



# 제 30회 한국반도체학술대회

The 30th Korean Conference on Semiconductors

2023년 2월 13일(월) ~ 15일(수) | 강원도 하이원리조트(그랜드호텔 컨벤션타워)

2023년 2월 14일(화), 16:10-17:50

하이원 그랜드호텔(컨벤션타워), 메인로비 (5층)

## [TP1] 포스터 세션 1

### A. Interconnect & Package

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

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



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



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



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## B. Patterning (Lithography & Etch Technology)

심사위원: 이진균 교수(인하대학교)

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



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



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



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## H. Display and Imaging Technologies

심사위원: 박동욱 교수(서울시립대학교), 안지훈 교수(한양대학교)

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





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





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TP1-058	<b>Design of Facile Doping Process Using ALD-derived Gate-Stack Structures for High-Performance Self-Aligned Coplanar IGZO Thin Film Transistors</b> Seo-Hyun Moon <sup>1</sup> , Young-Ha Kwon <sup>2</sup> , Nak-Jin Seong <sup>2</sup> , Kyu-Jeong Choi <sup>2</sup> , and Sung-Min Yoon <sup>1</sup> <sup>1</sup> Kyung Hee University, <sup>2</sup> NCD Co., Ltd.
TP1-059	<b>Leakage Prevention Scan Driver Using Double-Gate Structure of Oxide TFT</b> Eunho Kim, Hwarim Im, and Yong-Sang Kim <i>Department of Electrical and Computer Engineering, Sungkyunkwan University</i>
TP1-060	<b>A New Pixel Circuit with a Low-Temperature Polycrystalline Oxide Thin-Film Transistor for Portable Displays</b> Yan Li, Eun Kyo Jung, Hwarim Im, and Yong-Sang Kim <i>Department of Electrical and Computer Engineering, Sungkyunkwan University</i>
TP1-061	<b>MXene-Derived 2D V<sub>2</sub>O<sub>5</sub> Nanosheet for High Performance Multicolor Electrochromic Device</b> Jin Kim <sup>1</sup> , Kyo Haeng Lee <sup>1,3</sup> , Sukki Lee <sup>2</sup> , Seoungyoung Park <sup>1</sup> , Haomin Chen <sup>2</sup> , Soonmin Yim <sup>1</sup> , Wooseok Song <sup>1</sup> , Sun Sook Lee <sup>1</sup> , Dae Ho Yoon <sup>3</sup> , Seokwoo Jeon <sup>2</sup> , and Ki-Seok An <sup>1</sup> <sup>1</sup> KRICT, <sup>2</sup> KAIST, <sup>3</sup> Sungkyunkwan University
TP1-062	<b>Radiation Robust Oxide-TFT-Based Complementary Logic Circuits</b> Hyun-Ah Lee <sup>1</sup> , Kie Yatsu <sup>1</sup> , Chae-Eun Oh <sup>1</sup> , Ick-Joon Park <sup>2</sup> , and Hyuck-In Kwon <sup>1</sup> <sup>1</sup> Chung-Ang University, <sup>2</sup> Joongbu University
TP1-063	<b>Implementation of Ambipolar Tin Oxide Thin-Film Transistors Using Hydrogen Plasma Treatment</b> Seung-Hyun Lim <sup>1</sup> , Kang-Hwan Bae <sup>1</sup> , Jong-Sang Oh <sup>1</sup> , Ick-Joon Park <sup>2</sup> , and Hyuck-In Kwon <sup>1</sup> <sup>1</sup> Chung-Ang University, <sup>2</sup> Joongbu University
TP1-064	<b>Effects of Rapid Thermal Annealing Temperature on p-type NO<sub>2</sub> Gas Sensing Properties of RF Sputtered Tin Oxide Thin Films</b> Seung-Hyun Lim <sup>1</sup> , Jong-Sang Oh <sup>1</sup> , Ick-Joon Park <sup>2</sup> , and Hyuck-In Kwon <sup>1</sup> <sup>1</sup> Chung-Ang University, <sup>2</sup> Joongbu University
TP1-065	<b>Controllable Performance on Nano-laminated (InOx)<sub>n</sub>(GaZnOy)<sub>m</sub> TFT via PEALD</b> Gyeong-min Jeong, Won-Bum Lee, and Jin Seong Park <i>Division of Materials Science and Engineering, Hanyang University</i>
TP1-066	<b>Determination of Interface and Bulk Trap Densities in TG-SA Coplanar IGZO TFTs Using Low-Frequency C-V and SCLC Techniques</b> Dong-Ho Lee, Chae-Eun Oh, Su-Hyeon Lee, Yeong-Gil Kim, Ye-Lim Han, and Hyuck-In Kwon <i>School of Electrical and Electronics Engineering, Chung-Ang University</i>



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



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## I. MEMS & Sensors Systems

심사위원: 박윤석 교수(경희대학교), 심교승 교수(UNIST)

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



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TP1-080	<b>ZnO/Graphene Hybrid Thin Film for CO<sub>2</sub> Gas Sensing Application</b> June Soo Kim, Soon Yeol Kwon, Seung Deok Kim, Jae Yong Lee, Maeum Han, Da Ye Kim, Hyunjun Kim, Noah Jang, and Seong Ho Kong <i>School of Electronic and Electrical Engineering, Kyungpook National University</i>
TP1-081	<b>Modulation of p-SnO Thin-Film Transistor Electrical Characteristics by Controlling the Al<sub>2</sub>O<sub>3</sub> Interfacial Layer Annealing Temperature</b> Sahng Ik Mun <sup>1,2</sup> , Yong Hee Lee <sup>1,2</sup> , Suk In Kang <sup>1,2</sup> , Jin Heon Choi <sup>1,2</sup> , Sun Jin Lee <sup>1,2</sup> , and Cheol Seong Hwang <sup>1,2</sup> <sup>1</sup> Department of Materials Science and Engineering, Seoul National University, <sup>2</sup> Inter-university Semiconductor Research Center, Seoul National University
TP1-082	<b>Detecting Binding Affinity of Mismatch DNA Using Microparticles Observed in DEP System</b> Gyeong Jun Min, Kang In Yeo, and Sang Woo Lee <i>Department of Biomedical Engineering, Yonsei University</i>
TP1-083	<b>High-Performance Dopamine-Sensitive Biosensor Platform based on Extended Gate Field-Effect Transistor with Dual-Gate Structure on SOI Substrate</b> Tae-Hwan Hyun and Won-Ju Cho <i>Department of Electronic Materials Engineering, Kwangwoon University</i>
TP1-084	<b>실리콘 나노와이어 기반 초소형 소프트 압력센서 공정 개발</b> 김태엽 <sup>1,3,4</sup> , 박정현 <sup>2,3,4</sup> , 조동일 <sup>1,2,3,4</sup> <sup>1</sup> 서울대학교 전기정보공학부, <sup>2</sup> 서울대학교 바이오엔지니어링, <sup>3</sup> 서울대학교 자동화시스템 공동연구소, <sup>4</sup> 서울대학교 반도체공동연구소
TP1-085	<b>Improvement of Tesla Valve Performance Using Obstacle for Fixed-Valve Application</b> Hyunjun Kim, Maeum Han, Soon Yeol Kwon, Jae Yong Lee, Seung Deok Kim, June Soo Kim, Noah Jang, Jiajie Wang, Da Ye Kim, and Seong Ho Kong <i>School of Electronic and Electrical Engineering, Kyungpook National University</i>
TP1-086	<b>High-Throughput Multi-channel Microfluidic Resistive Pulse Sensing for Micron Analysis</b> Da Ye Kim, Soon Yeol Kwon, Seung Deok Kim, Jae Yong Lee, June Soo Kim, Maeum Han, Hyunjun Kim, Noah Jang, Adeeba Mansoor, and Seong Ho Kong <i>School of Electronic and Electrical Engineering, Kyungpook National University</i>
TP1-088	<b>Effects of Annealing Conditions on NO<sub>2</sub> Gas Response and Optimal Operating Temperature in Resistor-Type Gas Sensors</b> Hunhee Shin <sup>1,2</sup> , Gyuweon Jung <sup>1,2</sup> , Seongbin Hong <sup>1,2</sup> , Yujeong Jeong <sup>1,2</sup> , Wonjun Shin <sup>1,2</sup> , Jinwoo Park <sup>1,2</sup> , Donghee Kim <sup>1,2</sup> , Kangwook Choi <sup>1,2</sup> , Jae-Joon Kim <sup>1,2</sup> , and Jong-Ho Lee <sup>1,2</sup> <sup>1</sup> Department of Electrical and Computer Engineering, Seoul National University, <sup>2</sup> Inter-university Semiconductor Research Center, Seoul National University
TP1-089	<b>NO<sub>2</sub> Gas Sensing Properties of FET-type Gas Sensor with Poly-Si Used as an Embedded Micro-heater and Control-gate</b> Jinwoo Park <sup>1,2</sup> , Seongbin Hong <sup>1,2</sup> , Yujeong Jeong <sup>1,2</sup> , Gyuweon Jung <sup>1,2</sup> , Wonjun Shin <sup>1,2</sup> , Chayoung Lee <sup>1,2</sup> , Donghee Kim <sup>1,2</sup> , Kangwook Choi <sup>1,2</sup> , Hunhee Shin <sup>1,2</sup> , Jae-Joon Kim <sup>1,2</sup> , and Jong-Ho Lee <sup>1,2</sup> <sup>1</sup> Department of Electrical and Computer Engineering, Seoul National University, <sup>2</sup> Inter-university Semiconductor Research Center, Seoul National University



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



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



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## N. VLSI CAD

심사위원: 송대건 교수(경북대학교), 강석형 교수(POSTECH)

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





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



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## R. Semiconductor Software

심사위원: 권세진 교수(강원대학교), 김영재 교수(서강대학교)

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



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## S. Chip Design Contest

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

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



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



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



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



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





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



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



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