



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), 연한을 교수(광주과학기술원)

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



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TP1-008	<p>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</p> <p>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></p>
TP1-009	<p>Study on Growth Characteristics and Film Qualities of Atomic Layer Deposition TiSiO_x for Multi-Patterning Process</p> <p>Sanghun Lee¹, Seunggi Seo¹, Wontae Noh^{2,3}, Il-Kwon Oh⁴, and Hyungjun Kim¹ <i>¹School of Electrical and Electronic Engineering, Yonsei University, ²Air Liquide Korea Co., ³Yonsei University, ⁴Department of Electrical and Computer Engineering, Ajou University</i></p>
TP1-010	<p>Study on the Interlayer Formation of ZrO₂ Thin Films by Atomic Layer Deposition on Electrodes for DRAM Applications</p> <p>Heungsik Shin¹, Seongyeong Park¹, Seunggyu Na¹, Yujin Lee², Seung-min Chung¹, and Hyungjun Kim¹ <i>¹School of Electrical and Electronic Engineering, Yonsei University, ²Department of Chemical Engineering, Stanford University</i></p>
TP1-011	<p>Copper Core Solder Ball 반도체 패키지 접합 소재 신뢰성 평가</p> <p>마병진¹, 손재열², 이영우², 이슬기², 송재현², 정태희¹, 최성순¹, 이관훈¹ <i>¹한국전자기술연구원, ²엠케이전자(주)</i></p>
TP1-012	<p>Thermal and Electrical Effects Dependence of Electromigration Reliability of Ruthenium and Molybdenum for Semiconductor Interconnects</p> <p>Jungkyun Kim, Hakseung Rhee, and Kyung Min Kim <i>KAIST</i></p>
TP1-013	<p>Improvement on Mechanical Properties of Cu-Cu Bonding with Porous Cu</p> <p>Kyung Deuk Min, Jun-Ho Jang, and Seung-Boo Jung <i>School of Advanced Materials Science and Engineering, Sungkyunkwan University</i></p>
TP1-014	<p>Mechanical Reliability Improvement of Cu-Mn Interconnect for Flexible Electronics through Self-forming Process</p> <p>Jae-Myeong Shin¹, Seongi Lee², Won-Jun Lee³, Seung-Hyeok Lee¹, Ju-Won Jun¹, Young-Chang Joo², and Byoung-Joon Kim¹ <i>¹Department of Advanced Materials Engineering, Tech University of Korea, ²Department of Materials Science and Engineering, Seoul National University, ³Department of Nanotechnology and Advanced Materials Engineering, Sejong University</i></p>
TP1-015	<p>Stretchable Biodegradable Polyurethane as a Substrate Materials for Stretchable Electronics</p> <p>Jun Hyeon Lim, Won Bae Han, and Suk-Won Hwang <i>KU-KIST Graduate School of Converging Science and Technology, Korea University</i></p>
TP1-016	<p>구리-알루미늄 합금을 통한 유연소자 금속 배선의 피로 저항성 향상 메커니즘 규명</p> <p>현준혁¹, 이선기², 신상하¹, 김은정¹, 이소연¹, 주영창² <i>¹금오공과대학교 신소재공학부, ²서울대학교 재료공학부</i></p>



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TP1-017	Extraction of the Sheet Resistance under Metal Contact and Its Effect on the Specific Contact Resistance via the Bridge Contact Resistance Method Jiyeong Yun and Hongsik Park <i>School of Electronic and Electrical Engineering, Kyungpook National University</i>
TP1-018	Finite Element Analysis of Thermomechanical Stress in Passivation Dielectrics on Ultra Thick Metal Line Seung-Ho Seo ¹ , So-Yeon Park ² , and Won-Jun Lee ² <i>¹R&D Team, GO Element Co., Ltd., ²Department of Nanotechnology and Advanced Materials Engineering, Sejong University</i>
TP1-019	Effects of Plasma Treatment on Cu-SiO₂ Hybrid Bonding In-joo Kim ¹ , Hyeok-Jin Chu ¹ , Siye Lee ² , Woo Kyung Lee ² , and Sungdong Kim ² <i>¹Department of Mechanical Design and Robot Engineering, Seoul National University of Science and Technology, ²Department 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	<p>High Aspect Ratio SiO₂ Contact Hole Etching Using Low-GWP Materials Sanghyun You^{1,2} and Chang-Koo Kim^{1,2} ¹Department of Chemical Engineering, Ajou University, ²Department of Energy Systems Research, Ajou University</p>
TP1-021	<p>EUV 펠리클 주름이 반사도 변화와 패턴 임계치수에 미치는 영향 연구 문승찬^{1,3}, 이동기^{2,3}, 최진혁^{1,3}, 안진호^{1,2,3} ¹한양대학교 나노반도체공학과, ²한양대학교 신소재공학과, ³EUV-IUCC (Industry University Collaboration Center)</p>
TP1-022	<p>EUV 펠리클 적용을 위한 ZrSi₂ 박막 특성 연구 강영우^{1,2}, 위성주^{1,2}, 김하늘^{1,2}, 김원진^{1,2}, 김정연^{1,2}, 안진호^{1,2} ¹한양대학교 신소재공학과, ²EUV-IUCC (Industry University Collaboration Center)</p>
TP1-023	<p>SiN_x Passivation Layer가 EUV 펠리클 방사 효율에 미치는 영향 김원진^{1,2}, 김하늘^{1,2}, 김정연^{1,2}, 안진호^{1,2} ¹한양대학교 신소재공학과, ²EUV-IUCC (Industry University Collaboration Center)</p>
TP1-024	<p>High-NA EUV용 Pt 기반 마스크 흡수 소재 연구 김연수^{1,3}, 정동민^{1,2,3}, 조민선^{2,3}, 안진호^{1,2,3} ¹한양대학교 신소재공학과, ²한양대학교 나노반도체공학과, ³EUV-IUCC (Industry University Collaboration Center)</p>
TP1-025	<p>EUV 마스크 소재의 굴절계수 및 흡광계수 측정 방법 및 장치 이동기^{1,3}, 문승찬^{2,3}, 최진혁^{2,3}, 안진호^{1,2,3} ¹한양대학교 신소재공학과, ²한양대학교 나노반도체공학과, ³EUV-IUCC (Industry University Collaboration Center)</p>
TP1-026	<p>Spin Coating Hard Mask를 활용한 SADP(Self-Aligned Double Patterning) 방법 Min Jun Bak^{1,2}, Jung Chul Song^{1,2}, and Shin Jae You² ¹NNFC, ²Chungnam National University</p>
TP1-027	<p>Fabrication of Platinum Nanodots Using Plasma-Assisted Solid-State Dewetting Jinseok Choi, Jung Hyung Kim, and Hyo-Chang Lee KRISS</p>



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TP1-028	Mechanism of Photopatternable PEDOT:PSS and Its Use in Stretchable Touch Sensor Soon Joo Yoon ¹ , Soojeong Song ² , Jeongdae Ha ² , Kyung-In Jang ² , and Yoon Kyeong Lee ¹ ¹ Division of Advanced Materials Engineering, Jeonbuk National University, ² Department of Robotics Engineering, DGIST
TP1-029	OLED 화소 형성을 위한 불소화 포토레지스트 개발 김가영 ¹ , 박춘희 ² , 최효은 ¹ , 최유민 ³ , 정병준 ³ , 이진균 ^{1,2} ¹ Program in Environment and Polymer Engineering, Inha University, ² Department of Polymer Science and Engineering, Inha University, ³ Department of Materials Science and Engineering, University of Seoul
TP1-030	500nm-Line Etching of Cobalt Thin Films Using Organic Gas Seon Jae Kim, Sung Yong Park, Seung Hyun Kim, Kyung Ho Oh, Su Myung Ha, and Chee Won Chung Department of Chemical Engineering, Inha University
TP1-031	Iohexol-Based Compounds for Extreme UV Sensitizer in Chemically Amplified Resist System Yejin Ku ¹ , Han Bit Park ² , Gyu Chan Wie ¹ , Jin-Kyun Lee ^{1,2} , Jeongsik Kim ³ , Myounghyun Hur ³ , and Jaehyun Kim ³ ¹ Department of Polymer Science and Engineering, Inha University, ² Program in Environmental and Polymer Engineering, Inha University, ³ Dongjin Semichem Co., Ltd.
TP1-032	Fluoroalkylated Tin-oxo Ladder Compounds as Photoresist Candidates for Extreme UV Lithography Min Seung Kim ¹ , Ye Jin Ku ¹ , Ji Hun Woo ¹ , Sangsul Lee ² , Byung Jun Jung ³ , and Jin-Kyun Lee ¹ ¹ Program in Environment and Polymer Engineering, Inha University, ² Pohang Accelerator Laboratory, POSTECH, ³ Department of Materials Science and Engineering, University of Seoul
TP1-033	Atomic Layer Etching of Zirconium Oxide Using Plasma Fluorination and Ligand Exchange with Titanium Chloride Hyeongwu Lee ¹ , Yongjae Kim ¹ , and Heeyeop Chae ^{1,2} ¹ SKKU Advanced Institute of Nanotechnology, Sungkyunkwan University, ² School of Chemical Engineering, Sungkyunkwan University
TP1-035	알파상 산화갈륨의 역-금속 촉매 습식 식각 Woong Choi ¹ , Dong Ryul Lee ² , and Ji Hyun Kim ¹ ¹ School of Chemical and Biological Engineering, Seoul National University, ² Department of Chemical and Biological Engineering, Korea University
TP1-037	Hierarchical Self-Assembly of Block Copolymers and PS Colloids for Transparent and Sensitive Gas Sensor Platform Geon Gug Yang, Il-doo Kim, and Sang Ouk Kim Department of Materials Science and Engineering, KAIST
TP1-038	SiO₂ Etch Rate in Plasma Etching of SiO₂ with Temperature Hee-Tae Kwon, Ji-Hwan Kim, In-Young Bang, Sun-Hee Lee, Jae-Hyun Kim, Gi-Won Shin, Woo-Jae Kim, and Gi-Chung Kwon Department of Electrical and Biological Physics, Kwangwoon University



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TP1-039	Effective Wet Cleaning for Removal of Redeposited Materials on Dry-etched Copper Thin Films Geum Bin Baek, Seung Hyun Kim, Yoon Jae Cho, and Chee Won Chung <i>Department of Chemical Engineering, Inha University</i>
TP1-040	Etching Mechanism of Amorphous Hydrogenated Silicon Nitride Using Hydrogen Fluoride Khabib Khumaini ^{1,2} , Yewon Kim ¹ , Tanzia Chowdhury ¹ , Hye-Lee Kim ³ , and Won-Jun Lee ^{1,3} <i>¹Department of Nanotechnology and Advanced Materials Engineering, Sejong University,</i> <i>²Universitas Pertamina, ³Metal-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	Electrovibration Tactile Layer for Stretchable Touch Display Beom Hee Park and Yei Hwan Jung <i>Department of Electronic Engineering, Hanyang University</i>
TP1-042	Transfer Printing Technology on 3D Curved Surface Using PVA Stamp Jun Hee Lee and Yei Hwan Jung <i>Department of Semiconductor Display Technology, Hanyang University</i>
TP1-043	Efficient and Stable InP Quantum Dot Light-Emitting Diode via Hole Transport Material Mixed Emissive Layer Ganghyun Park ^{1,2,3} and Jeonghun Kwak ^{1,2,3} <i>¹Department of Electrical and Computer Engineering, Seoul National University, ²Inter-university Semiconductor Research Center, Seoul National University, ³Soft Foundry Institute, Seoul National University</i>
TP1-044	A Comparative Study of Zr Precursor for Application to High-k Gate Insulator of the Next Generation Thin Film Transistor Using Atomic Layer Deposition Min Kyeong Nam ^{1,2} , Aejin Lee ^{1,2} , Dong Hee Han ^{1,2} , Seungwoo Lee ^{1,2} , and Woojin Jeon ^{1,2} <i>¹Department of Advanced Materials Engineering for Information and Electronics, Kyung Hee University, ²Integrated Education Program for Frontier Science and Technology (BK21 Four), Kyung Hee University</i>
TP1-045	Solution Processed High Performance ZnO/Quantum Dots Phototransistor via ZrO₂ Additional Layer for Visible Light Color Selective Image Sensor Jun Hyung Jeong ^{1,2} , Seong Jae Kang ^{1,2} , and Seong Jun Kang ^{1,2} <i>¹Department of Advanced Materials Engineering for Information and Electronics, Kyung Hee University, ²Integrated Education Program for Frontier Science and Technology (BK21 Four), Kyung Hee University</i>
TP1-046	Controllable CdSe/ZnS Thin Film through Layer-by-layer Deposition based on Spray Coating Method Min Gye Kim ^{1,2} , Jin Hyun Ma ^{1,2} , Min Ho Park ^{1,2} , and Seong Jun Kang ^{1,2} <i>¹Department of Advanced Materials Engineering for Information and Electronics, Kyung Hee University, ²Integrated Education Program for Frontier Science and Technology (BK21 Four), Kyung Hee University</i>
TP1-047	Resistance Modulation of Surfactant-Modified PEDOT:PSS by Selective Irradiation of Ultraviolet for Patterned Transparent Conductive Electrodes Hwaeun Park ^{1,2} , Sujin Jeong ^{1,2} , Hyungsoo Yoon ^{1,2} , Dahyun Kim ^{1,2} , and Yongtaek Hong ^{1,2} <i>¹Department of Electrical and Computer Engineering, Seoul National University, ²Inter-university Semiconductor Research Center, Seoul National University</i>
TP1-048	Evaluation of Contact Resistance Measurement Methods in Solution-Processed Carbon Nanotube Thin-Film Transistors Min Kyun Kang ^{1,2} , Hyunjun Yoo ^{1,2} , and Yongtaek Hong ^{1,2} <i>¹Department of Electrical and Computer Engineering, Seoul National University, ²Inter-university Semiconductor Research Center, Seoul National University</i>



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



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TP1-058	Design of Facile Doping Process Using ALD-derived Gate-Stack Structures for High-Performance Self-Aligned Coplanar IGZO Thin Film Transistors Seo-Hyun Moon ¹ , Young-Ha Kwon ² , Nak-Jin Seong ² , Kyu-Jeong Choi ² , and Sung-Min Yoon ¹ <i>¹Kyung Hee University, ²NCD Co., Ltd.</i>
TP1-059	Leakage Prevention Scan Driver Using Double-Gate Structure of Oxide TFT Eunho Kim, Hwarim Im, and Yong-Sang Kim <i>Department of Electrical and Computer Engineering, Sungkyunkwan University</i>
TP1-060	A New Pixel Circuit with a Low-Temperature Polycrystalline Oxide Thin-Film Transistor for Portable Displays Yan Li, Eun Kyo Jung, Hwarim Im, and Yong-Sang Kim <i>Department of Electrical and Computer Engineering, Sungkyunkwan University</i>
TP1-061	MXene-Derived 2D V₂O₅ Nanosheet for High Performance Multicolor Electrochromic Device Jin Kim ¹ , Kyo Haeng Lee ^{1,3} , Sukki Lee ² , Seoungyoung Park ¹ , Haomin Chen ² , Soonmin Yim ¹ , Wooseok Song ¹ , Sun Sook Lee ¹ , Dae Ho Yoon ³ , Seokwoo Jeon ² , and Ki-Seok An ¹ <i>¹KRICT, ²KAIST, ³Sungkyunkwan University</i>
TP1-062	Radiation Robust Oxide-TFT-Based Complementary Logic Circuits Hyun-Ah Lee ¹ , Kie Yatsu ¹ , Chae-Eun Oh ¹ , Ick-Joon Park ² , and Hyuck-In Kwon ¹ <i>¹Chung-Ang University, ²Joongbu University</i>
TP1-063	Implementation of Ambipolar Tin Oxide Thin-Film Transistors Using Hydrogen Plasma Treatment Seung-Hyun Lim ¹ , Kang-Hwan Bae ¹ , Jong-Sang Oh ¹ , Ick-Joon Park ² , and Hyuck-In Kwon ¹ <i>¹Chung-Ang University, ²Joongbu University</i>
TP1-064	Effects of Rapid Thermal Annealing Temperature on p-type NO₂ Gas Sensing Properties of RF Sputtered Tin Oxide Thin Films Seung-Hyun Lim ¹ , Jong-Sang Oh ¹ , Ick-Joon Park ² , and Hyuck-In Kwon ¹ <i>¹Chung-Ang University, ²Joongbu University</i>
TP1-065	Controllable Performance on Nano-laminated (InOx)_n(GaZnOy)_m TFT via PEALD Gyeong-min Jeong, Won-Bum Lee, and Jin Seong Park <i>Division of Materials Science and Engineering, Hanyang University</i>
TP1-066	Determination of Interface and Bulk Trap Densities in TG-SA Coplanar IGZO TFTs Using Low-Frequency C-V and SCLC Techniques Dong-Ho Lee, Chae-Eun Oh, Su-Hyeon Lee, Yeong-Gil Kim, Ye-Lim Han, and Hyuck-In Kwon <i>School of Electrical and Electronics Engineering, Chung-Ang University</i>



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TP1-067	DPP-DTT Channel Organic Thin-Film Transistors Fabricated on a Parylene-C Substrate Yoojeong Ko, Hyo-Won Jang, KyungMin Kim, Dong-Wook Park, and Hyeok Kim <i>School of Electrical and Computer Engineering, University of Seoul</i>
TP1-068	Thin-film Encapsulation for Top-emission Polymer Light-emitting Diodes with Solution-processed Encapsulation Dahyun Kim ^{1,2} , Sujin Jeong ^{1,2} , Hyungsoo Yoon ^{1,2} , and Yongtaek Hong ^{1,2} ¹ <i>Department of Electrical and Computer Engineering, Seoul National University, </i> ² <i>Inter-university Semiconductor Research Center, Seoul National University</i>
TP1-069	MLD Thin Film with Surface Modification and Hydrogen Permeability Control through Plasma Treatment Gi-Beom Park, Tae-yeon Kim, GeonHo Baek, and Jin-Seong Park <i>Division of Materials Science and Engineering, Hanyang University</i>
TP1-070	Achieving of Ultra-Low Power InGaZnO Thin-Film Transistor by Using Triple-Layer Stacked of High-k Dielectrics Cheol Hee Choi, Seong Hun Yoon, Sang Won Chung, and Jae Kyeong Jeong <i>Department of Electronic Engineering, Hanyang University</i>
TP1-071	TiO_x Insertion Effects on Reliable Resistive Switching for IGZO/ZrO₂ Bilayered Resistive Random Access Memory (RRAM) Device 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>Charge Trap Based Threshold Modulative Artificial GABAergic Nociceptor</p> <p>Geunyoung Kim and Kyung Min Kim <i>Department of Materials Science and Engineering, KAIST</i></p>
TP1-074	<p>Micro-heater Designs for Wireless Electronic Devices</p> <p>Sangho Park and Gunchul Shin <i>School of Materials Science and Engineering, University of Ulsan</i></p>
TP1-075	<p>FET-type Chemiresistive Hydrogen Sensor Using Single Walled Carbon Nanotubes</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>A Highly Sensitive Biosensor Modified with Optimized Nanostructures for Alzheimer's Disease Biomarker Detection in Human Samples</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>Gasistor Array-Based Intelligent NO Gas Monitoring System</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>Self-Sensitivity Programmable pH Sensor Platform based on Multi-Functional Charge-Trap-Flash-Type Ion-Sensitive-Field-Effect-Transistor</p> <p>Yeong-Ung Kim and Won-Ju Cho <i>Department of Electronic Materials Engineering, Kwangwoon University</i></p>
TP1-079	<p>High Performance Humidity Sensor based on Biomaterial</p> <p>Maryam Khan and Woo Young Kim <i>Department of Electronic Engineering, Jeju National University</i></p>



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TP1-080	ZnO/Graphene Hybrid Thin Film for CO₂ Gas Sensing Application June Soo Kim, Soon Yeol Kwon, Seung Deok Kim, Jae Yong Lee, Maeum Han, Da Ye Kim, Hyunjun Kim, Noah Jang, and Seong Ho Kong <i>School of Electronic and Electrical Engineering, Kyungpook National University</i>
TP1-081	Modulation of p-SnO Thin-Film Transistor Electrical Characteristics by Controlling the Al₂O₃ Interfacial Layer Annealing Temperature Sahng Ik Mun ^{1,2} , Yong Hee Lee ^{1,2} , Suk In Kang ^{1,2} , Jin Heon Choi ^{1,2} , Sun Jin Lee ^{1,2} , and Cheol Seong Hwang ^{1,2} ¹ <i>Department of Materials Science and Engineering, Seoul National University, </i> ² <i>Inter-university Semiconductor Research Center, Seoul National University</i>
TP1-082	Detecting Binding Affinity of Mismatch DNA Using Microparticles Observed in DEP System Gyeong Jun Min, Kang In Yeo, and Sang Woo Lee <i>Department of Biomedical Engineering, Yonsei University</i>
TP1-083	High-Performance Dopamine-Sensitive Biosensor Platform based on Extended Gate Field-Effect Transistor with Dual-Gate Structure on SOI Substrate Tae-Hwan Hyun and Won-Ju Cho <i>Department of Electronic Materials Engineering, Kwangwoon University</i>
TP1-084	실리콘 나노와이어 기반 초소형 소프트 압력센서 공정 개발 김태엽 ^{1,3,4} , 박정현 ^{2,3,4} , 조동일 ^{1,2,3,4} ¹ <i>서울대학교 전기정보공학부, </i> ² <i>서울대학교 바이오엔지니어링, </i> ³ <i>서울대학교 자동화시스템 공동연구소, </i> ⁴ <i>서울대학교 반도체공동연구소</i>
TP1-085	Improvement of Tesla Valve Performance Using Obstacle for Fixed-Valve Application Hyunjun Kim, Maeum Han, Soon Yeol Kwon, Jae Yong Lee, Seung Deok Kim, June Soo Kim, Noah Jang, Jiajie Wang, Da Ye Kim, and Seong Ho Kong <i>School of Electronic and Electrical Engineering, Kyungpook National University</i>
TP1-086	High-Throughput Multi-channel Microfluidic Resistive Pulse Sensing for Micron Analysis Da Ye Kim, Soon Yeol Kwon, Seung Deok Kim, Jae Yong Lee, June Soo Kim, Maeum Han, Hyunjun Kim, Noah Jang, Adeeba Mansoor, and Seong Ho Kong <i>School of Electronic and Electrical Engineering, Kyungpook National University</i>
TP1-088	Effects of Annealing Conditions on NO₂ Gas Response and Optimal Operating Temperature in Resistor-Type Gas Sensors Hunhee Shin ^{1,2} , Gyuweon Jung ^{1,2} , Seongbin Hong ^{1,2} , Yujeong Jeong ^{1,2} , Wonjun Shin ^{1,2} , Jinwoo Park ^{1,2} , Donghee Kim ^{1,2} , Kangwook Choi ^{1,2} , Jae-Joon Kim ^{1,2} , and Jong-Ho Lee ^{1,2} ¹ <i>Department of Electrical and Computer Engineering, Seoul National University, </i> ² <i>Inter-university Semiconductor Research Center, Seoul National University</i>
TP1-089	NO₂ Gas Sensing Properties of FET-type Gas Sensor with Poly-Si Used as an Embedded Micro-heater and Control-gate Jinwoo Park ^{1,2} , Seongbin Hong ^{1,2} , Yujeong Jeong ^{1,2} , Gyuweon Jung ^{1,2} , Wonjun Shin ^{1,2} , Chayoung Lee ^{1,2} , Donghee Kim ^{1,2} , Kangwook Choi ^{1,2} , Hunhee Shin ^{1,2} , Jae-Joon Kim ^{1,2} , and Jong-Ho Lee ^{1,2} ¹ <i>Department of Electrical and Computer Engineering, Seoul National University, </i> ² <i>Inter-university Semiconductor Research Center, Seoul National University</i>



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TP1-090	DNN Assisted Epidermal Piezoresistive Sensor for Multimodal Sensing and Inference Jihwan Kim, Jeong Woo Chae, Byeong Woon Lee, and Sang Min Won <i>Sungkyunkwan University</i>
TP1-091	Machine Learning Enhanced Predictive Gas Sensor for Identifying Specific Analytes from Mixed Environment Garam Bae, Wooseok Song, and Ki-Seok An <i>Thin Film Materials Research Center, KRICT</i>
TP1-092	Junctionless Field Effect Transistor Based CO₂ Gas Sensor Inkyum Kim ^{1,2} and Daewon Kim ^{2,3} ¹ <i>Department of Electronics and Information Convergence Engineering, Kyung Hee University,</i> ² <i>Institute for Wearable Convergence Electronics, Kyung Hee University,</i> ³ <i>Department of Electronic Engineering, Kyung Hee University</i>
TP1-093	Ultra-flexible Organic Photoplethysmography (PPG) Sensors Integrated with Optical Waveguide for Real-time Monitoring of Driver's Health Condition Jaehyun Kim and Sungjun Park <i>Department of Electrical and Computer Engineering, Ajou University</i>
TP1-094	코르티졸 센싱을 위한 Parylene-C 기반 압타머 전극 개발 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	TCAD Simulation of a Single-unit Rectifying Triboelectric Tactile Sensor Hyunwoo Cho ^{1,3} and Daewon Kim ^{2,3} ¹ <i>Department of Electronics and Information Convergence Engineering, Kyung Hee University,</i> ² <i>Department of Electronic Engineering, Kyung Hee University,</i> ³ <i>Institute for Wearable Convergence Electronics, Kyung Hee University</i>
TP1-096	Multifunctional Optoelectronic Logic Gate by Using Layered Perovskite Photodiode Woochul Kim ¹ , Hyeonghun Kim ² , and Yusin Pak ¹ ¹ <i>Sensor System Research Center, KIST,</i> ² <i>Ceramic Total Solution Center, KICET</i>
TP1-097	A Flexible and Stretchable Capacitive Micromachined Ultrasonic Transducer with Wafer-scaled Trench Fabrication Hae Youn Kim ¹ , Dong-Hyun Kang ¹ , ShinYong Shim ¹ , Butrus T. Khuri-Yakub ² , and Byung Chul Lee ¹ ¹ <i>Bioinics Research Center, KIST,</i> ² <i>Department of Electrical Engineering, Stanford University</i>
TP1-098	Investigation of Electrical Performance of Transistor with Additional Dielectric Layer for Trapped Triboelectric Charges Jonghyeon Yun ¹ and Daewon Kim ² ¹ <i>Department of Electronics and Information Convergence Engineering, Kyung Hee University,</i> ² <i>Department of Electronic Engineering, Kyung Hee University</i>



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TP1-099	Performance Enhancement ZnO Pressure Sensor Stacking Ferroelectric Layer Do Yeon Lee, Woon San Go, Ki Nam Kim, Jun Ho Byun, Eun Gi Kim, Eun A Koo, So Yeon Gwon, and Ga Won Lee <i>Chungnam National University</i>
TP1-100	하이브리드 Schottky-Ohmic 후면전극을 통한 실리콘 모래시계 나노선 포토다이오드의 광검출 특성 향상 연구 오세인 ¹ , 김현규 ¹ , 윤봉노 ¹ , 남은서 ² , 배학열 ^{1,2} , 김기현 ^{1,2} <i>¹전북대학교 전자정보공학부, ²전북대학교 전자공학부</i>
TP1-101	온도 변화에 따른 특성 보정을 위한 단일 칩 온도 센서 Je Hyeok Yu and Jung-Hoon Chun <i>Department of Semiconductor and Display Engineering, Sungkyunkwan University</i>
TP1-102	Real-Time Volumetric Ultrasound Imaging Using Annular Capacitive Micro-Machined Ultrasonic Transducer Young Seok Kwon ^{1,2} , Hae Youn Kim ¹ , Dong-Hyun Kang ¹ , Dong Hun Kim ¹ , Seonghun Cho ^{1,2} , Keun Young Huh ^{1,3} , Jae-Woong Jeong ² , and Byung Chul Lee ¹ <i>¹Bionics Research Center, KIST, ²School of Electrical Engineering, KAIST, ³School of Electrical Engineering, Korea University</i>
TP1-103	Wearable Ear Canal Wireless Pulse Oximeter for Sleep Monitoring 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	<p>Full-swing Ternary Circuit Design Methodology based on Inkjet-printed Anti-Ambipolar Transistors (AAT) and PMOS</p> <p>Jongbeom Kim² and Taigon Song^{1,2}</p> <p>¹<i>School of Electronics Engineering, Kyungpook National University, ²School of Electronic and Electrical Engineering, Kyungpook National University</i></p>
TP1-105	<p>T-CMOS 기반 회로의 성능 개선을 위한 추가적인 경로 설정</p> <p>Jonghyun Ko¹ and Taigon Song^{1,2}</p> <p>¹<i>School of Electronic and Electrical Engineering, Kyungpook National University, ²School of Electronics Engineering, Kyungpook National University</i></p>
TP1-106	<p>PPA Structure for Effective Implementation of Multiply-Accumulator Unit</p> <p>Si Eun Lee and Jeong Beom Kim</p> <p><i>Kangwon National University</i></p>
TP1-107	<p>Design of Depletion-type MOSFET Based Ternary Logic in 32nm Node</p> <p>Hyundong Lee and Taigon Song</p> <p><i>School of Electronic and Electrical Engineering, Kyungpook National University</i></p>
TP1-109	<p>Machine Learning Based Gate Size Adjustment for Crosstalk Fault Tolerant in 3D-IC</p> <p>Myeong-Woo Jin, In-Hye Kye, Seok-Byum Kim, and Juho Kim</p> <p><i>Sogang University</i></p>
TP1-110	<p>회로 면적 감소를 위한 스탠다드 셀의 렉틸리니어 형태 재설계</p> <p>이유진, 김경창, 현대준</p> <p><i>청주대학교 전자공학과</i></p>
TP1-111	<p>다양한 테이블 크기로 구성된 스탠다드 셀 타이밍 라이브러리</p> <p>정민지, Manikanta Prahald Manda, 현대준</p> <p><i>청주대학교 전자공학과</i></p>
TP1-112	<p>Netlist의 Graph Structure를 활용한 Routing Congestion 예측</p> <p>Seongbin Kwon, Kyungjun Min, and Seokhyeong Kang</p> <p><i>Department of Electrical Engineering, POSTECH</i></p>



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



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R. Semiconductor Software

심사위원: 권세진 교수(강원대학교), 김영재 교수(서강대학교)

TP1-115	<p>Flexible Physical Memory Allocator for TLB Coalescing in System on Chip Dai Duong Tran¹, Yung-Cheol Byun², and Jae Young Hur¹ ¹Department of Electronic Engineering, Jeju National University, ²Department of Computer Engineering, Jeju National University</p>
TP1-116	<p>Two-layer Prediction Model for Efficient Cache Uses in Cloud Computing Jaehyun Kim and Eui-Young Chung Department of Electrical and Electronic Engineering, Yonsei University</p>
TP1-117	<p>BEPA: Bulk Erase based on Process Awareness for Cloud SSD Caches Sang Jin Kim, Gi Lee, Byoung Jin Kim, and Eui-Young Chung School of Electrical and Electronic Engineering, Yonsei University</p>
TP1-118	<p>OSD 하드웨어 성능에 따른 Ceph 성능 분석 Cheolhyeon Kwon and Donghyun Kang Changwon National University</p>
TP1-119	<p>MinIO 오브젝트 스토리지의 업로드 성능 분석 Jaeha Shin¹, Seongryong Ryu², Muhyeon Kim², and Donghyun Kang¹ ¹Changwon National University, ²Ingle</p>
TP1-120	<p>드론 원격센싱에서 효율적인 데이터 전송을 위한 압축 기반 연산 오프로딩 장두혁, 김성진, 정병현, 박진용, 허준영 한성대학교 컴퓨터공학부</p>
TP1-122	<p>딤러닝 기반 Hot/Cold 분류를 이용한 SSD 쓰기 증폭 개선 최성찬, Ganchuluun Narantsatsralt, Ariunbold Odgerel, 윤성준, 안성용 Pusan National University</p>
TP1-123	<p>ZNS SSD를 위한 리눅스 컨테이너별 Zone 할당 정책 구현 이석준, 최영인, 임경민, 안성용 Pusan National University</p>



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



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TP1-132	An 8-26 Gb/s Single Loop Reference-less CDR with Unrestricted Frequency Acquisition Hyung-Wook Lee, Kyeong-Min Ko, and Jin-Ku Kang <i>School of Electrical and Computer Engineering, Inha University</i>
TP1-133	Reconfigurable Multi-Output Regulating Switched-Capacitor DC-DC Converter for Wireless Power Transfer Unbong Lee and Minkyu Je <i>School of Electrical Engineering, KAIST</i>
TP1-134	An Intra-Body Power Transfer System Achieving 136μW Power Delivered to the Load at 1.8V DC Output with Continuous Maximum Resonant Power Tracking Hyungjoo Cho ¹ , Ji-Hoon Suh ¹ , Gichan Yun ¹ , Sohyung Ha ² , and Minkyu Je ¹ <i>¹KAIST, ²New York University Abu Dhabi</i>
TP1-135	A Front-end ASIC with Sub-array Beamforming for Ring-type CMUT-Based Endoscopic Ultrasound Imaging System Gichan Yun, Kyeongwon Jeong, and Minkyu Je <i>School of Electrical Engineering, KAIST</i>
TP1-136	Neural Network-Based Real-time Super-Resolution Processor Hong Keun Ahn and Seong-Ook Jung <i>Yonsei University</i>
TP1-137	Split WL 6T SRAM Based Bit Serial Computing-in-Memory Macro Young Kyu Lee, Dong Han Ko, Seokhee Cho, Minjune Yeo, and Seong-Ook Jung <i>School of Electrical Engineering, Yonsei University</i>
TP1-138	Wireless Implantable Glucose Monitoring Micro-Device Using a Fluorescent Hydrogel Sensor Hyeonkeon Lee ¹ , Honghyeon Park ² , Mi Song Nam ³ , Taein Kim ³ , Yun Jung Heo ³ , and Sanghoek Kim ³ <i>¹LIG Nex¹ Co., Ltd., ²Silicon Mitus, Inc., ³Kyung Hee University</i>
TP1-139	Fully Digital 2T1C Embedded DRAM Based Compute-in-Memory Macro In-Jun Jung, Young Kyu Lee, Do Han Kim, Dong Han Ko, and Seong-Ook Jung <i>School of Electrical Engineering, Yonsei University</i>
TP1-140	Analog Synapse-Based Neuromorphic System for Deep Neural Network Process Minseong Um ¹ , Minil Kang ² , and Hyung-Min Lee ¹ <i>¹School of Electrical Engineering, Korea University, ²Department of Semiconductor System Engineering, Korea University</i>



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



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



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



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TP1-170	A Design of 45V – 20mA Implantable Electrical Vagus Nerve Stimulation Kim-Hoang Nguyen, Woojin Ahn, and Minkyu Je <i>School of Electrical Engineering, KAIST</i>
TP1-171	Ka-Band CMOS LNA with ESD Protection for 5G Communication Jaehyun Kwon and Changkun Park <i>Department of Electronic Engineering, Soongsil University</i>
TP1-172	Ka-Band CMOS Variable Gain Amplifier with Wide Gain Control Range Dongjin Min and Changkun Park <i>Department of Electronic Engineering, Soongsil University</i>
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TP1-176	A Fully Integrated Wireless Stimulator SoC for Addressable Cortical Microimplant Chae-Eun Lee ¹ , Joonyoung Lim ² , and Yoon-kyu Song ² <i>¹Department of Transdisciplinary Studies, Seoul National University, ²Department of Applied Bioengineering, Seoul National University</i>



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TP1-178	A 4-GS/s 6b Time-Interleaved SAR ADC with Trimming Skew Calibration In-Kwon Park, Jin-Yeop Jang, Sung-Hyun Park, Jae-Hyeon Nam, and Sang-Gyu Park <i>Department of Electronic Engineering, Hanyang University</i>
TP1-179	지능형 디지털 컨트롤러가 장착된 5.8GHz 전용 단거리 통신 웨이크업 수신기 Ju Hyoung Kim and Kang-Yoon Lee <i>Department of Electrical and Computer Engineering, Sungkyunkwan University</i>
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TP1-181	RISC-V를 이용한 Triple Core Lock Step 기능이 탑재된 안전에 신뢰할 수 있는 프로세서 Ji-Woong Choi, Seong-Hyeun Yang, and Seong-Soo Lee <i>School of Electronic Engineering, Soongsil University</i>
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TP1-190	<p>New Precharge-free Matchline Structure with Continuous Search for Low-power Content-Addressable Memory System 이상현, 김영민 <i>홍익대학교 전자전기공학부</i></p>