i> ² <i>Inha University</i>
TP1-279	a-IGZO TFT-Based Pixel Circuit for High Resolution OLED Display Eunho Kim, Eun Kyo Jung, Yong-Hoo Hong, Sung-Hyuck Ahn, Sara Hong, Ye-Rim Jeong, Hwarim Im, and Yong-Sang Kim <i>Department of Electrical and Computer Engineering, Sungkyunkwan University</i>
TP1-280	Wireless Stand-alone Sensing Display by Direct Capacitive Coupling Jihye Jang, Seung Won Lee, and Cheolmin Park <i>Department of Materials Science and Engineering, Yonsei University</i>
TP1-281	Universal Relationship between PECVD SiO₂ Gate Insulator Film Properties and a-ITZO TFT Characteristics Jun Su Lee and Saeroonter Oh <i>Department of Electrical and Electronic Engineering, Hanyang University</i>
TP1-282	Device Design of InGaZnO Floating Gate Thin-film Transistors for Threshold Voltage Control at Short Channel Lengths Mingoo Kim ¹ , Kihwan Kim ¹ , Joon Seok Park ² , Jun Hyung Lim ² , and Saeroonter Oh ¹ ¹ <i>Department of Electrical and Electronic Engineering, Hanyang University,</i> ² <i>R&D Center, Samsung Display Inc.</i>
TP1-283	Dual Function of Complementary Circuit based on Ambipolar Type 2D Materials Tae Wook Kim ^{1,2} , Jongtae Ahn ¹ , Jisu Jang ¹ , Seungho Song ^{1,3} , Byoung-soo Yu ¹ , and Do Kyung Hwang ¹ ¹ <i>Center for Opto-electronic Materials and Devices, KIST,</i> ² <i>School of Electrical Engineering, Korea University,</i> ³ <i>Advanced Materials Science and Engineering, Sungkyunkwan University</i>



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TP1-284	All-optically and Spatio-temporally Modulated Indium Gallium Zinc Oxide Optoelectronic Artificial Synaptic Device with Neuromorphic Applications Seungho Song ^{1,3} , Tae Wook Kim ^{1,2} , Jisu Jang ¹ , Jongtae Ahn ¹ , Byoungsoo Yu ¹ , Yong-hoon Kim ² , and Do Kyung Hwang ¹ <i>¹KIST, ²School of Electrical Engineering, Korea University, ³Sungkyunkwan University</i>
TP1-285	Trade-off between Hole Injection Efficiency and Electron-hole Pair Balance with Organic Light Emitting Diodes Using Chlorinated Anode Moonsoo Kim and Byoungdeog Choi <i>Department of Electrical and Computer Engineering, Sungkyunkwan University</i>
TP1-286	Simulation of Conduction Mechanism of Insulating Buffer Layer for Organic Light Emitting Diodes Min Jun Kim ¹ , Min Jung Park ² , and Min-Su Park ¹ <i>¹Department of Electronics Engineering, Dong-A University, ²Department of ICT integrated ocean Smart-City Engineering, Dong-A University</i>
TP1-287	Development of High-k Gate Insulator Deposition Process for Next-generation Thin Film Transistor Using Atomic Layer Deposition Min Kyeong Nam ^{1,2} , Dong Hee Han ^{1,2} , Seungwoo Lee ^{1,2} , and Woojin Jeon ^{1,2} <i>¹Department of Advanced Materials Engineering for Information and Electronics, Kyung Hee University, ²Integrated Education Program for Frontier Science & Technology (BK21 Four), Kyung Hee University</i>
TP1-288	A Study on the Conductivity of Al-doped Zinc Oxide Electrodes by Atmospheric Plasma Treatment and Subsequent Deposition DongWoon Lee, Sang Yeon Park, Haechang Lee, Sang Jik Kwon, and Eou-Sik Cho <i>Department of Electronic Engineering, Gachon University</i>
TP1-289	Design of Multifunctional Platforms in Single Eu³⁺-activated Ba₂LaTaO₆ Phosphors for Potential Optical Applications Yongbin Hua and Jae Su Yu <i>Department of Electronics and Information Convergence Engineering, Kyung Hee University</i>
TP1-290	Influence of Channel Layer Thickness on the Electrical Characteristics and Stability of In-Ga-Sn-O TFTs Dae-Hwan Kim, Hyun-Seok Cha, Hwan-Seok Jeong, Kie Yatsu, Chae-Eun Oh, and Hyuck-In Kwon <i>School of Electrical and Electronics Engineering, Chung-Ang University</i>
TP1-291	Electrical Properties and Stability of High-Mobility IGTO TFTs Depending on Annealing Atmosphere Hwan-Seok Jeong, Hyun-Seok Cha, Dong-Ho Lee, and Hyuck-In Kwon <i>School of Electrical and Electronics Engineering, Chung-Ang University</i>
TP1-292	Conduction Band Edge Energy Profile Probed by Hall Offset Voltage in IGZO Thin Films Hyo-Jun Joo, Kie Yatsu, Dae-Hwan Kim, Hyun-Seok Cha, Su-Hyeon Lee, and Sang-Hun Song <i>School of Electrical and Electronics Engineering, Chung-Ang University</i>



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TP1-293	다중 카메라를 활용한 스티칭 하드웨어 설계 Chang Yong Lee, Jin Su Kang, and Yong Hwan Lee <i>Kumoh National Institute of Technology</i>
TP1-294	Monolithic Integration of Photosensitive Inverters based on Fully Formed MOSFET Drivers and Multi-Layered MoS₂ Depletion Loads Seung Gi Seo, Hyunbin Cho, Jun Hui Cho, and Sung Hun Jin <i>Department of Electronic Engineering, Incheon National University</i>
TP1-295	Bottom-Emitting Nanowire LEDs Fabricated with Nanoscale Aluminum Core-shell Reflector Sung-Un Kim ^{1,2} and Yong-Ho Ra ³ ¹ Hanyang University, ² Korea Institute of Ceramic Engineering & Technology, ³ Jeonbuk National University
TP1-296	Geometrical Calibration for Multispectral Camera Giho Sung, Kyungwon Min, Haengseon Son, and Seonyoung Lee <i>Mobility Platform Research Center, KETI</i>
TP1-297	Real-time Color Histogram Equalization Using Digital Circuit in FPGA Ji-Heon Lee, Min Hyung Kang, and Young Kyu Hong <i>KETI</i>

I. MEMS & Sensor Systems

심사위원: 정예환 교수(한양대학교), 서민호 교수(부산대학교)

TP1-298	Highly Sensitive Pressure Sensor that Can Decouple Strain and Bending Force Wooseok Kim, Heekyu Lee, Janghoon Joo, and Sang Min Won <i>Department of Electrical and Computer Engineering, Sungkyunkwan University</i>
TP1-299	Transient Sensors based on Natural Silk Jeong Woo Chae ¹ , Dong geun Lee ² , Wi hyeong Lee ² , and Sang Min Won ¹ ¹ Sungkyunkwan University, ² Konkuk University
TP1-300	Fabrication of Dual-Annular-Array Capacitive Micro-Machined Ultrasonic Transducer Using Double Oxidation for 3D Volumetric Ultrasound Imaging Young Seok Kwon ^{1,2} , Hae Youn Kim ^{1,3} , Dong-Hyun Kang ⁴ , Jae-Woong Jeong ² , and Byung Chul Lee ¹ ¹ Creative Research Center for Brain Science, KIST, ² School of Electrical Engineering, KAIST, ³ Department of Electrical and Electronic Engineering, Yonsei University, ⁴ Micro-Nano Fabrication Center, KIST



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TP1-301	Soft, Wireless Micro-Heater for Sensor Application Jonam Cho and Gunchul Shin <i>School of Materials Science and Engineering, University of Ulsan</i>
TP1-302	Plasma Density Measurement with Reflected Power Measurement Yeon-Soo Park, Gi-Won Shin, Woo-Jae Kim, Hee-Tae Kwon, Sun-Hee Lee, Ji-Hwan Kim, In-Young Bang, and Gi-Chung Kwon <i>Electrical and Biological Physics, Kwangwoon University</i>
TP1-303	Demonstration of Adaptable Artificial Nerve Using 2Memristor-1Capacitor Structure Sung Keun Shim, Yoon Ho Jang, and Cheol Seong Hwang <i>Department of Materials Science and Engineering and Inter-University Semiconductor Research Center, Seoul National University</i>
TP1-304	Suppression of Cross-talk Effect in Ferroelectric Thin-film-Based Row-column Actuators Array Jin Soo Park ^{1,2} , Soo Young Jung ^{3,4} , Seung-Hyub Baek ³ , Tae Geun Kim ² , Jung Ho Park ² , and Byung Chul Lee ¹ <i>¹Creative Research Center for Brain Science, KIST, ²Department of Electrical Engineering, Korea University, ³Center for Electronic Materials, KIST, ⁴Department of Material Science and Engineering, Seoul National University</i>
TP1-305	Response Analysis of Resistor-type Gas Sensor with Read Bias Condition Kangwook Choi ^{1,2} , Gyuweon Jung ^{1,2} , Seongbin Hong ^{1,2} , Yujeong Jeong ^{1,2} , Wonjun Shin ^{1,2} , Jinwoo Park ^{1,2} , Donghee Kim ^{1,2} , Jong-Ho Bae ³ , Byung-Gook Park ^{1,2} , and Jong-Ho Lee ^{1,2} <i>¹Department of Electrical and Computer Engineering, Seoul National University, ²Inter-university Semiconductor Research Center, Seoul National University, ³Department of Electrical Engineering, Kookmin University</i>
TP1-306	Predictive TCAD Approach for Air Burst Test Jaehyun kim ¹ , Jongmin kim ¹ , Minhyun Jung ² , Youngchul Kim ¹ , and Joontae Jang ¹ <i>¹Technology Enabling Design Support Team, DB HiTek, ²MEMS Team, DB HiTek</i>
TP1-307	Effects of Annealing Temperature on Stability of FET-type Gas Sensor Jinwoo Park ^{1,2} , Seongbin Hong ^{1,2} , Yujeong Jeong ^{1,2} , Gyuweon Jung ^{1,2} , Wonjun Shin ^{1,2} , Donghee Kim ^{1,2} , Chayoung Lee ^{1,2} , and Jong-Ho Lee ^{1,2} <i>¹Department of Electrical and Computer Engineering, Seoul National University, ²Inter-University Semiconductor Research Center (ISRC), Seoul National University</i>
TP1-308	Microfabrication of a Fractal Resistive Thermometer for Thermal Characteristics of a Capacitive Micromachined Ultrasonic Transducer Jung Min Lee ^{1,2} , Jin Soo Park ^{2,3} , Woo Sung Park ¹ , and Byung Chul Lee ² <i>¹Department of Mechanical Systems Engineering, Sookmyung Women's University, ²Creative Research Center for Brain Science, KIST, ³Department of Electrical Engineering, Korea University</i>
TP1-309	바이오 센서를 위한 플렉서블 유기 박막 트랜지스터 어레이 개발 Kyung-Min Kim and Dong-Wook Park <i>School of Electrical and Computer Engineering, University of Seoul</i>



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TP1-310	<p>Fabrication of a Pb(Mg_{1/3},Nb_{2/3})O₃-Pb(Zr,Ti)O₃ (PMN-PZT) Thin-film Based Micro-dispenser</p> <p>Jungmin Lee^{1,2}, Jin Soo Park^{1,3}, Soo Young Jung^{4,5}, Seung-Hyub Baek⁴, and Byung Chul Lee¹</p> <p>¹Creative Research Center for Brain Science, KIST, ²Department of Advanced Materials Engineering for Information and Electronics, Kyung Hee University, ³Department of Electrical Engineering, Korea University, ⁴Center for Electronic Materials, KIST, ⁵Department of Material Science and Engineering, Seoul National University</p>
TP1-311	<p>Mechanically Enhanced 2D Capacitive Micromachined Ultrasonic Transducer Array Using SOG Trench-Insulation Technique</p> <p>Hae Youn Kim^{1,3}, Dong-Hyun Kang², Si Yeon Noh⁴, Shinyong Shim¹, Srikant Vainthilingam⁵, Jung Woo Choi⁵, Anshuman Bhuyan⁵, Butrus T. Khuri-Yakub⁵, Jungmok Seo³, and Byung Chul Lee¹</p> <p>¹Brain Science Institute, KIST, ²Micro-nano Fabrication Center, KIST, ³Electrical and Electronic Engineering, Yonsei University, ⁴Department of Electronic Engineering, Hanyang University, ⁵Electrical Engineering, Stanford University</p>
TP1-312	<p>새도 마스크를 활용한 실리콘 나노와이어 기반 MEMS 센서 전극형성방법</p> <p>김태엽^{1,2}, 이민재^{1,2}, 박정현^{1,2}, 조동일^{1,2}</p> <p>¹서울대학교 전기정보공학부, 자동화시스템공동연구소, ²서울대학교 반도체공동연구소</p>
TP1-313	<p>DC and AC Sensing Characteristics of a Si-nanowire BioFET for Urea Detection</p> <p>Jiwon Park¹, Donghoon Kim¹, Wonyeong Choi¹, Seonghwan Shin¹, Kihyun Kim^{2,3}, and Jeong-Soo Lee¹</p> <p>¹Department of Electrical Engineering, POSTECH, ²Division of Electronics Engineering, Jeonbuk National University, ³Future Semiconductor Convergence Technology Research Center, Jeonbuk National University</p>
TP1-314	<p>Detection of Surface Charge Difference of Microparticles using Dielectrophoresis based Technique</p> <p>Kang In Yeo¹, Gyeong Jun Min¹, and Sang Woo Lee¹</p> <p>Department of Biomedical Engineering, Yonsei University</p>
TP1-315	<p>Thickness Measurement of Highly Strained InGaAs/AlInAs Quantum Wells for Mid-wavelength Infrared Sensing Applications</p> <p>Sooseok Kang, Jongmin Kim, Youngsu Choi, Sang Tae Lee, Hyunchul Jang, Shinkeun Kim, Chan-Soo Shin, and Dong-Hwan Jun</p> <p>KANC</p>
TP1-316	<p>Miniaturized, Wireless, and In-ear Pulse Oximetry Sensor System</p> <p>Ah yeon Choi¹, Sung-Gu Kang², Joon-Woo Kim², and Jeonghyun Kim²</p> <p>¹Department of electric engineering, Kwangwoon University, ²Department of electronic Convergence Engineering, Kwangwoon University</p>
TP1-317	<p>Flexible Assembly-type Wireless Communication System for On-demand Sensor system</p> <p>Joon-Woo Kim, Sung-Gu Kang, Ah Yeon Choi, and Jeonghyun Kim</p> <p>Department of Electronics Convergence Engineering, Kwangwoon University</p>



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TP1-318	<p>Battery-less, Wireless, and Wearable Activity Measuring Device and Analysis System Yu-Jin Ahn, Jae-Ha Lee, Tae-Hyung Kim, Jun-Hee Lee, Joon-Woo Kim, and Jeonghyun Kim <i>Department of Electronics Convergence Engineering, Kwangwoon University</i></p>
TP1-319	<p>Capacitor-Based Gas Sensor with a ZnO Sensing Layer Seongbin Hong^{1,3}, Yujeong Jeong^{1,3}, Gyuweon Jung^{1,3}, Wonjun Shin^{1,3}, Jinwoo Park^{1,3}, Donghee Kim^{1,3}, Chayoung Lee^{1,3}, Kangwook Choi^{1,3}, Jun Shik Kim^{2,3}, Cheol Seong Hwang^{2,3}, and Jong-Ho Lee^{1,3} ¹Department of Electrical and Computer Engineering, Seoul National University, ²Department of Materials Science and Engineering, Seoul National University, ³Inter-university Semiconductor Research Center, Seoul National University</p>
TP1-320	<p>Variable Membrane Dielectric Polarization Property in Individual Live Cells Kang In Yeo¹, Insu Park^{1,2}, and Sang Woo Lee¹ ¹Department of Biomedical Engineering, Yonsei University, ²Micro and Nanotechnology Laboratory, University of Illinois</p>
TP1-321	<p>패치 안테나 파지에 따른 캐패시턴스 변화 측정 HyunWoo Son, Jiwon Kim, Jeon-Ung Yoo, Dong-gu Im, Hae-Won Son, and Jung-Mu Kim <i>Division of electronics and information Engineering, Jeonbuk National University</i></p>
TP1-322	<p>역오팔 형태의 MOF 구조체 제작 방법 김상훈¹, 김시혁², 이기근², 윤광석¹ ¹서강대학교 전자공학과, ²아주대학교 전자공학과</p>
TP1-323	<p>Total Organic Carbon Analysis Chip based on Photocatalyst Seung Deok Kim, Maeum Han, Soon Yeol Kwon, Jae Yong Lee, June Soo Kim, Hyun Seo Lee, Hyun Jun Kim, Da Ye Kim, and Seong Ho Kong <i>School of Electronic and Electrical Engineering, Kyungpook National University</i></p>
TP1-324	<p>Flexible and Stretchable sEMG Sensor for Amputee Jaeu Park, JinWoong Jeong, Seohyeon Lee, and Sanghoon Lee <i>Department of Robotics Engineering, DGIST</i></p>



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S. Chip Design Contest

심사위원: 고희호 교수(충남대학교), 양병도 교수(충북대학교), 이승은 교수(서울과학기술대학교),
신창환 교수(성균관대학교), 차혁규 교수(서울과학기술대학교)

TP1-325	A Fast and Efficient 3D Point Cloud-Based Neural Network Processor with Block-Based Point Processing for Regular DRAM Access Sangjin Kim, Juhyoung Lee, Dongseok Im, and Hoi-Jun Yoo <i>KAIST</i>
TP1-326	An Energy-efficient Hybrid Precision Deep Learning Processor with Outlier-aware Group Splitting Zhiyong Li, Dongseok Im, Jinsu Lee, and Hoi-Jun Yoo <i>KAIST</i>
TP1-327	Spike Sorting Processor Using Autoencoder Changyu Seong and Dongseok Jeon <i>Seoul National University</i>
TP1-328	A Trainable Neural Network Accelerator with Low Precision Number System Sunwoo Lee and Dongseok Jeon <i>Seoul National University</i>
TP1-329	An Ultra-Low-Jitter and Low Fractional Spur Fractional-N Subsampling PLL Using a Voltage-Domain Quantization-Error Cancellation Technique Juyeop Kim, Yongwoo Jo, Hangi Park, and Jaehyoun Choi <i>KAIST</i>
TP1-330	A 365fs_{rms} Jitter and -63dBc-Fractional Spur, 5.3GHz-Ring-DCO-Based Fractional-N DPLL Using a Probability Density Shaping $\Delta\Sigma$ Hangi Park, Chanwoong Hwang, Taeho Seong, and Jaehyoun Choi <i>KAIST</i>
TP1-331	A Low-Power Low-Noise Neural Recording Amplifier for ECoG Applications Jin-Young Son ^{1,2} , Donghoon Choi ² , and Hyouk-Kyu Cha ² ¹ Qualitas Semiconductor, ² Seoul National University of Science and Technology
TP1-332	270-GHz Lens-Antenna Feed-Detector Using 250-nm InP HBT Technology J. S. Kim, K. M. Lee, and M. Kim <i>School of Electrical Engineering, Korea University</i>



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TP1-333	A 0.57-pJ/Bit 18Gb/s/Pin Single-Ended PAM-4 Transceiver in 28nm CMOS with LIQ-Based 1-Tap Decision Feedback Equalizer Soyeon Park and Jintae Kim <i>Konkuk University</i>
TP1-334	Decibel-Linear Automatic Gain Control with Exponential Type VGA Dong-Han Ki, Yu-Rin Jin, Yeon-ho Seo, Sung-Mi Kim, and Seong-Ik Cho <i>Department of Electronic Engineering, Chonbuk National University</i>
TP1-335	Time-Interleaved Duobinary Transceiver for Low Power 3D I/O Jiyoung Kim, Taeryeong Kim, Jeonghyeok You, Sunghwan Joo, Jongha Park, Sumin Lee, Injun Jung, and Seong-Ook Jung <i>School of Electrical Engineering, Yonsei University</i>
TP1-336	A 57GHz 2-Stage Power Amplifier in Samsung 28nm CMOS In Cheol Yoo, Dong Ouk Cho, and Chul Woo Byeon <i>Department of Electronic Engineering, Wonkwang University</i>
TP1-337	Data Aware 12T SRAM Cell for Computing-in-Memory(CIM) Young Kyu Lee, Dong Han Ko, Sehee Lim, Seokhee Cho, Minjune Yeo, Hong Keun Ahn, Keonhee Cho, and Seong-Ook Jung <i>School of Electrical Engineering, Yonsei University</i>
TP1-338	An 88.9 dB Fully-Dynamic Noise-Shaping SAR Capacitance-to-Digital Converter Chaegang Lim and Chulwoo Kim <i>Korea University</i>
TP1-339	A 1-THz Triple-push Oscillator based on 250 -nm InP HBT Technology Heekang Son and Jae-Sung Rieh <i>School of Electrical Engineering, Korea University</i>
TP1-340	Single – Ended 12b 17MS/s SAR-ADC with Comparator Kickback Noise Reduction for Analog-CNN Jung Yeon Lee, Malik-Summair Asghar, and Hyung Won Kim <i>Department of Electronic Engineering, Chungbuk National University</i>
TP1-341	CNN Accelerator with Minimal On-Chip Memory based on Hierarchical Array Hyun Wook Son, Ali Abdel Hamid, Yong Seok Na, Dong Young Lee, and Hyung Won Kim <i>Mixed Signal Integrated System Lab, Chungbuk National University</i>



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TP1-342	250 nm InP 공정을 이용한 증폭기가 결합된 H-대역 주파수 3 체배기 집적회로 설계 김형은, 장영민, 전영채, 정진호 <i>서강대학교 전자공학과</i>
TP1-343	Design of ASK RF Transceiver for ETCs with Hybrid ASK Modulator and Ultra Low Power Wake-up Receiver Hyoung-Jun Na, Tae-Seob Oh, Sang-Hee Yun, Jae-Bin Kim, Jong-Wan Jo, and, and Kang-Yoon Lee <i>Department of Electrical and Computer Engineering, Sungkyunkwan University</i>
TP1-344	Low-Power True Random Number Generator based on Silicon Nanowire Hyeong-Jin Yoo, Un-Shi An, Ye-Dam Kim, and Seung-Tak Ryu <i>KAIST</i>
TP1-345	Wide Input Range Wireless Ambient Power Receiver for Simultaneous Wireless Information and Power Transfer and Multi Energy Harvesting Systems Kee-Hoon Yang, Tae-Seob Oh, Sang-Hee Yun, Jae-Bin Kim, Jong-Wan Jo, and Kang-Yoon Lee <i>Department of Electrical and Computer Engineering, Sungkyunkwan University</i>
TP1-346	압축 센싱 복원을 위한 최소 제곱 솔버 구조 홍승우, 이영주 <i>포항공과대학교 전자전기공학과</i>
TP1-347	A 0.6-V 4 MS/s 2 bit/cycle Low Noise Asynchronous SAR ADC with VCO-Based Time Domain Comparator Sang-Hun Lee and Won-Young Lee <i>Seoul National University of Science and Technology</i>
TP1-348	A 2×2 CMOS Detector Array for Real-Time Terahertz Imaging System Ha-Neul Lee and Jong-Ryul Yang <i>Yeungnam University</i>
TP1-349	A Single-Ended Voltage-Mode Impedance Asymmetric Driver with 2-tap FFE in 28-nm CMOS Hyuntae Kim, Hyungmin Seo, and Jaeduk Han <i>Department of Electronic Engineering, Hanyang University</i>
TP1-350	A Cyclic Vernier-Based Dynamic Element Matching Time-to-Digital Converter In 180 nm CMOS Van-Nhan Nguyen and Jong-Wook Lee <i>Department of Electronic Engineering, Kyung Hee University</i>



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TP1-351	A 6 Gb/s Transceiver Design with Phase-Difference Modulation Signaling for Multi-drop DRAM Interface Changyoon Han, Sooeun Lee, Jaeyoung Seo, and Byungsub Kim <i>Department of Electrical Engineering, POSTECH</i>
TP1-352	Design of W-band Single-ended LNA using 65-nm CMOS Technology Dong Yeol Yang, Jae Hyun Park, Jun Pyo Lee, and Byung Sung Kim <i>Sungkyunkwan University</i>
TP1-353	Design of 94 GHz Receiver Using 65-nm CMOS Technology Jae Hyun Park, Se Jun Park, Seung Yeon Kim, and Byung Sung Kim <i>Sungkyunkwan University</i>
TP1-354	Dual Change-Sensing-based Ultra-Low Power Flip-Flops Jun Young Park, Suhyeon Lee, Minkyu Song, and Soo Youn Kim <i>Department of Semiconductor Science, Dongguk University</i>
TP1-355	900MHz 대역의 N-path 필터를 이용한 Wake-up 수신기 강민교 ¹ , 이윤기 ¹ , 김영식 ² <i>¹한동대학교 정보통신공학과, ²한동대학교 전산전자공학부</i>
TP1-356	Analysis of Chaotic True Random Number Generator Using 0.18um CMOS Process Yechan Jung ¹ , Chamindra Jayawickra ¹ , AlaaDdin Al-Shidaifat ¹ , Songwook Lee ¹ , Nihan Kahrama ² , and Hanjung Song ^{1,3} <i>¹Department of Nanosciences and Engineering, Inje University, ²Department of Electronic and Communication Engineering, Yildiz Technical University, ³Center for Nano Manufacturing, Inje University</i>
TP1-357	Low-Voltage MPPT Interface for DC-type Energy Harvesting Sources Hyeon-Jung Kim and Chong-Gun Yu <i>Department of Electronics Engineering, Incheon National University</i>
TP1-358	Spread Spectrum Clock Generator with Dual-Tone Hershey-Kiss Modulation Profile Seong-ho Kim, Hyun-in Kim, and Jin-Ku Kang <i>Department of Electrical and Computer Engineering, Inha University</i>
TP1-359	Successive Approximation Adaptive Threshold Voltage Control Block for PAM-4 Receiver Bong-Kyu Kim, Hwan-Ung Kim, and Jin-Ku Kang <i>Department of Electrical and Computer Engineering, Inha University</i>



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TP1-360	64bit RISC-V 기반 칩 검증 플랫폼 설계 변영훈, 이영주 <i>포항공과대학교 전자전기공학과</i>
TP1-361	A 0.61-pJ/bit and 6-Gb/s Receiver for MIPI D-PHY Standard v1.1 Woojung Kim ¹ , Jiwoon Do ² , Myunghee Lee ² , and Jae Joon Kim ¹ <i>¹Department of Electrical Engineering, UNIST, ²Sapien Semiconductors Inc.</i>
TP1-362	CAN 버스 내부 공격 대처 기법 Ji-Woong Choi and Seong-Soo Lee <i>Electronic Engineering, Soongsil University</i>
TP1-363	A 140-GHz Frequency Doubler Integrated with a Driving Amplifier based on 65-nm CMOS Junghwan Yoo and Jae-Sung Rieh <i>School of Electrical Engineering, Korea University</i>
TP1-364	1GHz Sub-Sampling Phase Locked Loop Using Binary Searching Frequency Algorithm for Wide Locking Range Jongchan An and Junyoung Song <i>Department of Electronics Engineering, Incheon National University</i>
TP1-365	A Broadband Transmitter for Miniaturized Complex Impedance Spectroscopy IC Sukju Yun and Kuduck Kwon <i>Department of Electronic Engineering, Kangwon National University</i>
TP1-366	A Balun-LNTA Employing Q-Enhanced LC Notch Filter for Advanced Cellular Applications Donggu Lee and Kuduck Kwon <i>Department of Electronic Engineering, Kangwon National University</i>
TP1-367	A 2.4-GHz Low-Power Current-Reused Low-Noise Amplifier for IoT Applications Hyeonjun Kim and Kuduck Kwon <i>Department of Electronic Engineering, Kangwon National University</i>
TP1-368	V-band Asymmetric Core-Based Reflection Amplifier for Reconfigurable Metasurface Seongwoog Oh and Jungsuek Oh <i>Department of ECE and INMC, Seoul National University</i>



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TP1-369	A Duobinary Receiver for High-speed Interfaces Jae-Woo Park and Jung-Hoon Chun <i>Department of Electrical and Computer Engineering, Sungkyunkwan University</i>
TP1-370	Massive Media Communication System with Cyclic Redundancy Check of Accumulated Data Chang Yeop Han, Kwonneung Cho, Hyunwoo Oh, and Seung Eun Lee <i>Department of Electronic Engineering, Seoul National University of Science and Technology</i>
TP1-371	유동 변환비를 갖는 초 저전력 스위치 커패시터 DC-DC 변환기 양명규, Van-Thai Dang, 심용, 백광현 <i>중앙대학교</i>
TP1-372	위상 조절 샘플링 주파수 생성기를 이용한 레퍼런스 샘플링 기반의 Fractional-N 위상 동기 회로 Jae-Soub Han ¹ , Tae-Hyeok Eom ² , Kwang-Hyun Baek ¹ , and Yong Shim ¹ <i>¹Chung-Ang University, ²Samsung Electronics</i>
TP1-373	수렴 범위 평균 기법을 사용한 시간 기반의 최대전력지점 추적 DC-DC 변환기 Chung-Hee Jang, Van Thai Dang, Yong Shim, and Kwang-Hyun Baek <i>Chung-Ang University</i>
TP1-374	Current-Controlled Oscillator for Time-Based Quantization in Wide-Dynamic Range, Delta-Sigma Modulator Youngin Kim ¹ , Soon-Jae Kweon ^{1,2} , Injun Choi ¹ , Chongsoo Jung ¹ , Yoontae Jung ¹ , Jongyoon Choi ¹ , Sohmyung Ha ² , and Minkyu Je ¹ <i>¹Department of Electrical Engineering, KAIST, ²Electrical and Computer Engineering, New York University</i>
TP1-375	Performance Comparison of Monolithic Three-Dimensional (M3D) Nanoelectromechanical (NEM) Memory Switches Hyug Su Kwon and Woo Young Choi <i>Department of Electronic Engineering, Sogang University</i>
TP1-376	Nanoelectromechanical-Switch-Based Ternary Content-Addressable Memory (NEMTCAM) Jae Seong Lee and Woo Young Choi <i>Department of Electronic Engineering, Sogang University</i>
TP1-377	An On-Chip Cockcroft-Walton Switched-Capacitor Converter Using Split-Phase Control for Improved Soft-Charging with 9.72 Conversion Gain Jongmyeong Lee and Minkyu Je <i>KAIST</i>



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TP1-378	<p>E-band Transceiver Chip for Point-to-Point Communication in 65-nm RFCMOS Technology Trinh Van Son, Hyohyun Nam, Jeong-Moon Song, Tae-Wha Hong, and Jung-Dong Park <i>Division of Electronics and Electrical Engineering, Dongguk University</i></p>
TP1-379	<p>A 1.2V Low-Power Bio-Impedance Monitoring System with Wireless Network Yuri Kim, Chae-Eun Lee, Joon Young Lim, and Yoon-Kyu Song <i>Department of Nano Science and Technology, Graduate School of Convergence Science and Technology, Seoul National University</i></p>
TP1-380	<p>Multimodal Portable Functional Brain Imaging Chip Chanhyung Lee, Bumjun Koh, and Hyeon-Min Bae KAIST</p>
TP1-381	<p>A 246 GHz Transmitter for Sensing System in 65-nm RFCMOS Technology Trinh Van Son, Hyohyun Nam, Jeong-Moon Song, and Jung-Dong Park <i>Division of Electronics and Electrical Engineering, Dongguk University</i></p>
TP1-382	<p>A 280-GHz Receiver for Communication Application in 65-nm CMOS Technology Trinh Van Son, Hyohyun Nam, Jeong-Moon Song, and Jung-Dong Park <i>Division of Electronics and Electrical Engineering, Dongguk University</i></p>
TP1-383	<p>A 280-GHz Receiver for Communication Application in 130-nm SiGe Technology Trinh Van Son, Hyohyun Nam, Jeong-Moon Song, and Jung-Dong Park <i>Division of Electronics and Electrical Engineering, Dongguk University</i></p>
TP1-384	<p>Design of a 915MHz Wake-Up Receiver Using N-Path Filter Sung Min Jang¹, Min Gyo Kang¹, and Young Sik Kim² ¹<i>Department of Information and Communication Engineering, Handong Global University,</i> ²<i>School of Computer Science and Electrical Engineering, Handong Global University</i></p>
TP1-385	<p>단일 모드 작동 및 무 중단 출력 전류 전달 기능을 갖춘 96.6% 효율 연속 입력 전류 하이브리드 이중 경로 벅부스트 컨버터 신홍석, 제민규 한국과학기술원</p>
TP1-386	<p>Trust-Hub Benchmark 기반 하드웨어 백도어 IC칩 설계 Seon Bhin Kim and Dong Kyue Kim <i>Department of Electronic Engineering, Hanyang University</i></p>



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TP1-387	PQC 암호 및 NTRU 기반 시스템 구현 Seon Bhin Kim and Dong Kyue Kim <i>Department of Electronic Engineering, Hanyang University</i>
TP1-388	웨어러블 빛 치료 기기용 OLED 램프의 전류 구동을 위한 로드 전류 제어 방식의 직류-직류 전력변환 회로 조동희, 제민규 <i>한국과학기술원</i>
TP1-389	C-DAC 가변 샘플링 신호를 사용한 12-bit, 10-Msps SAR A/D 변환기 설계 심민수, 강민성, 오성광, 윤광섭 <i>인하대학교</i>
TP1-390	A Wideband Circulator Leakage Canceller for Retro-directive RF System Tan-Binh Ngo, Quang-Huy Do, and Sang-Woong Yoon <i>Department of Electronic Engineering, Kyung Hee University</i>
TP1-391	IQ Subsampling-Based Distance Measurement System Using Impulse Signals Hanseul Yi <i>School of Electrical and Electronics Engineering, Yonsei University</i>
TP1-392	65-nm CMOS 공정 기반 67-GHz 전압 제어 발진기 Wooyong Keum, Junghwan Yoo, and Jae-Sung Rieh <i>School of Electrical Engineering, Korea University</i>
TP1-393	6G 통신 시스템의 D-band 대역 140-GHz 전압 제어 발진기 민상기, 이재성 <i>고려대학교 전기전자공학과</i>
TP1-394	A V-band Frequency Tripler in 250-nm InP HBT Gihyun Lim and Jae-Sung Rieh <i>School of Electrical Engineering, Korea University</i>
TP1-395	28 nm CMOS 공정 기반 600 GHz 직접 이미징 검출기 설계 Minje Cho and Jae-Sung Rieh <i>Department of Electronic Engineering, Korea University</i>



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TP1-396	VCO 와 Counter 사용한 DCPWM CMOS 벅 변환기 설계 양흥렬, 양제이, 문철우, 윤광섭 <i>인하대학교</i>
TP1-397	A Dynamic Wide-Bandwidth Compensation for Non-Inverting Buck-Boost Converter Huan Nguyen and Wanyeong Jung <i>KAIST</i>
TP1-398	Digital LDO with Reference-less Adaptive CLK Generation and Bit-shifting Coarse-Fine-control Wooyoung Choi, Seung-Myeong Yu, Yunha Kang, and Junyoung Song <i>Department of Electronics Engineering, Incheon National University</i>
TP1-399	능동 EMI 필터 구동을 위한 전력관리회로 IC Sangyeong Jeong ^{1,2} , Jo Ji Won ² , and Jinguok Kim ^{1,2} <i>¹UNIST, ²EMcoretech Co.</i>
TP1-400	100Mbit/s QPSK Transceiver Design in 180nm CMOS Technology Jin-Woo Kim ^{1,2} , Tae-won Jung ² , Ho-sung Sung ² , and Joon-Yub Kim ¹ <i>¹Sejong University, ²Berex</i>
TP1-401	A Ka Band High Performance Vector Modulator with Miniaturized Coupler Jinhyun Kim and Jungsuek Oh <i>Department of ECE and INMC, Seoul National University</i>
TP1-402	A Wideband LNA Using Shunt Resistive Feedback and Series Inductive Peaking with Forward Body Biasing Uichan Park and Jungsuek Oh <i>Department of ECE and INMC, Seoul National University</i>
TP1-403	DC Block 스위칭을 통한 K / Ka 이중대역 저잡음증폭기 윤태영 ^{1,2} , 오정석 ^{1,2} <i>¹서울대학교 전기정보공학부, ²서울대학교 뉴미디어통신공동연구소</i>



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하이원 그랜드호텔(컨벤션타워), 로비 (5층)

[WP1] 포스터 세션 2

J. Nano-Science & Technology

심사위원: 이관형 교수(서울대학교), 왕건욱 교수(고려대학교)

WP1-001	<p>Comparative Study of SnSe₂ Exfoliation and the Photo-Thermal Current from the Products</p> <p>Sunghun Lee¹, Linh Truong¹, Myoung-Jae Lee², and Seung-Hyun Chun¹ ¹Department of Physics and Astronomy, Sejong University, ²Division of Nano and Energy Convergence Research Center, DGIST</p>
WP1-003	<p>Highly Sensitive Infrared Photodiode based on MoS₂/Graphene/p-Si Stack</p> <p>Woojin Park^{1,2}, Wondeok Seo¹, Seyoung Oh¹, Ojun Kwon^{1,2}, and Byungjin Cho^{1,2} ¹Department of Advanced Material Engineering, Chungbuk National University, ²Department of Urban, Energy, Environmental Engineering, Chungbuk National University</p>
WP1-004	<p>Organic Light-Emitting Transistors for Optoelectronic Neuromorphic Systems</p> <p>Dong-Yoon Kim, Kwan-Nyeong Kim, and Tae-Woo Lee Department of Materials Science and Engineering, Seoul National University</p>
WP1-005	<p>Electrical Correlations between Synaptic Parameters and Pattern Recognition Accuracy on Floating Gate IGZO Synaptic Transistor</p> <p>Ojun Kwon^{1,2} and Byungjin Cho^{1,2} ¹Department of Advanced Material Engineering, Chungbuk National University, ²Department of Urban, Energy, Environmental Engineering, Chungbuk National University</p>
WP1-006	<p>Capacitive-Coupled Ta₂O₅ Based Memristive Devices for Nonvolatile Memory Application</p> <p>Jehyeon Yang¹, Sanghyeon Choi¹, and Gunuk Wang^{1,2} ¹KU-KIST Graduate School of Converging Science and Technology, Korea University, ²Department of Integrative Energy Engineering, Korea University</p>
WP1-007	<p>Highly Efficient Double Gate Light Emitting Transistor based on Van Der Waals Hetero Structure</p> <p>June-Chul Shin¹, Junyoung Kwon², Yeon Ho Kim³, Chul-Ho Lee³, and Gwan-Hyoung Lee¹ ¹Department of Materials Science and Engineering, Seoul National University, ²Department of Materials Science and Engineering, Yonsei University, ³KU-KIST Graduate School of Converging Science and Technology, Korea University</p>
WP1-008	<p>Vertically Stacked hBN/QDs Monolayer/hBN Structured Transparent and Flexible WORM Memory Device</p> <p>Joo Song Lee, Jaehyeon Lee, and Dong Ick Son Institute of Advanced Composite Materials, KIST</p>



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WP1-009	Artificially Intelligent Photonic Synapse with Area Density-Tunable Perovskite Nanocones Kyuho Lee, Yeeun Kim, Yeonji Kim, and Cheolmin Park <i>Department of Materials Science and Engineering, Yonsei University</i>
WP1-010	High-Sensitivity Graphene Biosensor Using Surface Conductivity Change due to Mass Increase due to Material Adsorption Ji Hun Sim and Woo Jong Yu <i>Sungkyunkwan University</i>
WP1-011	Enhancing Long-Term Plasticity of Metal Halide Perovskite-Based Artificial Synapses with Ferroelectricity Dae-Han Kang ¹ , Hea-Lim Park ^{1,2} , Joo Sung Kim ¹ , In-Hyeok Park ³ , Jung-Min Heo ¹ , and Tae-Woo Lee ¹ ¹ <i>Department of Materials Science and Engineering, Seoul National University, </i> ² <i>Department of Materials Science and Engineering, Seoul National University of Science and Technology, </i> ³ <i>Graduate School of Analytical Science and Technology, Chungnam National University</i>
WP1-012	Stable Dispersion of Hexagonal Boron Nitride Nanosheets via Dual Functionalization with Pyrene-Tethered Poly(4-vinyl-pyridine) Sohee Kim, Hyeokjung Lee, and Cheolmin Park <i>Yonsei University</i>
WP1-013	Controlling Synaptic Properties in Ion-Gel Gated Organic Synaptic Transistors (IGOSTs) by Tailoring Backbone Coplanarity of Isoindigo-Based Polymers Chunghee Kim ¹ , Dae-Gyo Seo ¹ , Changduk Yang ² , and Tae-Woo Lee ¹ ¹ <i>Department of Materials Science and Engineering, Seoul National University, </i> ² <i>Department of Energy Engineering, UNIST</i>
WP1-014	Deformable Carbon Atomic Film-Based Etching Mask Jiwoo Kim and Gwan-Hyoung Lee <i>Department of Materials Science and Engineering, Seoul National University</i>
WP1-015	High-Quality, Layer-Controlled Transition Metal Dichalcogenides (TMDs) Using Physical Vapor Deposition Yeonjoon Jung, Jaewoong Joo, Hangyel Kim, Huije Ryu, Seong Chul Hong, Ji-Hwan Baek, and Gwan-Hyoung Lee <i>Department of Materials Science and Engineering, Seoul National University</i>
WP1-016	Wafer Scale MoS₂ Synthesis Using Humidity Controlled Metal Organic Chemical Vapor Deposition Hyun-geun Oh and Gwan-Hyoung Lee <i>Department of Materials Science and Engineering, Seoul National University</i>
WP1-017	Interlayer Interaction between MoO₃-graphene van der Waals Heterostructure and inducing Anisotropy to Graphene Hangyel Kim ¹ , Jong-Hun Kim ² , Jungcheol Kim ³ , Kwanghee Park ⁴ , Ji-Hwan Paek ¹ , June-Chul Shin ¹ , Sumnin Ryu ⁴ , Hyeonsik Cheong ³ , and Gwan-Hyoung Lee ¹ ¹ <i>Department of Material Science and Engineering, Seoul National University, </i> ² <i>Department of Material Science and Engineering, Yonsei University, </i> ³ <i>Department of Physics, Sogang University, </i> ⁴ <i>Department of Chemistry, POSTECH</i>



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WP1-018	Ultrathin Skin-attachable TiO_x Synaptic Array Integrated with an Organic Photodiode for Finger Gesture Recognition Haein Cho ¹ , In Ho Lee ² , Jingon Jang ¹ , Hanbee Lee ² , Sungjun Park ² , and Gunuk Wang ^{1,3} ¹ KU-KIST Graduate School of Converging Science and Technology, Korea University, ² Electrical and Computer Engineering, Ajou University, ³ Department of Integrative Energy Engineering, Korea University
WP1-019	Magneto-responsive Liquid Metal for 3D Pattern Encryption HoYeon Kim and Cheolmin Park Department of Materials Science and Engineering, Yonsei University
WP1-020	Development and Optimization of Cellulose Nanofiber Column Power Generator by Imitating Transpiration of Plant Jiyoon Youm ^{1,2} , Seng-Hwan Lee ³ , Inhee Cho ³ , Da-Woon Jeong ³ , Hyung-Ho Park ² , and Min-Su Kim ¹ ¹ Advanced Joining & Additive Manufacturing R&D Department, KITECH, ² Department of Materials Science and Engineering, Yonsei University, ³ Korea-Russia Innovation Center, KITECH
WP1-021	그래핀/n-well Si/p-Si 이중 접합 구조 기반의 고감도 광 검출기 김시현 ¹ , 권민규 ² , 유태진 ¹ , 황현준 ¹ , 이병훈 ¹ ¹ Department of Electrical Engineering, POSTECH, ² School of Materials Science and Engineering, GIST
WP1-022	Implantation Doping Profile에 따른 N-well Contact 그래핀 광검출기의 동작 메커니즘 및 반응 속도 향상에 관한 연구 권민규 ¹ , 김시현 ² , 유태진 ² , 황현준 ² , 이병훈 ² ¹ School of Materials Science and Engineering, GIST, ² Department of Electrical Engineering, POSTECH
WP1-023	Wafer-Scale Fabrication of the Inkjet-Printed Carbon Nanotube Field-Effect Transistor Arrays for High-Throughput Bioassay Minhye Shin ¹ , Soohyun Park ² , Yoonhee Lee ² , and Hongki Kang ¹ ¹ Department of Information and Communication Engineering, DGIST, ² Division of Electronics and Information System Research, DGIST
WP1-024	Graphene via Contact Architecture for Vertical Integration of 2D Devices Yongjun Shin ¹ , Junyoung Kwon ² , and Gwan-Hyoung Lee ¹ ¹ Department of Materials Science and Engineering, Seoul National University, ² Department of Materials Science and Engineering, Yonsei University
WP1-025	Efficient Light Trapping in Near-infrared Regime Using Nano-rod Arrays for High-speed CMOS-Based Single Photon Avalanche Diodes Dong Su Park and Byoung Don Kong Department of Electrical Engineering, POSTECH
WP1-026	Ferroelectric Hf_{0.5}Zr_{0.5}O Synaptic Barrister for Energy-efficient Convolution Neural Network Seonghoon Jang ¹ , Seonggil Ham ¹ , Jingon Jang ¹ , S. Choi ¹ , Youngin Goh ² , Sanghun Jeon ² , and Gunuk Wang ¹ ¹ KU-KIST Graduate School of Converging Science and Technology, Korea University, ² School of Electrical Engineering, KAIST



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WP1-027	Molecular Dynamic Simulation of Group IV Crystals and Alloy Oxidation Su Hyun Park and Byoung Don Kong <i>Department of Electrical Engineering, POSTECH</i>
WP1-028	P-N Junction-like Heterogeneous Interface of Turbostratic Mxenes Sung Gyeong Lee and Byoung Don Kong <i>Department of Electrical Engineering, POSTECH</i>
WP1-029	Interface Modulation for High Performance of MoS₂/p⁺-Si Junction Field-effect Transistors Yoonsok Kim, Taeyoung Kim, and Eun Kyu Kim <i>Department of Physics and Research Institute of Natural Science, Hanyang University</i>
WP1-030	Fabrication and Characterization of Three-terminal Vertical Molecular Transistor Takgyeong Jeon ¹ , Jaeho Shin ¹ , and Gunuk Wang ^{1,2} ¹ <i>KU-KIST Graduate School of Converging Science and Technology, Korea University,</i> ² <i>Department of Integrative Energy Engineering, Korea University</i>
WP1-031	Artificially Intelligent Ferroelectric Tactile Synapse Yeeun Kim, Kyuho Lee, and Cheolmin Park <i>Department of Materials Science and Engineering, Yonsei University</i>
WP1-032	Biologically Plausible Artificial Synaptic Array: Replicating Ebbinghaus' Memory Curve with Selective Attention Dong Gue Roe ¹ , Seongchan Kim ² , Yoon Young Choi ³ , Hwije Woo ² , Moon Sung Kang ⁴ , Young Jae Song ² , Jong-Hyun Ahn ¹ , Yoonmyung Lee ⁵ , and Jeong Ho Cho ³ ¹ <i>School of Electrical and Electronic Engineering, Yonsei University,</i> ² <i>SKKU Advanced Institute of Nanotechnology (SAINT), Sungkyunkwan University,</i> ³ <i>Department of Chemical and Biomolecular Engineering, Yonsei University,</i> ⁴ <i>Department of Chemical and Biomolecular Engineering, Institute of Emergent Materials, Sogang University,</i> ⁵ <i>Department of Electrical and Computer Engineering, Sungkyunkwan University</i>
WP1-033	Deterministic Multimodal Perturbation Enables Neuromorphic-Compatible Signal Multiplexing Ui Jin Kim ¹ , Dong Hae Ho ¹ , Yoon Young Choi ¹ , Yongsuk Choi ¹ , Dong Gue Roe ¹ , Yonghyun Albert Kwon ¹ , Seongchan Kim ² , Young Jin Choi ¹ , Yejin Heo ¹ , Sae Byeok Jo ² , Geun Yeol Bae ³ , Taeyoon Lee ¹ , and Jeong Ho Cho ¹ ¹ <i>Yonsei University,</i> ² <i>Sungkyunkwan University,</i> ³ <i>Korea Institute of Industrial Technology</i>
WP1-034	An Artificial Optoelectronic Synapse based on an Organic CuPc/p-6P Heterojunction Byeongchan Kim ¹ and Jin-Hong Park ^{1,2} ¹ <i>Department of Electrical and Computer Engineering, Sungkyunkwan University,</i> ² <i>SKKU Advanced Institute of Nanotechnology (SAINT), Sungkyunkwan University</i>
WP1-035	Appliance of Vertical Heterostructure of MoS₂ and Graphene in Biosensing Field Effect Transistor within Ultrahigh Controllability Yea Hyun Kim and Woo Jong Yu <i>Department of Electrical and Computer Engineering, Sungkyunkwan University</i>



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WP1-037	CVD-grown Graphene Oxidation Using KMnO_4/diluted H_2SO_4 Jinseok Choi ¹ , Ki-Sik Im ² , Yeo Jin Choi ¹ , Seung Mun Back ¹ , Chan Young Lee ¹ , Myung Hyun Song ¹ , Dohyeon Kim ¹ , and Sung Jin An ¹ ¹ Department of Advanced Materials Science and Engineering, Kumoh National Institute of Technology, ² Advanced Material Research Center, Kumoh National Institute of Technology
WP1-038	Crystallographic Dependence of Unidirectional Spin Hall Magnetoresistance in Epitaxial Cr/Fe Bilayer Thanh Huong Thi Nguyen ¹ , Van Quang Nguyen ² , Seyeop Jeong ² , Eunkang Park ² , Heechan Jang ² , Nyun Jong Lee ² , Soogil Lee ³ , Byong-Guk Park ³ , Sunglae Cho ² , Hyun-Woo Lee ⁴ , Jung-Il Hong ¹ , and Sanghoon Kim ² ¹ DGIST, ² University of Ulsan, ³ KAIST, ⁴ POSTECH
WP1-039	Modulation of Phase Transition Pathways in Vanadium Dioxide Nanobeams via Core-shell Heterostructure-enabled Stress Engineering Ki Hoon Shin ¹ , Ji Yong Bae ² , Su Yong Lee ³ , Docheon Ahn ³ , Jiung Cho ⁴ , Jongwon Yoon ⁵ , Woong-Ki Hong ² , and Jung Inn Sohn ¹ ¹ Division of Physics and Semiconductor Science, Dongguk University, ² Center for Scientific Instrumentation, KBSI, ³ Korea Beamline Research Division, Pohang Accelerator Laboratory, ⁴ Western Seoul Center, KBSI, ⁵ Jeonju Center, KBSI
WP1-040	Negative Differential Resistance Phenomenon Achieved via Potential Hill Derived from a Two-dimensional Ferroelectric Material Taeran Lee ¹ and Jin-Hong Park ^{2,3} ¹ Department of Physics, Sungkyunkwan University, ² Department of Electrical and Computer Engineering, Sungkyunkwan University, ³ SKKU Advanced Institute of Nanotechnology (SAINT), Sungkyunkwan University
WP1-041	Electrical Characterization of Oxide Semiconductor Connected to Hafnium Aluminum Oxide(HAO) Capacitance Dongyoung Lee and Jin Hong Park Department of Electrical and Computer Engineering, Sungkyunkwan University
WP1-042	High Performance Field-Effect Transistor based on Transition Metal Dichalcogenides Using a Doping Technique Jeong-Ick Cho and Jin-Hong Park Department of Electrical and Computer Engineering, Sungkyunkwan University
WP1-043	Assembly Molecule Buffer Layer 사용을 통한 ZnO ALD 박막 FET Array의 On/Off 비율 향상 Tae Hyeon Kim and Woo Jong Yu School of Electronic and Electrical Engineering, Sungkyunkwan University
WP1-044	High Performance Photodetector Manufactured by Photovoltaic Effect of MoS_2/WSe₂ Heterostructure Seong Hyun Kim and Woo Jong Yu Department of Electrical and Computer Engineering, Sungkyunkwan University
WP1-045	Growth of Amorphous BN by Controlling Growth Condition Using Chemical Vapor Deposition Do Kyeong Yun and Woo Jong Yu Department of Electrical and Computer Engineering, Sungkyunkwan University



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WP1-046	Observance of Random Telegraph Noise Signal in BP/ReS₂ Type-III Heterojunction Diodes Sooyeon Kim, Youkyung Seo, and Min-Kyu Joo <i>Department of Applied Physics, Sookmyung Women's University</i>
WP1-047	Low-Dielectric Constant of Amorphous Boron Nitride Film Minsu Kim, Hyeongjoon Kim, Kyung Yeol Ma, and Hyeon Suk Shin <i>Department of Chemistry, UNIST</i>
WP1-048	Generating Voltage Spike Array according to Optical Signal based on Graphene/Silicon Photodetector Sung Bum Park and Woo Jong Yu <i>Department of Electrical and Computer Engineering, Sungkyunkwan University</i>
WP1-049	Negative Differential Transconductance Device for Multi-Valued Logic based on the Tungsten Diselenide / Tungsten Ditelluride Heterojunction Hogeun Ahn ¹ and JinHong Park ^{1,2} <i>¹Department of Electrical and Computer Engineering, Sungkyunkwan University, ²SKKU Advanced Institute of Nanotechnology (SAINT), Sungkyunkwan University</i>
WP1-050	Simultaneous Extraction of the Grain Size, Single-crystalline Grain Sheet Resistance, and Grain Boundary Resistivity of Polycrystalline Monolayer Graphene Jiyeong Yun, Honghwi Park, and Hongsik Park <i>School of Electronic and Electrical Engineering, Kyungpook National University</i>
WP1-051	Tailoring Electrical Properties of MoS₂-FETs with Spatially Controlled Surface Charge Transfer Doping via Selective Inkjet Printing Inho Jeong ^{1,2} , Kyungjune Cho ¹ , Seobin Yun ¹ , Jiwon Shin ³ , Jaeyoung Kim ³ , Gyu-Tae Kim ² , Takhee Lee ³ , and Seungjun Chung ¹ <i>¹Soft Hybrid Materials Research Center, KIST, ²School of Electrical Engineering, Korea University, ³Department of Physics and Astronomy, Seoul National University,</i>
WP1-052	Observation of Interlayer Couplings in MoS₂, WS₂ Bilayers and MoS₂/WS₂ Heterostructures by Low-frequency Raman Spectroscopy Min-Kyu Seo ¹ , Ki Hoon Shin ¹ , Sumin Jung ¹ , A-Rang Jang ² , and Jung Inn Sohn ¹ <i>¹Division of Physics and Semiconductor Science, Dongguk University-Seoul, ²Department of Electrical Engineering, Semyung University</i>
WP1-053	In-Plane 1D-2D Metal-Semiconductor Mo₆Te₆-MoTe₂ Heterostructures Synthesized by Te-Flux-Controlled Chemical Vapor Deposition Hyeonkyeong Kim ¹ and Youngdong Yoo ² <i>¹Department of Energy Systems Research, Ajou University, ²Department of Chemistry, Ajou University</i>
WP1-054	Effective Synapse Characteristic of Li-Ag Intercalation Based TMD Memory for Neuromorphic Computing Ga Young Cho and Woo Jong Yu <i>Department of Electrical and Computer Engineering, Sungkyunkwan University</i>



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WP1-055	Monolayer and Few-Layer Spiral MoSe₂ Synthesized Selectively by Flux-Controlled Chemical Vapor Deposition Joohyeon Ahn ¹ , Seongju Ha, Dong-Il Yeom ² , and Youngdong Yoo ³ ¹ Department of Energy Systems Research, Ajou University, ² Department of Physics, Ajou University, ³ Department of Chemistry, Ajou University
WP1-056	Change of Ge Local Environment in GeTe/Sb₂Te₃ Superlattice Chang Woo Lee ¹ , Hyeon Wook Lim ¹ , Da Sol Kim ¹ , and Mann- Ho Cho ^{1,2} ¹ Department of Physics, Yonsei University, ² Department of System Semiconductor Engineering, Yonsei University
WP1-057	Study on Ferroelectric Field-effect-transistor Fabricated on Two-dimensional Van-der-Waals Layered Semiconductor/Ferroelectric Structure Jun Cheol Kang and Jin Hong Park Department of Electrical and Computer Engineering, Sungkyunkwan University
WP1-058	Large-Scale Growth of Single-Crystal Few-Layer Hexagonal Boron Nitride Film on a Ni(111) Kyung Yeol Ma and Hyeon Suk Shin Department of Chemistry, UNIST
WP1-059	고성능 그래핀 트랜지스터 제작을 위한 새로운 그래핀 전사법 장야무진, 박종환, 이인환, 박상덕, 구태준, 황동목 성균관대학교
WP1-060	Ferroelectric Polymer-Based Synaptic Device with SiZnSnO Oxide Semiconductor Je Jun Lee and Jin Hong Park ANSDL, Sungkyunkwan University
WP1-061	Vertical Transistor Synapse based on Schottky Barrier Height Modulation with Organic Ferroelectric Material Seonggil Ham, Jingon Jang, Dohyoung Koo, Seonghoon Jang, Chul-Ho Lee, and Gunuk Wang KU-KIST Graduate School of Converging Science and Technology, Korea University
WP1-062	Introducing Two Strategies: Doping and Additional Ligand for Improving Perovskites Light-Emitting Diodes Myeong Jin Seol and Soo Young Kim School of Materials Science and Engineering, Korea University
WP1-063	Temperature Gradient Modulation of MoTe₂ for Phase and Composition Engineering via van der Waals Encapsulation Huije Ryu ¹ , Yunah Lee ¹ , Jae Hwan Jung ² , Yangjin Lee ³ , Yeryun Cheon ⁴ , Kenji Watanabe ⁵ , Takashi Taniguchi ⁶ , Kwanpyo Kim ³ , Hyeonsik Cheong ⁴ , and Gwan-Hyoung Lee ¹ ¹ Department of Materials Science and Engineering, Seoul National University, ² Department of Materials Science and Engineering, Yonsei University, ³ Department of Physics, Yonsei University, ⁴ Department of Physics, Sogang University, ⁵ Research Center for Functional Materials, National Institute for Materials Science, ⁶ International Center for Materials Nanoarchitectonics, National Institute for Materials Science



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WP1-064	<p>Epitaxially Aligned hBN/Au{111} Structures by Solid-state Dewetting of Metal Thin Film Yunah Lee, Yunyeong Chang, Huije Ryu, Miyoung Kim, and Gwan-Hyoung Lee <i>Seoul National University</i></p>
WP1-065	<p>Enhanced Photoluminescence of Multiple Two-Dimensional van der Waals Heterostructures Fabricated by Layer-by-Layer Oxidation of MoS₂ Sojung Kang¹, Yoon Seok Kim², Jae Hwan Jeong³, Junyoung Kwon³, Jong Hun Kim¹, Yeonjoon Jung¹, Jong Chan Kim⁴, Bumho Kim⁵, Sang Hyun Bae⁶, Pinshane Y. Huang⁶, James C. Hone⁵, Hu Young Jeong⁷, Jin-Woo Park³, Chul-Ho Lee², and Gwan-Hyoung Lee¹ ¹<i>Department of Materials Science and Engineering, Seoul National University</i>, ²<i>KU-KIST Graduate School of Converging Science and Engineering, Korea University</i>, ³<i>Department of Materials Science and Engineering, Yonsei University</i>, ⁴<i>Department of Materials Science and Engineering, UNIST</i>, ⁵<i>Department of Mechanical Engineering, Columbia University</i>, ⁶<i>Department of Materials Science and Engineering, University of Illinois at Urbana-Champaign</i>, ⁷<i>UNIST Central Research Facilities and Department of Materials Science and Engineering, UNIST</i></p>
WP1-066	<p>Joule Heating Effect of RKKY Interaction in p-MTJ Structure Subin Im¹, Seyeop Jeong¹, Donghyeon Lee¹, Taekhyeon Lee², Jungmin Park², Kab-Jin Kim², and Sanghoon Kim¹ ¹<i>Department of Physics, University of Ulsan</i>, ²<i>Department of Physics, KAIST</i></p>
WP1-067	<p>가스 센싱을 위한 손쉬운 Nanoporous 금속 산화물 제조 권우미, 최대건, 유상우 <i>Department of Advanced Materials Engineering, Kyonggi University</i></p>
WP1-068	<p>은 나노 와이어 구조 위 환원 그래핀 산화물 슈퍼 커패시터 유연전극 정인기, 윤광석 <i>서강대학교 전자공학과</i></p>
WP1-069	<p>Photoluminescence Modulation of Monolayer MoS₂ via Functionalization of Substrate Kyungmin Yang¹, Eunji Ji², June-Chul Shin¹, and Gwan-Hyoung Lee¹ ¹<i>Department of Materials Science & Engineering, Seoul National University</i>, ²<i>Department of Materials Science & Engineering, Yonsei University</i></p>
WP1-070	<p>인체 적용 가능한 신축성 은 전극의 제작 및 응용 Gihak Kim, Jonghyun Jeong, and Jaewook Jeong <i>School of Information and Communication Engineering, Chungbuk National University</i></p>



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K. Memory (Design & Process Technology)

심사위원: 최신현 교수(KAIST), 정연주 박사(KIST)

WP1-071	<p>Logic Compatible Embedded Flash Memory Violating Minimum Gate Length Rule in 180nm CMOS Technology</p> <p>Youngseok Jeong^{1,3}, Jongwon Lee³, Sihwan Kim^{1,2}, Younghee Jeon¹, Seung-Hwan Song^{1,2}, and Myounggon Kang³</p> <p>¹SEMIBRAIN Inc., ²ANAFLASH Inc., ³Department of Electronic Engineering, Korea National University of Transportation</p>
WP1-072	<p>Threshold Switching Characteristics of CoOx-Based Memristor for Neuromorphic Computing System</p> <p>Dohyung Kim^{1,2}, Loc Truong³, Jongmin Lee^{1,2}, Bumho Jeong^{1,2}, Daeho Lee³, and Hui Joon Park^{1,2}</p> <p>¹Department of Organic and Nano Engineering, Hanyang University, ²Human-Tech Convergence Program, Hanyang University, ³Department of Mechanical Engineering, Gachon University</p>
WP1-073	<p>Threshold Switching – Phase Change Memory for Volatile-Nonvolatile Coexistence</p> <p>Sang Hyun Sung and Keon Jae Lee</p> <p>Department of Materials Sciences and Engineering, KAIST</p>
WP1-074	<p>Novel Synaptic Transistors Employing Dual Gate Dielectric Structure of Ferroelectric Layer and Charge Trapping Layer</p> <p>Su Jae Heo^{1,2}, Jung Wook Lim^{1,2}, Hee Chul Lee³, and Hak Gyeong Kim³</p> <p>¹ETRI, ²University of Science and Technology, ³Department of Advanced Materials Engineering, Korea Polytechnic University</p>
WP1-075	<p>Fabrication and Characterization of Ferroelectric Hafnium Oxide Thin Film</p> <p>Sang Hyun Sung, Yu Jin Jeong, and Keon Jae Lee</p> <p>Department of Materials Sciences and Engineering, KAIST</p>
WP1-076	<p>Threshold Switching Behaviors Observed in Ag/TaO_x/TiN Device by Controlling First Reset Process</p> <p>Juyeong Pyo and Sungjun Kim</p> <p>Division of Electronics and Electrical Engineering, Dongguk University</p>
WP1-077	<p>Pt/ZnO/TiN 에서의 Pulse 인가에 따른 Filament 변화</p> <p>Jongmin Park and Sungjun Kim</p> <p>Division of Electronics and Electrical Engineering, Dongguk University</p>
WP1-078	<p>Probabilistic Computing Using Diffusive Memristors</p> <p>Kyung Seok Woo, Jae Hyun Kim, Janguk Han, and Cheol Seong Hwang</p> <p>Department of Materials Science and Engineering and Inter-University Semiconductor Research Center, Seoul National University</p>



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WP1-079	Implementation of Lithography Process-Compatible Synaptic Transistors Using Milk Casein Electrical Double Layer Sung-Hun Kim and Won-Ju Cho <i>Department of Electronic Materials Engineering, Kwangwoon University</i>
WP1-080	Light-Sensitive Organic Semiconductor for Oxide Memristor-Based Artificial Photonic Synapse Jongmin Lee ^{1,2} , Dohyung Kim ^{1,2} , Bum Ho Jeong ^{1,2} , Sanghyuk Park ³ , and Hui Joon Park ^{1,2} ¹ Department of Organic and Nano Engineering, Hanyang University, ² Human-Tech Convergence Program, Hanyang University, ³ Department of Chemistry, Kongju National University
WP1-081	Resistive Switching Behavior of a Tantalum Amorphous Oxide for Nonvolatile Memory Jung-Hwa Cha and Myoung-Jae Lee <i>Research Institute, DGIST</i>
WP1-082	Implementation of Artificial Synaptic Properties in IGZO Transistors with Bovine Milk Casein Electrical Double Layers Hwi-Su Kim and Won-Ju Cho <i>Department of Electronic Materials Engineering, Kwangwoon University</i>
WP1-083	Analysis of the Role of the Al₂O₃ Layers in Self-Rectifying and Forming-Free Pt/Al₂O₃/HfO₂/Al₂O₃/TiN Memristor Jang Uk Han, Yoon Ho Jang, and Cheol Seong Hwang <i>Department of Materials Science and Engineering and Inter-University Semiconductor Research Center, Seoul National University</i>
WP1-084	Visual Perception via Artificial Photonic Synapses for Selective Light Detection Bum Ho Jeong ^{1,2} , Hyunwoo Park ³ , Hansam Lee ⁴ , Jongmin Lee ^{1,2} , Dohyung Kim ^{1,2} , Young-Beom Kim ⁴ , Hyeongtag Jeon ³ , and Hui Joon Park ^{1,2} ¹ Department of Organic and Nano Engineering, Hanyang University, ² Human-Tech Convergence Program, Hanyang University, ³ Department of Materials Science and Engineering, Hanyang University, ⁴ Department of Mechanical Convergence Engineering, Hanyang University
WP1-085	Improvement of Switching Performance of Memristive Memory Device via Conductive Filament Control Byoung Kuk You, Jung Won Oh, and Keon Jae Lee <i>Department of Material Science and Engineering, KAIST</i>
WP1-086	Milk-Ta₂O₅ Hybrid Memristors based on Crossbar Array Structure for Bio-Organic Neuromorphic Chip Applications Jin-Gi Min and Won-Ju Cho <i>Department of Electronic Materials Engineering, Kwangwoon University</i>
WP1-087	Conductance Quantization Characteristics of Pt/Al₂O₃/TaN RRAM Device Yunseok Lee and Sungjun Kim <i>Division of Electronics and Electrical Engineering, Dongguk University</i>



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WP1-088	<p>Resistive Switching and Synaptic Characteristics of WO_x-Based Memristor on ITO Glass Electrode</p> <p>Jihyung Kim and Sungjun Kim <i>Division of Electronics and Electrical Engineering, Dongguk University</i></p>
WP1-089	<p>Performance Improvement of SOI-Based Synaptic Transistors through Application of Ta_2O_5-Chitosan-Ta_2O_5 Hybrid Electric Double Layer</p> <p>Hyun-Sik Choi and Won-Ju Cho <i>Department of Electronic Materials Engineering, Kwangwoon University</i></p>
WP1-090	<p>Realization of CMOS-Compatible Artificial Synapse Based on IGZO Electric-Double-Layer Transistors Gated by Polyvinyl Alcohol Electrolytes</p> <p>Dong-hee Lee and Won-Ju Cho <i>Department of Electronic Materials Engineering, Kwangwoon University</i></p>
WP1-091	<p>Hafnia Based Ferroelectric Tunnel Junction Synaptic Device for Neuromorphic Computing Application</p> <p>Sungmun Song¹, Woori Ham¹, Gyuil Park², Wonwoo Kho², Hyunjoo Hwang², Jisoo Kim², Hyo-Bae Kim³, Ji-Hoon Ahn³, and Seung-Eon Ahn^{1,2} <i>¹Department of Nano & Semiconductor Eng, Korea Polytechnic University, ²Department of IT · Semiconductor Convergence Eng, Korea Polytechnic University, ³Department of Material Science and Chemical Eng, Hanyang University</i></p>
WP1-092	<p>ALD HfO_2 Based RRAM for 3D Vertical Synapse Device Application</p> <p>Osung Kwon, Jongmin Park, and Sungjun Kim <i>Division of Electronics and Electrical Engineering, Dongguk University</i></p>
WP1-093	<p>DRAM 동작 예측 Deep Learning Training을 위한 데이터 수집 시스템</p> <p>Jonghyun Cho, Jeonghun Son, Yeji Choi, and Young-Jae Min <i>Department of Electric and Electronic Engineering, Halla University</i></p>
WP1-094	<p>Improved Conductance Control by Introducing Nanoparticles in High-k Based RRAM Devices for Neuromorphic System Application</p> <p>Chandreswar Mahata, Beomki Jeon, and Sungjun Kim <i>Division of Electronics and Electrical Engineering, Dongguk University</i></p>
WP1-095	<p>Optically Controlled Memristor Devices for Neuromorphic System Application</p> <p>Chandreswar Mahata, Seyoung Yang, and Sungjun Kim <i>Division of Electronics and Electrical Engineering, Dongguk University</i></p>
WP1-096	<p>Synaptic characteristics of $Ag/SnO_x/TiN$ Resistive Switching Device</p> <p>Jiwoong Shin and Sungjun Kim <i>Electronic and Electrical Engineering, Dongguk University</i></p>



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WP1-097	<p>Short-term Memory 효과를 고려한 ZnO기반 멤리스터의 시냅스 특성 Seokyeon Yun¹, Min-Hwi Kim², and Sung Jun Kim¹ ¹Division of Electronics and Electrical Engineering, Dongguk University, ²Electrical and Computer Engineering, Seoul National University</p>
WP1-098	<p>피드백 전계효과 트랜지스터의 1T DRAM 특성 연구 전주희, 우솔아, 손재민, 조경아, 김상식 고려대학교 전기전자공학과</p>
WP1-099	<p>재구성이 가능한 피드백 전계효과 트랜지스터의 전기적 특성 연구 신연우, 손재민, 조경아, 김상식 고려대학교 전기전자공학과</p>
WP1-100	<p>Ni/SiO_x/ITO 소자의 디지털스위칭과 아날로그스위칭이 양립가능한 Switching Mechanism 및 뉴로모픽 시스템에 적용 Minsu Park, Jongmin Park, and Sungjun Kim Division of Electronics and Electrical Engineering, Dongguk University</p>
WP1-101	<p>Development of Basic Model for Cerium Oxide Based Interfacial Switching Memory Device Using Finite Element Method Sagar Khot, Dongmyung Jung, and Yongwoo Kwon Hongik University</p>
WP1-102	<p>1T DRAM with a Protruded SiGe Quantum Well for Larger Sensing Margin Si Won Lee¹, Seongjae Cho², Il Hwan Cho¹, and Garam Kim¹ ¹Myongji University, ²Gachon University</p>
WP1-103	<p>교차 결합 인버터를 활용한 난수 생성 회로 박준성¹, 김재성¹, 채동혁¹, 김윤¹, 구민석² ¹서울시립대학교 전자전기컴퓨터공학부, ²인천대학교 컴퓨터공학과</p>
WP1-104	<p>Charge Trap Flash based on IGZO for a Synaptic Device Eunpyo Park^{1,2}, Gichang Noh¹, Min Jee Kim¹, Taehyun Kim¹, Yong Woo Sung¹, Dong Yeon Woo¹, In Soo Kim¹, Sang Bum Kim², Jiwon Chang³, Hyun-Cheol Song¹, and Joon Young Kwak¹ ¹KIST, ²Seoul National University, ³Yonsei University</p>
WP1-105	<p>A Reliable MoS₂ Ion Synaptic Device for Long-term Plasticity with Tunable iCVD Organic-inorganic Hybrid Electrolyte Film Sanghun Lee¹, Seohak Park², Jeong yeop Oh³, and Sung-Yool Choi¹ ¹School of Electrical Engineering, KAIST, ²Graphene²D Materials Research Center, KAIST, ³Center for Advanced Materials Discovery towards ³D Displays, KAIST</p>



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WP1-106	<p>Low Voltage & High Reliability Polyfuse IP Liyan Jin, Jieon Kim, Eunsang Jo, Hyunsup Jung, and Joontae Jang <i>DB HiTek</i></p>
WP1-107	<p>InGaAs-OI Ferroelectric FET on Si Using Direct Wafer Bonding Kyul Ko^{1,2}, Dae-Hwan Ahn¹, Byeong-Kwon Ju², and Jae-Hoon Han¹ ¹KIST, ²Korea University</p>
WP1-108	<p>Implementation of Dendritic Network Organic Neurofiber Transistor with Enhanced Memory Cycle Endurance Kwang-Hun Choi^{1,2}, Soo Jin Kim¹, Jae-Seung Jeong¹, Ho Won Jang², Hyunsu Ju¹, and Jung Ah Lim¹ ¹Center for Opto-Electronic Materials and Devices, KIST, ²Department of Materials Science and Engineering, Seoul National University</p>
WP1-109	<p>Characteristic of TCAM based on Ferroelectric FET with 3nm Multi-Nanosheet Structure Hyungyeong Kim, Sugil Park, Gihong Kim, Changho Ra, and Jongwook Jeon <i>Department of Electrical and Electronic Engineering, Konkuk University</i></p>
WP1-110	<p>Thermal Barrier Interfacial Phase Change Memory Hyeon-wook Lim^{1,2}, Cho Kyu-jin³, Seok-Choi⁴, Da-sol Kim^{1,2}, Chang-woo Lee^{1,2}, Hoe-don Kwon^{1,2}, Tae-hun Jang^{1,2}, Yoen-woo Seong^{1,2}, Byung-joon Choi⁴, Yang Cheol-woong³, and Mann-Ho Cho^{1,2} ¹Department of Physics, Yonsei University, ²Department of System Semiconductor Engineering, Yonsei University, ³Department of Physics, Seonggyungwan University, ⁴Department of Physics, Seoul National University of Science and Technology</p>
WP1-111	<p>Electrical Characteristics Analysis of Ferroelectric Field-Effect Transistor Using 2D TMD Channels Seojoo Lee and Jin-hong Park <i>Department of Electrical and Computer Engineering, Sungkyunkwan University</i></p>
WP1-112	<p>수직 적층형 로직-인-메모리 소자 기반 전가산기 설계 Changhyun Im¹, Sueyeon Kim¹, Myounggon Kang², Seung Jae Baik³, and Jongwook Jeon¹ ¹건국대학교 전기전자공학부, ²한국교통대학교 전자전기공학부, ³한경대학교 전자전기공학부</p>
WP1-113	<p>Single SRAM Ternary Content Addressable Memory (TCAM) 김민재, 김영민 <i>홍익대학교 전자전기공학부</i></p>
WP1-114	<p>Charge Trap Memory Transistor for Neuromorphic through Trap Time Control Eun Seo Jo and You Seung Rim <i>Department of Intelligent Mechatronics Engineering, and Convergence Engineering for Intelligent Drone, Sejong University</i></p>



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WP1-115	<p>주변 온도에 따른 상전이 소자 특성 묘사 회로 모델링</p> <p>오주영, 정향교, 이예지, 전종욱</p> <p>건국대학교 전기전자공학부</p>
WP1-116	<p>The Improved Ferroelectric Characteristics of Ferroelectric Memory Devices Using ALD SiO₂ and Al₂O₃ Interlayers</p> <p>Ji Yeon Lim, Ye Rim Shin, Boncheol Ku, and Changhwan Choi</p> <p><i>Division of Materials Science and Engineering, Hanyang University</i></p>
WP1-117	<p>The Effect of ptm Transition Delay Time on Hyperfet Based Circuit Characteristics</p> <p>Yeji Lee, Hang-gyo Jung, Jooyong Oh, Changhyun Yoo, and Jongwook Jeon</p> <p><i>Department of Electrical and Electronic Engineering, Konkuk University</i></p>
WP1-118	<p>A Finite Element and Phase-field Simulation of VCM-based Resistive Memory</p> <p>Dongmyung Jung and Yongwoo Kwon</p> <p><i>Department of Materials Science and Engineering, Hongik university</i></p>
WP1-119	<p>Optoelectronic Synaptic Device Using Copper-phthalocyanine (CuPc) and para-sexiphenyl (p-6P) Heterojunction and Its Operation Under Solar-stimulation</p> <p>Hyongsuk Choo and Jin-Hong Park</p> <p><i>Department of Electrical and Computer Engineering, Sungkyunkwan University</i></p>
WP1-120	<p>싱글 레벨 셀 낸드 플래시 메모리 상에서의 로직 연산 구현</p> <p>안지훈¹, 방성진¹, 채동혁¹, 구민석², 김 윤¹</p> <p>¹서울시립대학교 전자전기컴퓨터공학과, ²인천대학교 컴퓨터공학부</p>
WP1-121	<p>3nm Multi-Nanosheet FET-Based Ferroelectric FET Device Full Adder Characteristics Analysis</p> <p>Sugil Park, Changho Ra, Gihong Kim, Hyungyeong Kim, and Jongwook Jeon</p> <p><i>Department of Electrical and Electronic Engineering, Konkuk University</i></p>
WP1-122	<p>HfO₂ 기반 RRAM 소자의 메모리 윈도우 확대 방안에 대한 연구</p> <p>이선정, 심건호, 백승재</p> <p><i>School of Electronic and Electrical Engineering, Hankyong National University</i></p>
WP1-123	<p>Outstanding Electrical and Thermal Characteristics of N-doped Si-Ge-Te Quaternary Ovonic Threshold Switching Devices for Neuromorphic Applications</p> <p>Chaebin Park^{1,2}, Sang-Heon Park^{1,2}, Yoongu Lee^{1,2}, and Jong-Souk Yeo^{1,2}</p> <p>¹School of Integrated Technology, Yonsei University, ²Yonsei Institute of Convergence Technology, Yonsei University</p>



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L. Analog Design

심사위원: 엄지용 교수(금오공과대학교), 정영호 교수(대구대학교)

WP1-124	A Cross-Coupled Self-Driving Charge-Pump Topology for Low Voltage Applications Myeong Woo Kim and Jae Joon Kim <i>Department of Electrical Engineering, UNIST</i>
WP1-125	A Fully Integrated Pulse-Skipping Controlled Charge Pump for Portable Stimulators Myeong Woo Kim and Jae Joon Kim <i>Department of Electrical Engineering, UNIST</i>
WP1-126	Ultrasound Receiver for CMUT-Based Endoscopic Ultrasound System Gichan Yun, Kyeongwon Jeong, Jaesuk Choi, Yechan Park, Seunggho Jhung, and Minkyu Je <i>School of Electrical Engineering, KAIST</i>
WP1-127	A Continuous-Time Sigma-Delta Analog-to-Digital Converter with 2-Step Operation Chan Sam Park and Jae Joon Kim <i>Department of Electrical Engineering, UNIST</i>
WP1-128	Noise-Shaping SAR ADC for EEG Signal Monitoring Yegeun Kim, Kyeongwon Jeong, Kim-Hoang Nguyen, and Minkyu Je <i>School of Electrical Engineering, KAIST</i>
WP1-129	Chopper Stabilized Low Noise Amplifier for EEG Analog Front-End Circuit Changhun Seok, Yegeun Kim, Woojin Ahn, Yoontae Jung, and Minkyu Je <i>School of Electronic Engineering, KAIST</i>
WP1-130	Front-End Transceiver Design for CMUT-Based Ultrasound Imaging Shinyong Shim, Maesoon Im, and Byung Chul Lee <i>Brain Science Institute, KIST</i>
WP1-131	A Low Power Low Noise Interface Circuit for Bio-Impedance Measurement Haidam Choi, Jihoon Suh, Sunghoon Choi, and Minkyu Je <i>School of Electrical Engineering, KAIST</i>



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WP1-132	Reference-Sampling Phase-locked Loop with an Auxiliary FLL Using a Dead-zone PFD Yujin Kyung, Goo-han Ko, Si Keuk Ryu, Zhenbo Jin, and Donghyun Baek <i>School of Electrical Engineering, Chung-Ang University</i>
WP1-133	Flying-Capacitor-Assisted Single Mode Buck-Boost Converter Sunghae Kim and Jaeduk Han <i>Department of Electronic Engineering, Hanyang University</i>
WP1-134	저전력 저전압의 에너지 하베스팅을 위한 인덕터 기반의 직류-직류 전력 컨버터 김영범, 조동희, 이연봉, 신흥석, Hung Phan Dang, 제민규 <i>한국과학기술원</i>
WP1-135	리셋 스위치를 제거한 저면적 단방향 써모미터 코드 래치 우기찬 ¹ , 김인태 ¹ , 김유신 ¹ , 박정주 ¹ , 윤대한 ¹ , 조미령 ¹ , 양병도 ² <i>¹광주과학기술원, ²충북대학교</i>
WP1-136	Multi-Mode Noise-Shaping SAR ADC Using Comparator Offset-Cancellation with Body-Voltage Trimming Technique Won-Jin Eom and Jaejoon Kim <i>School of Electrical Engineering, UNIST</i>
WP1-137	시간-인터리빙 축차비교형 ADC를 위한 타이밍-스큐 보상 기법 구현 Seong-Wook Choi, Kiho Seong, Yong Shim, and Kwang-Hyun Baek <i>Chung-Ang University</i>
WP1-138	축차비교형 ADC의 분절 이진 가중치 감쇠 커패시터를 사용한 DAC 레이아웃 기법 Keun Yong Chung ¹ , Bo Kyong Choi ² , Yong Shim ¹ , and Kwang-Hyun Baek ¹ <i>¹Chung-Ang University, ²LG Display Co., Ltd.</i>
WP1-139	Design of Negative Active Based Cascode Stage for High PSRR in Bandgap Voltage Reference Yeong-Hun Kim ¹ and Kang-Yoon Lee ² <i>¹Department of Electrical and Computer Engineering, Sungkyunkwan University</i>
WP1-140	Design of Real Time Zero Current Detector Using Adaptive-bias Comparator with Tunable Offset for DC-DC Converter Hyunjin Jeong, Byeong-Gi Jang, and Kang-Yoon Lee <i>Department of Electrical and Computer Engineering, Sungkyunkwan University</i>



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WP1-141	Design of Ultra Low Power Low-Dropout Regulator Dae-Geun Cho, Byeong Gi Jang, and Kang Yoon Lee <i>Department of Electrical and Computer Engineering, Sungkyunkwan University</i>
WP1-142	높은 홀딩전압을 갖는 ESD 보호회로에 관한 연구 Jang Han Jeong, Je Wook Woo, Jun Ho Gong, and Yong Seo Koo <i>Dankook University</i>
WP1-143	Design of Power on Reset Circuit Using Low Static Current Consumption and Input Power Supply Hyoung Jun Na and Kang Yoon Lee <i>Department of Electrical and Computer Engineering, Sungkyunkwan University</i>
WP1-144	Feedback Detection Circuit을 이용한 향상된 Transient 특성을 갖는 LDO 레귤레이터 권상욱, 도경일, 이병석, 구용서 <i>단국대학교 전기전자공학부</i>
WP1-145	심볼 인코더를 이용한 고속 C-PHY 인터페이스 송신기 Myeong Kyu Song and Jung-Hoon Chun <i>College of Information and Communication Engineering, Sungkyunkwan University</i>
WP1-146	커패시터 비와 이득에 둔감한 CMOS 이미지 센서용 12 bit 사이클릭 ADC Jaemin Hong, Hyunsun Mo, and Daejeong Kim <i>Department of Electronics Engineering, Kookmin University</i>
WP1-147	Design of Low Noise Sensor Interface Circuit for Bridge Sensors Jimin Koo, Song-I Cheon, Sein Oh, Seunga Park, and Minkyu Je <i>KAIST</i>
WP1-148	멀티페이즈 항 고속 전압 제어 링 발진기 박민수, 전정훈 <i>Sungkyunkwan University</i>
WP1-149	6-bit 28GS/s 시간 교차 아날로그-디지털 변환기 및 디지털 오프셋 부정합 보상 회로 Yun Kuk Park and Jung Hoon Chun <i>College of Information and Communication Engineering, Sungkyunkwan University</i>



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WP1-150	<p>Compact IoT Harmful Gas Pattern Recognition Device for Low-Cost Gas Sensor Embedding A Sensor Adaptable Read Out Integrated Circuit Hee Young Chae, Jeonghoon Cho, Yunsik Lee, and Jae Joon Kim <i>Department of Electrical Engineering, UNIST</i></p>
WP1-151	<p>Zoom ADC-assisted Noise Shaping SAR ADC Sein Oh, Yoontae Jung, Seunga Park, Jimin Koo, and Minkyu Je <i>School of Electrical Engineering, KAIST</i></p>
WP1-152	<p>게이트 저항에 의한 전력변환기기의 효율 및 노이즈 최적화 장현규^{1,2}, 정동윤¹, 권성규¹, 조두형¹, 원종일¹, 박건식¹, 임종원¹, 윤익재² ¹ETRI, ²Chungnam National University</p>
WP1-153	<p>개선된 디지털 디코더 로직을 사용한 고성능 저전력 직접 디지털 주파수 합성기 Keun-Yong Chung, Jae-Soub Han, and Kwang-Hyun Baek <i>Chung-Ang University</i></p>
WP1-154	<p>디더링 형식의 비선형 DAC을 적용한 2GHz CMOS 기반 저전력 직접 디지털 주파수 합성기 Seong-Wook Choi¹, Ji-Min Choi², and Kwang-Hyun Baek¹ ¹Chung-Ang University, ²LG Electronics</p>
WP1-155	<p>A Low Power Analog SNN Neuron Circuit using Coarse-Fine Comparator Dong-won Lee, Chae-yeon Shin, and Byung-do Yang <i>Department of Electronics Engineering, Chungbuk National University</i></p>
WP1-156	<p>Hybrid Type Phase-Interpolator를 사용한 2.4GHz Fractional-N 서브 샘플링 위상 고정 루프 Chung-Hee Jang, Yun-Sik Choi, and Kwang-Hyun Baek <i>Chung-Ang University</i></p>
WP1-157	<p>사물인터넷 어플리케이션에 사용되는 Dynamic Element Matching 기법을 사용한 12-bit 전류조절 DAC Chung-Hee Jang, Bo-Yun Jung, and Kwang-Hyun Baek <i>Chung-Ang University</i></p>
WP1-158	<p>전압 제어 발진기의 전류를 조절하는 기법을 활용한 문턱 전압 근처 (NTV) Chung-Hee Jang, Kitae-Yoo, and Kwang-Hyun Baek <i>Chung-Ang University</i></p>



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WP1-159	시간 교차 아날로그-디지털 변환기의 오프셋 부정합 보상 회로 Hwiwon Kim and Jung-Hoon Chun <i>College of Information and Communication Engineering, Sungkyunkwan University</i>
WP1-160	0도 위상으로 정렬한 1차 측파대 필터들을 이용한 저전력 고속 비동기식 BPSK 복조기 이론과 혼성신호 집적회로 설계 Benjamin P. Wilkerson ^{1,2} ¹ <i>Department of Electrical and Computer Engineering, Inha University, ²PW Semiconductor Labs, Inc.</i>
WP1-161	180도 위상으로 정렬한 1차 측파대 필터들을 이용한 저전력 고속 비동기식 BPSK 복조기 이론과 IC 수율증대를 위한 설계방법 Benjamin P. Wilkerson ^{1,2} ¹ <i>Department of Electrical and Computer Engineering, Inha University, ²PW Semiconductor Labs, Inc.</i>

M. RF and Wireless Design

심사위원: 권구덕 교수(강원대학교), 권익진 교수(아주대학교)

WP1-162	A Fully-Integrated Ka-Band CMOS Rectifier Using Large Signal Analysis for Wireless Power Transfer Junhyuk Yang, Seonhye Jang, and Changkun Park <i>Department of Electronic Engineering, Soongsil University</i>
WP1-163	37–40 GHz GaN Low-Noise Amplifier MMIC for 5G FR2 Application Se Joon Park ¹ , Woo Rin Kim ¹ , Hyun-Bae Ahn ¹ , Sanghun Lee ² , and Junghwan Han ¹ ¹ <i>Department of Radio Science Engineering, Chungnam National University, ²Wavepia Incorporated</i>
WP1-164	A V-Band Fully Differential 4-Channel Transmitter IC in TSMC 65 nm RF CMOS Seonghoon Kim, Gwang-Sub Kim, Kwang-Il Oh, Jun Young Park, and Donghyun Baek <i>School of Electrical Engineering, Chung-Ang University</i>
WP1-165	Harmonic Distortion Analysis Method Using Green Function Theory Nakwon Yu, Jongmin Kim, Youngchul Kim, and Juntae Jang <i>TEDS Team, DB HiTek</i>
WP1-166	Optically Transparent Display-Integrated Array Antennas for Bandwidth and Gain Enhancement Jin Myeong Heo and Gangil Byun <i>Department of Electrical Engineering, UNIST</i>



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WP1-167	Design of PLL based on Multi Clock Generation Ho Won Kim and Kan Yoon Lee <i>Department of Electrical and Computer Engineering, Sungkyunkwan University</i>
WP1-168	A Design of High Power SP8T and SP7T Using 90 nm SOI Process Technology David Kim and Kang Yoon Lee <i>Department of Electrical and Computer Engineering, Sungkyunkwan University</i>
WP1-169	A Design of Ultra-High Gain Low Noise Amplifier with Multi-input Cascode Structure Dong Min Kim and Kang Yoon Lee <i>Department of Electrical and Computer Engineering, Sungkyunkwan University</i>
WP1-170	Design of Power Amplifier for 5.8GHz DSRC Application with ASK Modulation Myeong Gwan Kim and Knag Yoon Lee <i>Department of Electrical and Computer Engineering, Sungkyunkwan University</i>

N. VLSI CAD

심사위원: 송대건 교수(경북대학교), 강석형 교수(POSTECH)

WP1-171	Machine Learning Based Path Delay Analysis Considering Crosstalk in 3D-Ics Seok-Byum Kim, Mu-Jun Choi, and Juho Kim <i>Sogang University</i>
WP1-172	Lowering the Power of Sobel Edge Detection by Fanout Modification Mincheorl Shin and Youngmin Kim <i>School of Electronic & Electrical Engineering, Hongik University</i>



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O. System LSI Design

심사위원: 이영주 교수(POSTECH), 공병용 교수(공주대학교)

WP1-173	A 3.5 GHz Fast-Locking All-Digital Quadrature Clock Corrector Sang-bum Park and Won-Young Lee <i>Seoul National University of Science and Technology</i>
WP1-174	Weather Prediction Device based on IoTs Iyapo Kamoru Olarewaju and Kyung Ki Kim <i>Department of Electronic Engineering, Daegu University</i>
WP1-175	모든 유사-FFT 알고리즘을 위한 최적의 데이터 재배열 회로 설계법 신예린, 최소연, 유호영 <i>충남대학교 전자공학과</i>
WP1-176	A Compact RISC-V Processor Specialized for Stress Measurement Se-eun Huh, Hyeoncheol Jang, Sangmin Jeon, Hyunjun Kang, Doyeop Kim, Wooyoung Lee, Juyoung Oh, and Woojoo Lee <i>School of Electrical and Electronics Engineering, Chung-Ang University</i>
WP1-177	FPGA LUT 입력에 따른 비트 출력 지연 시간 검증 이성룡, 김민수, 유호영 <i>충남대학교 전자공학과</i>
WP1-178	슈트라센 알고리즘을 활용한 효율적인 FPGA 행렬 곱셈기 배준휘, 김영민 <i>홍익대학교 전자전기공학부</i>
WP1-179	SQNR 기반 연산 복잡도를 고려한 자원 효율적인 레이어 별 Mixed Precision 방법론 김하나 ^{1,2} , 은현 ³ , 최정환 ³ , 김지훈 ^{1,2} <i>¹이화여자대학교 전자전기공학과, ²이화여자대학교 스마트팩토리 융합전공, ³오픈엠티테크놀로지</i>
WP1-180	Custom-Posit : 다양한 표현 범위 설정이 가능한 변형된 Posit Format 김하나 ^{1,2} , 김지훈 ^{1,2} <i>¹이화여자대학교 전자전기공학과, ²이화여자대학교 스마트팩토리 융합전공</i>



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

심사위원: 박정웅 교수(가천대학교), 유상우 교수(경기대학교)

WP1-181	1.2kV SiC MOSFET의 내방사선 특성 분석 윤효원, 김채윤, 박영은, 박초이, 석오균 금오공과대학교 전자공학부
WP1-182	A Self-powered Photodetector in Vertical Architecture Using Mixed-halide Perovskite for Highly Sensitive UVC Detection Chung Wung Bark Gachon University
WP1-183	SiC MOSFET 소자의 Power Cycling Test 고장 분석 김미진 ¹ , 서재화 ² , 강인호 ² , 이호준 ¹ ¹ 부산대학교 전기공학과, ² 한국전기연구원 전력반도체 연구센터
WP1-184	Graphene on Peeled-off Ru for Anti-icing D. D. Megersa ^{1,2} and Hak Ki Yu ^{1,2} ¹ Department of Energy Systems Research, Ajou University, ² Department of Materials Science and Engineering, Ajou University
WP1-185	Effect of Sputtering Power on the Growth of MoO₃ Films Deposited by Magnetron Sputtering Gudena-Gutema Teshome ^{1,2} and Hak. Ki. Yu ^{1,2} ¹ Department of Energy Systems Research, Ajou University, ² Department of Materials Science and Engineering, Ajou University
WP1-186	Enhancing Thermal Stability of Copper Film Using Multi-Layer Graphene Barrier Hojun Shin ^{1,2} and Hak Ki Yu ^{1,2} ¹ Department of Energy Systems Research, Ajou University, ² Department of Materials Science and Engineering, Ajou University
WP1-187	Cracked Palladium Using Self-Cracked WO₃ Thin Film on Flexible Substrate for Use as H₂ Gas Sensors Noeul Kim ¹ and Hak Ki Yu ^{1,2} ¹ Department of Energy Systems Research, Ajou University, ² Department of Materials Science and Engineering, Ajou University
WP1-188	KOH Activation of the Back Electrodes for the Graphene Supercapacitors Gil Hwan Lim ¹ , Jaechang Seol ² , and Yung Ho Kahng ¹ ¹ Department of Physics Education, Chonnam National University, ² Department of Chemical Engineering, Chonnam National University



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WP1-189	Cu-Based Catalyst for Electrochemical CO₂ Reduction Reaction Seokwoo Choe and Youn Jeong Jang <i>Department of Chemical engineering, Hanyang University</i>
WP1-190	Iron Phthalocyanine Based Electrocatalyst for Electrochemical Nitrogen Reduction to Ammonia Yonghyun Moon and Youn Jeong Jang <i>Department of Chemical Engineering, Hanyang University</i>
WP1-191	Strategy to Enhance Photoelectrochemical Water Splitting: Cu₂O Photocathode on Three-Dimensional Mesostructured Epitaxial Ni Charge Collector Minjeong Kim ^{1,2} , In Soo Kim ¹ , and Jin Gu Kang ¹ <i>¹Nanophotonics Research Center, KIST, ²School of Electrical Engineering, Korea University</i>
WP1-192	Promoting Selective Nitrogen Reduction with a Fe-confined MoS₂ Catalyst Inspired by Nitrogenase Jae Hyung Shim ¹ , Gyu Seong Yi ² , Hyun S. Park ² , and Chul-Ho Lee ^{1,3} <i>¹KU-KIST Graduate School of Converging Science and Technology, Korea University, ²Center for Hydrogen, Fuel Cell Research, KIST, ³Department of Integrative Energy Engineering, Korea University</i>
WP1-193	Fast and Accurate Model to Estimate BV of SJ Ring Corner Using 3D TCAD Simulation Jieun Lee ¹ , Jong Min Kim ¹ , Jae Hyun Kim ¹ , Myeong Bum Pyun ² , Kwang Young Ko ² , Youngchul Kim ¹ , and Joontae Jang ¹ <i>¹Technology Enabling Design Support Team, DB HiTek, ²Device Development Team, DB HiTek</i>
WP1-194	Bandgap Engineering of Sb₂(S_{1-x}Se_x)₃ Alloys via r.f. Magnetron Sputtering for Photoelectrochemical Water Splitting Hyejun Kim ^{1,2} , Soong Ju Oh ² , and In Soo Kim ¹ <i>¹Nanophotonics Research Center, KIST, ²Korea University</i>
WP1-195	All Solution-Processed Van Der Waals Thin-Film Electronics With High Performance And Low-Power Operation Su-Yeon Joung ¹ , Haena Yim ² , Jaehyung Shim ¹ , Yeon Ho Kim ¹ , Yoon Seok Kim ¹ , Jin S. Kim ¹ , Ji-Won Choi ² , and Chul-Ho Lee ¹ <i>¹KU-KIST Graduate School of Converging Science and Technology, Korea University, ²Center for Electronic Materials, KIST</i>
WP1-196	A Snapback Suppressed Reverse Conducting IGBT by Using Ge on P-collector Seong Yun Kim, Ki Yeong Kim, Tae Young Yoon, and Jang Hyun Kim <i>Pukyong National University</i>
WP1-197	Self-Align Channel 공정 적용 여부에 따른 1.2kV SiC MOSFET의 전기적 특성 분석 윤효원, 최수아, 박영은, 박초이, 김채윤, 석오균 <i>금오공과대학교 전자공학부</i>



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WP1-198	Highly Efficient Solar Vapor Generation via a Simple Morphological Alteration of TiO₂ Films Grown on a Glassy Carbon Foam Sungdo Kim, Zeeshan Tahir, Mamoon Ur Rashid, and Yong Soo Kim <i>Department of Physics and Energy Harvest-Storage Research Center, University of Ulsan</i>
WP1-199	Ca-Ion Co-Intercalation on Pyrolytic Carbon Materials Jong Chan Hyun, Son Ha, Dong Hyuk Kang, Yeonhwa Choi, and Young Soo Yun <i>KU-KIST Graduate School of Converging Science and Technology, Korea University</i>
WP1-200	Catalytic Nanoporous Carbon Hosts for High-performance Li Metal Anode Juhee Yoon ¹ , Subin Oh ¹ , Young Soo Yun ^{2,3} , and Hyoung-Joon Jin ^{1,4} <i>¹Program in Environmental and Polymer Engineering, Inha University, ²KU-KIST Graduate School of Converging Science and Technology, Korea University, ³Department of Integrative Energy Engineering, Korea University, ⁴Department of Polymer Science and Engineering, Inha University</i>
WP1-201	High-voltage Electrolyte System for Mg-ion Supercapacitors Sungmin Cho ¹ , Geonhee Han ¹ , Young Soo Yun ^{2,3} , and Hyoung-Joon Jin ^{1,4} <i>¹Program in Environmental and Polymer Engineering, Inha University, ²KU-KIST Graduate School of Converging Science and Technology, Korea University, ³Department of Integrative Energy Engineering, Korea University, ⁴Department of Polymer Science and Engineering, Inha University</i>
WP1-202	Three-dimensional Protective SEI Layer for Lithium Metal Anode Dong Hyuk Kang, Jong Chan Hyun, Son Ha, Eunji Lee, and Young Soo Yun <i>KU-KIST Graduate School of Converging Science and Technology, Korea University</i>
WP1-203	Electromagnetic Interference Shielding Film Using Nano Structure of Iron Oxide Implemented by Physical Vapor Deposition or Spin Coating Mingi Lee ^{1,2} , Youngho Kim ^{1,2} , Yeongji Yu ¹ , and Hak Ki Yu ^{1,2} <i>¹Department of Materials Science and Engineering, Ajou University, ²Department of Energy Systems Research, Ajou University</i>
WP1-204	Controllable Crystal Structure and Oxygen Vacancies of a-moo3 for Enhancing Electrochemical Properties Geonho Kwak and Hakki Yu <i>Department of Energy System Research, Ajou University</i>
WP1-205	Mechanical Properties Study of VO₂ Micro-beam According to Metal-insulator Transition Ji Kwon Bae and Hak Ki Yu <i>Department of Energy Systems Research, Ajou University</i>
WP1-206	Design of Digital Feedback Loop DC-DC Converter with Low Power Soft-Start Tae Seob Oh ¹ and Kang Yoon Lee ² <i>Department of Electrical and Computer Engineering, Sungkyunkwan University</i>



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WP1-207	<p>Optimization of Si Pyramid Texturing for Light-Trapping Enhanced III-V/Si Tandem Photovoltaics</p> <p>Eungjeong Choi¹, Seokho Kim¹, Yeonhwa Kim^{1,2}, Seungwan Woo^{1,3}, In-Hwan Lee^{1,3}, Won Jun Choi¹, and Daehwan Jung^{1,2}</p> <p>¹Center for Opto-electronic Materials and Devices, KIST, ²Division of Nano and Information Technology, KIST School at University of Science and Technology, ³Department of Materials Science and Engineering, Korea University</p>
WP1-208	<p>전기 도금 방식을 이용한 백금 단원자 촉매의 수소 발생 반응 메커니즘 연구</p> <p>Mechanism Exploration of Hydrogen Evolution Reaction on Platinum Single Atom Catalyst using Electrodeposition technique</p> <p>김소희, 배채림, 남규리, Junyi Wang, 황동목</p> <p>성균관대학교</p>
WP1-209	<p>Defect Engineering on Photocatalysts for Effective Conversion of Nitrogen to Ammonia</p> <p>Cho Hee Lee and Youn Jeong Jang</p> <p>Department of Chemical Engineering, Hanyang University</p>
WP1-210	<p>진동 운동 수확 진자형 마찰전기 나노발전소자 제작 및 특성</p> <p>장종범, Sonyana Adonijah Graham, 유재수</p> <p>경희대학교 전자공학과</p>
WP1-211	<p>Mesoporous Carbonaceous-Transition Metal Oxide Nanostructures for Supercapacitor Applications</p> <p>Shaik Junied Arbaz¹, Bhimanaboina Ramulu¹, Eun-Bum Cho², and Jae Su Yu¹</p> <p>¹Department of Electronics and Information Convergence Engineering, Kyung Hee University, ²Department of Fine Chemistry, Seoul National University of Science and Technology</p>
WP1-212	<p>Synthesis of Ternary Metal-based Materials for High-performance Supercapacitors</p> <p>Anki Reddy Mule, Bhimanaboina Ramulu, and Jae Su Yu</p> <p>Department of Electronics and Information Convergence Engineering, Kyung Hee University</p>
WP1-213	<p>A Study Of Stable I-V Measurement Using Delay Time Considering Logic For Perovskite Solar Cells</p> <p>Jae Sun Lee^{1,2}, Sungeun Park¹, Sang Hee Lee¹, Hee-eun Song¹, Min-Gu Kang¹, Yimhyun Jo¹, Dong Suk Kim¹, Tae-Kyung Lee¹, and Jae-Min Myoung²</p> <p>¹KIER, ²Yonsei University</p>
WP1-214	<p>n-type wafer 특성 한계 및 비저항에 따른 효율 영향분석</p> <p>권철욱, 박성은, 이상희, 송희은, 강민구, 이태경</p> <p>한국에너지기술연구원</p>
WP1-215	<p>P-type c-Si 태양전지의 Potential-induced Degradation 방지를 위한 Na⁺ 확산 방지막</p> <p>곽경민, 장은진, 유상우</p> <p>Department of Advanced Materials Engineering, Kyonggi University</p>



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WP1-216	Sr₃Al₂O₆ 수용성 희생층을 이용한 Si Membrane 제조 Semi Kang, Changhoon Jeong, and Sangwoo Ryu <i>Department of Advanced Materials Engineering, Kyonggi University</i>
WP1-217	Sol-gel 및 Electrochemical 합성에 의해 제조된 황 도핑 CuBi₂O₄의 특성 김은화, 유상우 <i>Department of Advanced Materials Engineering, Kyonggi University</i>
WP1-218	4H-SiC Lateral MOSFETs Implemented on HPSI Substrate with Double Implanted Current Path Layer Hyoung Woo Kim, Jeong Hyun Moon, Jae Hwa Seo, and Wook Bahng <i>Advanced Semiconductor Research Center, KERI</i>
WP1-219	결정질 Si 태양전지를 위한 유무기 하이브리드 투습 방지막 장은진, 곽경민, 유상우 <i>Department of advanced materials engineering, Kyonggi University</i>
WP1-220	Analysis of Passivation Characteristics of TOPCon Structure Inserted Intrinsic Poly-Si Hee Jun Yang ^{1,2} , Kwan Hong Min ¹ , Hee-eun Song ¹ , Min Gu Kang ¹ , Jae-Min Myoung ² , and Sungeun Park ¹ ¹ Photovoltaics Research Department, KIER, ² Department of Materials Science & Engineering, Yonsei University
WP1-221	Deep Learning-Assisted Image Characterizations in Composite Electrodes of Energy-Based Devices Heesu Hwang, Jiwon Oh, Na-Eui Kwak, Hyewon Song, Yoon-Mi Nam, and Jin-Ha Hwang <i>Department of Materials Science and Engineering, Hongik University</i>
WP1-222	High-Charge Density Triboelectric Nanogenerator based on 2D Material Jin-Kyeom Kim, Ji Young Park, and Jeong Min Baik <i>School of Advanced Materials Science and Engineering, Sungkyunkwan University</i>
WP1-223	Enhanced Thermoelectric Generator with Non-contact Mode Triboelectric Field Effect by Ion-Injection Sun-Woo Kim and Jeong Min Baik <i>School of Advanced Materials Science and Engineering, Sungkyunkwan University</i>



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Q. Metrology, Inspection, Analysis, and Yield Enhancement

심사위원: 강상우 소장(KRISS), 정용우 TL(SK하이닉스)

WP1-224	<p>Measurement Uncertainty Evaluation Procedure and Application for Real-Time Rotating-Element Spectroscopic Ellipsometers</p> <p>Yong Jai Cho and Won Chegal <i>Semiconductor Integrated Metrology Team, KRISS</i></p>
WP1-225	<p>Orifice Method 기반 터보분자펌프의 핵심 성능평가 플랫폼 개발</p> <p>민병현^{1,2}, 박재서^{1,3}, 문지훈¹, 임종연¹, 신재수², 강상우^{1,3}</p> <p>¹한국표준과학연구원 첨단측정장비연구소, ²대전대학교 신소재공학과, ³과학기술연합대학원대학교 측정과학전공</p>
WP1-226	<p>Detection of Low-Concentration NO₂ Gas from Flexible MoS₂ Nanoflower Gas Sensor</p> <p>Jeongin Song^{1,2}, Jihun Mun¹, Jinwook Baek¹, Hoyeon Park¹, Ha Sul Kim², and Sang-Woo Kang¹</p> <p>¹KRISS, ²Department of Physics, Chonnam National University</p>
WP1-227	<p>진공펌프의 배기성능 측정을 통한 도관의 컨덕턴스 효과 분석</p> <p>송선민^{1,2}, 김준오¹, 제갈원¹, 임종연¹, 신재수², 강상우¹</p> <p>¹한국표준과학연구원, ²대전대학교</p>
WP1-228	<p>Strain Characterization of Si_{1-x}Ge_x in Manufacturing Processes of Si Semiconductor Device</p> <p>Young Min Park¹, Hyun Don Jung¹, Dong Han Kim¹, Dong Hyun Jang¹, Yong Hee Jeon¹, Gyu Hyeong Cho¹, Sung-Jin Chang², Woo Sik Soun², Chil Seong Jeong², Jong-Bum You², Jin Su Kim², Jung Ho Yoo², and Jun-Mo Yang²</p> <p>¹Etamax Co., Ltd., ²NNFC</p>
WP1-229	<p>Contamination Particles and Plasma Corrosion Resistance of APS-Y₂O₃ Coated Parts According to the Various Type of Cleaning Solutions</p> <p>Minjoong Kim^{1,2}, Jongho So^{1,2}, Hyuksung Kwon³, Seon-Jeong Maeng⁴, Chin-Wook Chung¹, and Ju-Young Yun^{2,4}</p> <p>¹Department of Electrical Engineering, Hanyang University, ²Vacuum Materials Measurement Team, KRISS, ³Department of Advanced Materials Engineering, Daejeon University, ⁴Division of Nano & Information Technology, University of Science and Technology</p>
WP1-230	<p>In-situ and ex-situ Particle Measurements of Ceramic Coated Parts in Plasma Chamber</p> <p>Jongho So^{1,2}, Minjoong Kim^{1,2}, Hyuksung Kwon^{2,3}, Seon-Jeong Maeng¹, Chin-Wook Chung¹, and Ju-Young Yun^{2,4}</p> <p>¹Department of Electrical Engineering, Hanyang University, ²Vacuum Materials Measurement Team, KRISS, ³Department of Advanced Materials Engineering, Daejeon University, ⁴Division of Nano & Information Technology, University of Science and Technology</p>
WP1-231	<p>Comparison of Contact Resistance According to Metal Types</p> <p>Min Seong Kim¹, Eun Seong Yu¹, Chan Min Jeong¹, Hyuck Su Lee¹, Seoung Gyun Kim¹, Jong Mo Lee¹, Seo Jin Kang¹, Jae Geun Woo¹, Seung Bae An², and Byung Seong Bae¹</p> <p>¹School of Electronics and Display Engineering, Hoseo University, ²TSE Co., Ltd.</p>



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R. Semiconductor Software

심사위원: 권세진 교수(강원대학교), 이은지 교수(송실대학교)

WP1-232	머신 러닝을 이용한 SSD의 쓰기 버퍼 성능 개선 Hyejin Cha and Taeseok Kim <i>Kwangwoon University</i>
WP1-233	하이브리드 SSD에서 머신러닝을 활용한 SLC 캐시 관리 기법 조희성, 김태석 <i>광운대학교 컴퓨터공학과</i>
WP1-234	NAND Flash Memory를 위한 워크로드 변화에 적응하는 데이터 코드 변환 기법 정관일, 유수원, 현철승, 이동희 <i>서울시립대학교 컴퓨터과학부</i>

T. AI

심사위원: 이성호 센터장(KETI)

WP1-235	국산 NPU 기반 인공지능 추론 서버 시스템 ArtBrain-K 여준기, 신경선, 한진호, 권영수 <i>한국전자통신연구원 지능형반도체연구본부</i>
WP1-236	An Area-Efficient Unit-Computing Block and Dataflow Network Machine for Workload-Scalable Device Donghyeon Yi, Injun Choi, Jongyoon Choi, Hyunwoo Park, and Minkyu Je <i>KAIST</i>
WP1-237	Memory Efficient Neural Architecture Search for Image Classification Amrita Rana and Kyung Ki Kim <i>Department of Electronic Engineering, Daegu University</i>
WP1-238	A Lightweight Detector for Small Objects Akshay Kumar Sharma and Kyung Ki Kim <i>Department of Electronics Engineering, Deagu University</i>



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WP1-239	<p>Solution to Solve Inference Accuracy Degradation Due to Stuck-at-Faults Seung Whan Kim, Ji Seong Im, Byung-Gook Park, and Jong-ho Lee <i>Inter-University Semiconductor Research Center, Seoul National University</i></p>
WP1-240	<p>8*T 차등 SRAM 기반 인-메모리 컴퓨팅 전가산기 송순범, 김영민 <i>홍익대학교 전자전기공학부</i></p>
WP1-241	<p>Design Strategy of Resource-Efficient Post-processing for CNN-Based Object Detection System Seong Bin Choi, Eunchong Lee, Sang-Seol Lee, Sung-Joon Jang, and Byung-Ho Choi <i>KETI</i></p>
WP1-242	<p>NPU 환경에서 효율적인 모델 압축을 위한 통합 Pruning 시스템 연구 곽종훈, 박종희, 김경호, 성민용, 최병호 <i>한국전자기술연구원</i></p>
WP1-243	<p>다중 센서를 활용한 다중 객체 추적 시스템을 위한 행동 트리 모델 연구 박창규, 민경원, 심영보 <i>Mobility Platform Research Center, KETI</i></p>
WP1-244	<p>딥러닝 기반의 생성모델을 통한 영상 인페인팅 알고리즘 예해주, 손행선, 이선영 <i>한국전자기술연구원, 모빌리티플랫폼연구센터</i></p>
WP1-245	<p>Level4 자율주행대응 멀티에이전트 시뮬레이션 SW의 아키텍처 설계 민경원, 박창규, 성기호 <i>한국전자기술연구원, 모빌리티플랫폼연구센터</i></p>
WP1-246	<p>A Study on Vehicle Control Data for Autonomous Vehicle Simulation Youngbo Shim, Se Haengseon Son, and Giho Sung <i>Mobility Platform Research Center, KETI</i></p>
WP1-247	<p>VIL 검증을 지원하기 위한 현실-가상 정보 융합형 자율주행 시뮬레이션 SW의 구조 설계 이선영, 심영보, 박창규 <i>한국전자기술연구원, 모빌리티플랫폼연구센터</i></p>



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U. Bio-Medical

심사위원: 이문구 교수(아주대학교), 박성윤 교수(부산대학교)

WP1-248	<p>A Review of Non-Invasive Glucose Monitoring Devices Vincent Lukito, Donghyun Youn, Ho Yong Seong, and Minkyu Je <i>School of Electrical Engineering, KAIST</i></p>
WP1-249	<p>Current Sensing ROIC for Electrochemical Bio-Sensor with Current Mirror-Based Potentiostat Jun Yeong Yeom and Jae Joon Kim <i>Department of Electrical Engineering, UNIST</i></p>
WP1-250	<p>A Light-to-Digital Converter with 1-st order Noise Shaping Slope for PPG (photoplethysmogram) Application Min Seok Park and Jae Joon Kim <i>School of Electrical Engineering, UNIST</i></p>
WP1-251	<p>연속 혈당 측정 시스템을 위한 High-Q 다중 루프 자기 공진기 개발 연구 Sion You, Franklin Bien, and Gang-il Byun <i>UNIST</i></p>
WP1-252	<p>Deep Brain Stimulation for Treating Depression and Anxiety Disorder Dongyeob Ra, Hyungjoo Cho, Daehyeon Kwon, Taeju Lee, and Minkyu Je <i>School of Electrical Engineering, KAIST</i></p>
WP1-253	<p>A Chopper Stabilized Capacitive Coupled Instrumentation Amplifier with Auxiliary Path Impedance Boosting Technique for Bio-Signal Acquisition Hyunjoong Kim and Jae Joon Kim <i>Department of Electrical Engineering, UNIST</i></p>