



제25회 한국반도체학술대회

The 25th Korean Conference on Semiconductors

2018년 2월 5일(월)-7일(수), 강원도 하이원리조트 컨벤션 호텔

2018년 2월 7일(수), 14:45-16:15

컨벤션 호텔, 5층 로비

[WP1] Poster Session II

B. Patterning

심사위원: 안진호 교수(한양대학교), 정지원 교수(인하대학교)

WP1-1	Improvement of Line Edge Fluctuation and Etching Selectivity of Self-Assembled Block Copolymer Patterns Using a Copolymerized Block Seungwon Song, Yoon Hyung Hur, and Yeon Sik Jung <i>Department of Materials Science and Engineering, KAIST</i>
WP1-2	Novel Method for Etch Loading Control of Source and Drain Recess for Formation of Steep Junction Seung-Soo Hong, K. S. Min, B. R. Lim, A. R. Ji, H. H. Jung, G. J. Seong, J. Y. Lee, Y. M. Oh, and J.C. Park <i>Process Development Team, Semiconductor R&D Center</i>
WP1-3	Quasi Atomic Layer Etching of SiO₂ Layers for Surface Cleaning of Nanoscale Patterns Yongjae Kim ¹ , Kyongbeom Koh ² , Taehwan Cha ² , and Heeyeop Chae ^{1,2} <i>¹SAINT, Sungkyunkwan University, ²School of Chemical Engineering, Sungkyunkwan University</i>
WP1-4	Laser Writing for Self-Assembly of Block Copolymer on Graphene Jin Young Choi, Hyeong Min Jin, Seung Hyun Lee, Ju Young Kim, Seung Keun Cha, and Sang Ouk Kim <i>Department of Materials Science and Engineering, KAIST</i>
WP1-5	Complex 3D Multimetal Nanomesh Patterns via Block Copolymer Self-Assembly Seung Keun Cha and Sang Ouk Kim <i>Department of Materials Science & Engineering, KAIST</i>
WP1-6	Enhancement of Gas Sensing Performance through the Decoration of Branch Heterointerfaces and Metallic Effects Hyoun Woo Kim, Myung Sik Choi, and Jae Hoon Bang <i>Division of Materials Science and Engineering, Hanyang University</i>
WP1-7	3D NAND Flash Transistor CD Uniformity 개선 방법 연구 Kibok Kim, Hyoungsoon Yune, Seyoung Oh, Chanha Park, and Hyunjo Yang <i>R&D Division, SK Hynix</i>
WP1-8	CD Loading Mechanism of Si Removal Etch Back at High Selectivity Hyunji Kim ¹ , Yongho Jeon ¹ , Hunsang Kim ² , Fenglin Wang ² , Yongseok Lee ¹ , Dongseok Lee ¹ , Junghyeon Kim ¹ , Lina Yoo ¹ , Seongwoo Myeong ¹ , Miri Jung ¹ , Youngmook Oh ¹ , and Jongcheol Park ¹ <i>¹Samsung Electronics Co., Ltd., ²Applied Materials Inc.</i>



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WP1-9	Etch Characteristics of Micrometer-Scale Masked Cu Thin Films Using Inductively Coupled Plasma of H₂/Ar Jae Sang Choi, Doo Hyeon Cho, Eun Taek Lim, and Chee Won Chung <i>Department of Chemical Engineering, Inha University</i>
WP1-10	Etch Characteristics of Nanometer-Scale Patterned Thin Film Using Aerosol Jet Etching System Doo Hyeon Cho, Eun Taek Lim, Jae Sang Choi, and Chee Won Chung <i>Department of Chemical Engineering, Inha University</i>
WP1-11	Inductively Coupled Plasma Reactive Ion Etching of Cu Thin Film Using O₂/Ar Plasma Eun Taek Lim, Jae Sang Choi, Doo Hyeon Cho, and Chee Won Chung <i>Department of Chemical Engineering, Inha University</i>
WP1-12	The Electrical Characterization of The Nano-Size Trench Structured MOS Device Assisted by CHF₃-Plasma Dry Cleaning Myeong Gyoon Chae ¹ , Jaeho Lee ¹ , Beomgil Ha ¹ , Kyongbeom Koh ² , Heeyeop Chae ² , and Changhwan Choi ¹ <i>¹Division of Materials Science and Engineering, Hanyang University, ²Department of Chemical Engineering, Sungkyunkwan University</i>
WP1-13	Implant Condition에 따른 Gate Poly Etch 기술 Dae Won Kim, Sung Hwan Ahn, Dong Ryeol Lee, and Dong Goo Choi <i>DRAM Process Group, SK Hynix</i>
WP1-14	Characterization of Cr etch process using O₂-less Cl₂ plasma JiCheol Kim, HyunDuck Shin, HoYong Jung, SangPyo Kim, and HyunJo Yang <i>SK Hynix Inc.</i>
WP1-15	Development of Lift-off Patterning Technology of Graphene-ZnO Thin Film on Plastic Substrates for Transparent and Flexible Thin Film Transistors Soon Yeol Kwon ¹ , Dong Geon Jung ² , Young Chan Choi ³ , Jae Yong Lee ⁴ , and Senog Ho Kong <i>School of Electronics Engineering, Kyngpook National University</i>
WP1-16	The Improvement of Plasma Damage Effect by Optimizing PAD Etch Process Jeonggyu Park, Kwangil Choi, Jina Eum, Hongik Kim, Sunggon Choi, and Inwook Cho <i>PMIC Product Engineering, SKHynix systemic Inc</i>



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C. Material Growth & Characterization

심사위원: 이재진 교수(아주대학교), 허준석 교수(아주대학교)

WP1-17	Pulse방식을 이용하여 UHV CVD로 증착한 Epitaxial Si:B박막의 Low Doping 연구 이다윤, 박지우, 김태호, 손현철 <i>연세대학교 공과대학 신소재공학과</i>
WP1-18	Simple and Easy Performance Test System for Avalanche Photodiode in Ultraviolet Region Jin Yeong Ryu ¹ , Byeong-Hwang Park ¹ , Kibong Choi ¹ , Young Il Kang ¹ , Eugene Chong ¹ , and Young-Gook Heo ² <i>¹Agency for Defense Development, ²Sensor Tech Inc.</i>
WP1-19	Enhanced Power Conversion Efficiency of GaAs Thin-Film Solar Cell Using A Metallic Nanostructure Yejun Yun, Sunghyun Moon, Kangho Kim, Minhyung Lee, and Jaejin Lee <i>Department of Electrical and computer Engineering, Ajou University</i>
WP1-20	Atomic Layer Deposition of HfO₂ Films on Graphene Soo Bin Kim, Hyeok Jae Lee, and Sang Woon Lee <i>Department of Energy Systems Research and Department of Physics, Ajou University</i>
WP1-21	고농도 Poly-SiGe Film에서의 SPM Chemical 반응 특성 연구 So-Hee Lim, Sun-Jin Lee, Hyo-Geun Yoon, Kyung-Ho Hwang, and Sang-Duk Kim <i>R&D Department, SK Hynix</i>
WP1-22	Characterization of Ion Gel and its Application as Gate Dielectrics for Graphene FET Kwanbyung Chae, Nguyen Duc Cuong, Y.H.Ahn, Soonil Lee, and Ji-Yong Park <i>Department of Physics and Department of Energy Systems Research, Ajou University</i>
WP1-23	Photodetectors Based on the Heterostructures of Single-walled Carbon Nanotubes and MoS₂ Van Tu Nguyen ¹ , Woongbin Yim ¹ , SaeJune Park ¹ , ByungHee Son ¹ , Thi Thanh Cao ² , Van Chuc Nguyen ² , Yumin Sim ³ , Maeng-Je Seong ³ , Yeonghwan Ahn ¹ , Soonil Lee ¹ , and Ji-Yong Park ¹ <i>¹Department of Physics and Department of Energy Systems Research, Ajou University, ²Institute of Materials Science, Vietnam Academy of Science and Technology, ³Department of Physics, Chung-Ang University</i>
WP1-24	Improved Performance of Ge Single Junction Solar Cells with Nano-Pillar Arrays Kangho Kim ¹ , Youngjo Kim ^{1,2} , Nguyen Dinh Lam ¹ , Sunghyun Moon ¹ , and Jaejin Lee ¹ <i>¹Department of Electrical and Computer Engineering, Ajou University, ²Korea Advanced Nano Fab Center, ³Department of Physics, Hanoi National University of Education</i>



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WP1-25	High Efficiency Single-Junction Ge Solar Cells Grown on GaAs Substrates by MOCVD Youngjo Kim ^{1, 2} , Kangho Kim ¹ , Sunghyun Moon ¹ , and Jaejin Lee ¹ <i>¹Department of Electrical and computer Engineering, Ajou University, ²Korea Advanced Nano Fab Center</i>
WP1-26	Layer Thickness Tunable Solution-Based Growth Process of MoS₂ for Efficient Hydrogen Evolution Reaction Dhanasekaran Vikraman ¹ , Kamran Akbar ² , Sajjad Hussain ³ , Seung Hu Lee ¹ , Seung-Hyun Chun ² , Jongwan Jung ³ , and Hui Joon Park ^{1,4} <i>¹Department of Energy Systems Research, Ajou University, ²Department of Physics, Sejong University, ³Institute of Nano and Advanced Materials Engineering, Sejong University, ⁴Department of Electrical and Computer Engineering, Ajou University</i>
WP1-27	Two-Step Solution Process-Based Pure Perovskite Film Formation for High Performance Solar Cell Uisik Kwon ¹ , Wenping Yin ² , Song Ah Ok ¹ , Tae Kyu Ahn ² , and Hui Joon Park ^{1,3} <i>¹Department of Energy Systems Research, Ajou University, ²Department of Energy Science, Sungkyunkwan University, ³Department of Electrical and Computer Engineering, Ajou University</i>
WP1-28	Design of Double-Faced GaAs Solar Cell Soo Hoon Park, Seung Jun Lee, Sung Min Ma, and Junseok Heo <i>Department of Electrical and Computer Engineering, Ajou University</i>
WP1-29	Evaluation of Uniform Strain in InAlSb/ InGaSb/AlGaSb Quantum Well on GaAs Substrates for High Hole Mobility Transistor Il-Pyo Roh ^{1,2} , SangHyeon Kim ² , Dae-Myeong Geum ² , Sung-Yul L. Park ² , YunHeub Song ¹ , and Jin-Dong Song ² <i>¹ Department of Electronics and Communications Engineering, Hanyang University, ²Center for Opto-Electronic Materials and Devices, KIST</i>
WP1-30	Symmetric InAs Quantum Dots for Entangled Photons Suk In Park and Jin Dong Song <i>Center for Opto-Electronic Materials, KIST</i>
WP1-31	High-Quality 100 nm-thick InSb Films on GaAs (001) Substrates with In_{1-x}Al_xSb Continuously Graded Buffer Layer Sooseok Kang, Hangkyu Kang, and Jindong Song <i>Center for Opto-Electronic Materials and Devices, KIST</i>
WP1-32	Transparent Bonding Technology for Epitaxial Lift-off of III-V Compound Semiconductor Dohyun Kim, Seonghyun Nam, Youngseo Park, and Junseok Heo <i>Department of Electrical and Computer Engineering, Ajou University</i>



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WP1-33	<p>Enhanced Photo-Responses in Multi-Layer MoS₂ Phototransistors Using Au Nano-Pattern</p> <p>Jinwu Park, Sanghyun Lee, Yeojun Yun, Jaejin Lee, and Junseok Heo <i>Department of Electrical and Computer Engineering, Ajou University</i></p>
WP1-34	<p>Characteristic of Quantum Dot Laser Grown on GaAs for Si Photonics Application</p> <p>Jae-Hoon Han¹, GeunHwanRyu^{1,2}, Seung-Yeop Ahn¹, Ho-Sung Kim¹, Subin Lee¹, Han-Youl Ryu², SangHyeon Kim^{1,3}, Jin-Dong Song^{1,3}, and Won Jun Choi¹ <i>¹Center for Opto-Electronics Materials and Devices, KIST, ²Department of Physics, Inha University, ³Nanomaterials Science and Engineering, University of Science and Technology</i></p>
WP1-35	<p>Ag Nanowire Ohmic Contact on p-GaAs</p> <p>SeungHo Han, Sunghyun Moon, Jaejin Lee, and Junseok Heo <i>Department of Electrical and Computer Engineering, Ajou University</i></p>

E. Compound Semiconductors

심사위원: 김동현 박사(한국나노기술원), 장태훈 교수(전북대학교)

WP1-36	<p>Thermal Properties of Schottky Barrier Diode on AlGaIn/GaN Heterostructures on CVD Diamond</p> <p>Zin-Sig Kim, Hyung-Seok Lee, Sung-Bum Bae, Eunsoo Nam, and Jong-Won Lim <i>ICT Materials & Components & Research Laboratory, ETRI</i></p>
WP1-37	<p>HRXRD Analysis of InP (cap) / InGaAs on InP Structure Interface Grown by MOCVD</p> <p>In-young Jung^{1,3}, Minhyeok Choi¹, Hyeoksu Bea², Junoh Kim², Seungwoo Song¹, Eun Kyu Kim³, and Changsoo Kim¹ <i>¹Division of Materials and Energy Measurement, KRISS, ²Division of Convergence Property Measurement, KRISS, ³Division of Physics, Hanyang University</i></p>
WP1-38	<p>Investigation of Low-Budget Microwave Annealing Effect on Metal and Graphene Electrodes</p> <p>Eun-Ki Hong and Won-Ju Cho <i>Department of Electronic Materials Engineering, Kwangwoon University</i></p>
WP1-39	<p>Transfer Length of an AlGaIn/GaN Schottky Contact</p> <p>Yong Woon Park¹, Jeong Jin Kim², and Jeon Wook Yang¹ <i>¹Department of Semiconductor Science and Technology/Semiconductor Physics Research Center, Chonbuk National University, ²Compound Semiconductor Division, ETRI</i></p>
WP1-40	<p>P-Floating Shield 구조적용을 통한 4H-SiC Trench Gate Oxide E-Field 분산 최적화 설계</p> <p>Young sung Hong, Tae jin Nam, Myoung hwan Lee, Tai young Kang, and Sin su Kyoung <i>Research and Development, Powercubesemi Inc.</i></p>



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WP1-41	<p>Fabrication of Ultra-Low Dit(E) InGaAs MOSFETs Seong Kwang Kim^{1,2}, Jae-Phil Shim¹, Dae-Myeong Geum^{1,3}, Chang Zoo Kim⁴, Han-Sung Kim¹, Jin-Dong Song¹, Sung-Jin Choi², Dae Hwan Kim², Won Jun Choi¹, Hyung-jun Kim¹, Dong Myong Kim², and SangHyeon Kim¹ ¹KIST, ²School of Electrical Engineering, Kookmin University, ³Department of Materials Science and Engineering, Seoul National University, ⁴KANC</p>
WP1-42	<p>내부 BVIA가 있는 GaN HEMT 소자를 이용한 모델링 및 MMIC 설계 김성일^{1,2}, 임종원², 이기준¹ ¹충남대학교 전자전파정보통신공학과, ²한국전자통신연구원 ICT소재부품연구소 RF/전력부품연구그룹</p>
WP1-43	<p>Analysis of 4H-SiC Super Junction Bipolar Transistor for Superior Switching Characteristic Dongwoo Bae and Kwangsoo Kim Department of Electronic Engineering, Sogang University</p>
WP1-44	<p>Improved SiO₂/SiC Interface Properties of 4H-SiC MOS Capacitor by Using O₂/H₂O Re-Oxidation Chungbu Jeong and Kwangsoo Kim Department of Electronic Engineering, Sogang University</p>
WP1-45	<p>28GHz MMIC Power Amplifier based on 0.15um GaN HEMT Technology 강동민, 김해천, 지홍구, 김성일, 민병규, 안호균, 임종원 한국전자통신연구원 RF/전력부품연구그룹</p>
WP1-46	<p>Effect of Post-Metallization Annealing on 4H-SiC Metal-Oxide-Semiconductor with Mo Gate Electrode Jae-Gil Lee¹, Dong-Hwan Kim¹, Su-Keun Eom¹, Seung-Hyung Roh¹, Hyun-Seop Kim², Ho-Young Cha², and Kwang-Seok Seo¹ ¹Department of Electrical and Computer Engineering, Seoul National University, ²School of Electronic and Electrical Engineering, Hongik University</p>
WP1-47	<p>The Influence of GaN Capping Layer on Pt-Functionalized FET-Type AlGaIn/GaN Hydrogen Gas Sensor Guhyeok Chung, Dongmin Keum, and Hyungtak Kim Department of Electronic and Electrical Engineering, Hongik University</p>
WP1-48	<p>Analysis of Arch Junction Termination Extension for 4H-SiC Schottky Diode with Superior Breakdown Voltage Jaeyoung Yu, Sangjin Gang, Dongwoo Bae, Chungbu Jeong, and Kwangsoo Kim Department of Electronic Engineering, Sogang University</p>
WP1-49	<p>ZnO Nanorods 성장을 통해 향상된 광량을 갖는 u-LED Array 홍인열, 이재혁, 소재봉, 김태경, 조성민, 곽준섭 순천대학교 인쇄전자공학과</p>



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WP1-50	<p>Recessed AlGaIn/GaN-on-Si MIS-HFET Fabricated Using PECVD SiON Gate Insulator with Forming Gas Annealing</p> <p>Hyun-Seop Kim¹, Su-Keun Eom², Dong-Hwan Kim², Won-Ho Jang¹, Il-Hwan Hwang², Kwang-Seok Seo², and Ho-Young Cha¹</p> <p>¹School of Electronic and Electrical Engineering, Hongik University, ²Department of Electrical Engineering and Computer Science, Seoul National University</p>
WP1-51	<p>육방 밀집형 나노 채널 구조를 이용한 GaN 기반 소자의 전극 특성 평가</p> <p>김정진¹, 이형석¹, 문재경¹, 안호균¹, 장성재¹, 민병규¹, 양전욱², 김지현³, 양진모³, 임종원¹</p> <p>¹한국전자통신연구원, ²전북대학교 반도체화학공학부, ³국방과학연구소</p>
WP1-52	<p>Comparative Study of Normally-Off Al₂O₃/AlGaIn/GaN MIS-HEMTs Fabricated by Gate Recess and F-Treatment</p> <p>Hyun-Wook Jung¹, Min-Jeong Shin¹, Sung-Jae Chang¹, Jae-Won Do¹, Kyu-Jun Cho¹, Ho-Kyun Ahn¹, Byoung-Gue Min¹, Haecheon Kim¹, Hyung Sup Yoon¹, Ji-Heon Kim², Jin-Mo Yang², and Jong-Won Lim¹</p> <p>¹RF/Power Component Research Group, ETRI, ²Agency for Defense Development</p>
WP1-53	<p>Buffer Trap Extraction in AlGaIn/GaN HFETs Using a Simple Test Device</p> <p>Min-Jae Park and Hyuck-In Kwon</p> <p>School of Electrical and Electronics Engineering, Chung-Ang University</p>
WP1-54	<p>전원시스템의 효율과 스위칭용 전력소자 성능과의 상관관계 분석</p> <p>장현규, 김민기, 정동윤, 이현수, 박준보, 전치훈, 고상춘, 박종문, 임종원</p> <p>한국전자통신연구원 ICT소재부품연구소 융합부품기술센터</p>
WP1-55	<p>AlGaIn/GaN HFET with Tunneling Schottky Source Electrode</p> <p>Won-Ho Jang, Sang-Woo Han, Hyun-Seop Kim, Min-Gi Jo, June-Heang Choi, and Ho-Young Cha</p> <p>School of Electrical and Electronic Engineering, Hongik University</p>
WP1-56	<p>Mechanical Stress Effects on Device Properties in GaN-Based HEMTs</p> <p>S.-J. Chang, H.-W. Jung, M. J. Shin, J.-W. Do, K. J. Cho, H. S. Yoon, B.-G. Min, H. Kim, and J.-W. Lim</p> <p>RF/Power Convergence Component Research Group, ETRI</p>
WP1-57	<p>Effects of Substrate Bias Voltage on GaN Power FET Characteristics</p> <p>Min-Gi Jo, Sang-Woo Han, and Ho-Young Cha</p> <p>School of Electrical and Electronic Engineering, Hongik University</p>
WP1-58	<p>Ohmic Contacts with Recess-Etched and TMAH-Treated Nanometer-Scale Patterns for Improved Performance and Reliability in AlGaIn/GaN HEMTs</p> <p>Jae-Won Do, Hyun-Wook Jung, Min Jeong Shin, Kyu-Jun Cho, Sung-Jae Chang, Ho-Kyun Ahn, Haecheon Kim, Byoung-Gue Min, Hyung Sup Yoon, and Jong-Won Lim</p> <p>RF/Power Convergence Components Research Group, ETRI</p>



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WP1-59	Reduction of Off-State Drain Leakage by Employing PEALD SiN_x on RF Non-Recessed MIS-HEMTs Jun-Seok Jeong and Kwang-Seok Seo <i>Electrical Engineering and Computer Science, Seoul National University</i>
WP1-60	1/f Noise Characteristics of Gate-All-Around (GAA) GaN Lateral Nanowire Transistors Sindhuri Vodapally ¹ , M. Siva Pratap Reddy ¹ , Ki-Sik Im ^{1,2} , and Jung-Hee Lee ¹ ¹ <i>School of Electronics Engineering, Kyungpook National University</i> , ² <i>Institute of Semiconductor Fusion Technology, Kyungpook National University</i>
WP1-61	Flexible AlGaIn/GaN HFET 소자의 Negative Differential Conductance 원인 규명 및 개선에 관한 연구 조문욱 ¹ , 김태경 ¹ , 오승규 ² , 박준섭 ¹ ¹ <i>순천대학교 인쇄전자공학과</i> , ² <i>휴스턴대학교 기계공학과</i>
WP1-62	High Electron Mobility Transistor의 Pad 구조 변화에 따른 방열 특성 연구 이재민, 이동규, 김태경, 조문욱, 차유정, 박준섭 <i>순천대학교 인쇄전자공학과</i>
WP1-63	Field Plate Effects on β-Ga₂O₃ Vertical Schottky Barrier Diode June-Heang Choi, Won-Ho Jang, Jong-Ik Kang, Jae-Ho Eum, and Ho-Young Cha <i>School of Electronic and Electrical Engineering, Hongik University</i>
WP1-64	Study on Low-Frequency Noise Characteristics of AlGaIn/GaN HEMTs Jun-Hyeok Lee, Ki-Sik Im, Vodapally sindhuri, Jeong-Gil Kim, Seung-Hyeon Kang, Jung-Min Ju, Yong-Soo Lee, and Jung-Hee Lee <i>School of Electronics engineering, Kyungpook National University</i>
WP1-65	Suppression of Trapping Effects in AlGaIn/GaN HEMTs with Periodically Carbon Doped GaN Buffer and AlGaIn Back-Barrier Structure Jung-MinJu ¹ , Jun-Hyeok Lee ¹ , Gokhan Atmaca ² , Jeong-Gil Kim ¹ , Ryun-Hwi Kim ¹ , Seung-Hyeon Kang ¹ , and Jung-Hee Lee ¹ ¹ <i>School of Electronics Engineering, Kyungpook National University</i> , ² <i>Department of Physics, Faculty of Science, Gazi University</i>
WP1-66	Photosensitive Inverters with Full-Swing Characteristics based on Multi-Layered MoS₂ Load and GaN Driver Transistors Seung Gi Seo ¹ , Won Tae Jang ¹ , Seong Chan Kim ¹ , Sang-Woo Han ² , Ho Young Cha ² , and Sung Hun Jin ¹ ¹ <i>Department of Electronic Engineering, Incheon National University</i> , ² <i>School of Electronic and Electrical Engineering, Hongik University</i>
WP1-67	Temperature-Dependent Characteristics of GaN Vertical Nanowire Transistor Dong-Hyeok Son, Quan Dai, Chul-Ho Won, Jung-Gil Kim, Seung-Hyun Kang, and Jung-Hee Lee <i>School of Electronics Engineering, Kyungpook National University</i>



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WP1-68	<p>Improvement for Reducing Current Collapse in AlGaIn/GaN HEMT by the Cat-CVD SiN_x as Passivation</p> <p>Cheol-Hee Lee, Myoung-Jin Kang, and Kwang-Seok Seo <i>Department of Electrical and Computer Engineering and ISRC, Seoul National University</i></p>
WP1-69	<p>Fabrication and Characteristics of GaN HEMT on SiC Device with Internal Backside Via-Hole in Active Region for MMIC Applications</p> <p>Byoung-Gue Min, Kyu-Jun Cho, Jong Min Lee, Seong-Il Kim, Hyung Sup Yoon, Haecheon Kim, Ho-Kyun Ahn, Hyun-Wook Jung, Sung-Jae Chang, Jae-Won Do, Min Jeong Shin, and Jong-Won Lim <i>RF/Power Components Research Group, ETRI</i></p>
WP1-70	<p>Experimental and Theoretical Investigation of C_{inv} in In_{0.53}Ga_{0.47}As/In_{0.52}Al_{0.48}As HEMTs</p> <p>Hyeon-Bhin Jo, Jung-Ho Park, Seung-Woo Son, Ji-Min Baekand, and Dae-Hyun Kim <i>School of Electronics Engineering, Kyungpook National University</i></p>
WP1-71	<p>High Temperature Characterization and Analysis of GaN-on-Diamond FETs</p> <p>Hyung-Seok Lee, Zin-Sig Kim, Seong-Bum Bae, Eunsoo Nam, Jae-Kyoung Mun, Jeong-Jin Kim, and Jong-Won Lim <i>ICT Materials & Components & Research Laboratory, ETRI</i></p>
WP1-72	<p>Breakdown and Power Characteristics of GaN HEMTs with a Variation of Device Dimensions for S-band Applications</p> <p>Jong-Min Lee, Hae Cheon Kim, Yu-Jin Jang, Ho-Kyun Ahn, Jae-Won Do, Sang-Heung Lee, Dong Min Kang, and Jong-Won Lim <i>IT Materials and Components Laboratory, ETRI</i></p>
WP1-73	<p>The Improvement of Pulsed Response on AlGaIn/GaN Schottky Barrier Diode by Applying Ar Plasma Densification</p> <p>Ra-Seong Ki¹, Ho-Young Cha², and Kwang-Seok Seo¹ <i>¹Department of Electrical Engineering and Computer Science, Seoul National University, ²Department of Electronic and Electrical Engineering, Hongik University</i></p>
WP1-74	<p>Scattering Mechanisms in In_{0.7}Ga_{0.3}As QW MOSFETs</p> <p>Sethu Merin George, Hyeon-Bhin Jo, Seung-Woo Son, and Dae-Hyun Kim <i>School of Electronics Engineering, Kyungpook National University</i></p>
WP1-75	<p>Design and Fabrication of 3.3kV 4H-SiC Schottky Barrier Diodes</p> <p>In Ho Kang, Him-Chan Park, Juyeon Keum, Moon Kyong Na, Ogyun Seok, Jeong Hyun Moon, H. W. Kim, Sang Cheol Kim, Wook Bahng, and Nam Kyun Kim <i>Power Semiconductor Research Center, KERI</i></p>



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H. Display and Imaging Technologies

심사위원: 최병덕 교수(한양대학교)

WP1-76	Web Crawler 및 GrabCut 알고리즘 기반 데이터베이스 구축 시스템 이윤수, 김상혁, 강석주 서강대학교 전자공학과
WP1-77	적외선 영상 기반 딥러닝을 이용한 운전자 감시 시스템 안남현, 김상혁, 강석주 서강대학교 전자공학과
WP1-78	IGZO TFT-Based Highly Reliable Gate Driver Circuit Jongsu Oh ¹ , Jae-Moon Kim ¹ , KeeChan Park ² , and Yong-Sang Kim ¹ ¹ School of Electronic and Electrical Engineering, Sungkyunkwan University, ² Department of Electronics Engineering, Konkuk University
WP1-79	인지적 특성을 고려한 Head Mounted Display 기반 2D-to-3D Mapping 기술 강건우, 서민우, 강석주 서강대학교 전자공학과
WP1-80	The Remote Live Streaming of 360 Camera with VR 이승준, 최송우, 강석주 서강대학교 전자공학과
WP1-81	Highly Flexible Transparent Conducting Electrodes with Amorphous Oxide for Conformable Display Application Jae-Bum Jeong ^{1,2} and Hyeok Kim ³ ¹ KITECH, ² School of Electronics Engineering, Kyungpook National University, ³ Department of Electrical Engineering, Gyeongsang National University
WP1-82	Defect Passivation of Perovskite Light-Emitting Diodes with Improved Device Efficiency and Operating Stability Joo Sung Kim, Himchan Cho, and Tae-Woo Lee Department of Materials Science and Engineering, Seoul National University
WP1-83	Mode-Selectable Interface Integrated Circuit for Infrared Scene Simulators Uisub Shin and Hee Chul Lee School of Electrical Engineering, KAIST
WP1-84	Structural Modulation for Efficient Quasi-2D Perovskite Light-Emitting Diodes Hyeon-Dong Lee ¹ , Hobeom Kim ¹ , Wonhee Cha ² , Chang-Lyoul Lee ³ , Dongho Kim ² , Hoichang Yang ⁴ , and Tae-Woo Lee ¹ ¹ Department of Materials Science and Engineering, Seoul National University, ² Department of Chemistry, Yonsei University, ³ APRI, ⁴ Department of Applied Organic Materials Engineering Inha University



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WP1-85	<p>A Study on External Stress Effects in the Polycrystalline-Silicon Thin Film Transistor Yong Woo Lee and Seung Ki Joo <i>Department of Materials Science and Engineering, Seoul National University</i></p>
WP1-86	<p>Influence on Effective Channel Length in Self-Aligned Coplanar a-IGZO TFTs with Different Annealing Temperatures Hyun Jae Jang, Hyeong Uk Kim, and Bo Sung Kim <i>Division of Display and Semiconductor Physics, Korea University</i></p>
WP1-87	<p>딥러닝 기반 3D 그래픽 렌더링 노이즈 제거 가속기 설계 한성현, 이광엽 <i>Department of Computer Eng., Seokyeong University</i></p>
WP1-88	<p>Organic Material Based Plasmonic Enhancement in OLEDs Jongchan Lee¹, Wonho Lee¹, and Seungyoon Ryu^{1,2} ¹<i>Department of Display and Semiconductor Physics, Korea University,</i> ²<i>Department of Applied Physics, Korea University</i></p>
WP1-89	<p>Transparent and Flexible Conductive Electrodes Using MoO₃/Ag NW/MoO₃ Structure. Daekeun Choi¹ and Seungyoon Ryu^{1,2} ¹<i>Department of Display and Semiconductor Physics, Korea University</i></p>
WP1-90	<p>The NH₃ Plasma Treatment within ALD HfO₂ of IGZO Thin Film Transistors (TFTs) and Its Impact on the Electrical Characteristics Beomgil Ha, Jaeho Lee, Donghwan Lim, Hoonhee Han, Myeong Gyoon Chae, and Changhwan Choi <i>Division of Materials Science and Engineering, Hanyang University</i></p>
WP1-91	<p>Perovskite Light-Emitting Diodes Using Lead-Free Tin-Based Perovskite Jung-Min Heo, Hobeom Kim, and Tae-Woo Lee <i>Department of Materials Science and Engineering, Seoul National University</i></p>



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J. Nano-Science & Technology

심사위원: 박원일 교수(한양대학교), 정대성 교수(대구경북과학기술원)

WP1-92	Low-Frequency Noise (LFN) Characteristics in Multi-layer WSe₂ Field Effect Transistor with Different Contact Metals Won-Mook Kang, In-Tak Cho, and Jong-Ho Lee <i>Department of ECE and ISRC, Seoul National University</i>
WP1-93	Large Scale Synthesis of Molybdenum Diselenide Nanosheets for Detecting Ethanol Vapor Shaolin Zhang, Nguyen Thuy Hang, SooHo Choi, Yoojong Kim, and Woochul Yang <i>Department of Physics, Dongguk University</i>
WP1-94	Fabrication on Nanogap Graphene for Single Electron Transistor Han Ul Kim, Mansu Kim, A. Vinishiya, Seongsoo Lee, N. K. Reddy, Hyun Jae Yoo, and DongMok Hwang <i>Department of Advance Institute of Nano Technology., SungKyunKwan University</i>
WP1-95	Interfacial Ultrafast Self-Assembly of 2D Transition Metal Dichalcogenides Monolayer Films and Their Heterostructures Taeyeong Yun, Jongwon Shim, Sung Hwan Koo, InHo Kim, and Sang Ouk Kim <i>Department of Materials Science & Engineering, KAIST</i>
WP1-96	High χ Block Copolymer Rapid Self-Assembly for Large-Scale Sub-10 nm Nanopattern by Flash Light Jang Hwan Kim, Hyeong Min Jin, Dae yong Park, Keon Jae Lee, and Sang Ouk Kim <i>Department of Materials Science and Engineering, KAIST</i>
WP1-97	Partial Controlled Multi Component Metal Nanowire Array by Using Block Copolymer Patterning and Reversible Metal Ion Loading Geon Gug Yang, Jeong Ho Mun, Seung Keun Cha, and Sang Ouk Kim <i>Department of Materials Science and Engineering, KAIST</i>
WP1-98	Ultimately Stable Suspended Architecture of Two-Dimensional Nanomaterials Using Self-Assembled High Frequency Support Structures Soonmin Yim and Yeon Sik Jung <i>Department of Materials Science and Engineering, KAIST</i>
WP1-99	The Fabrication of Large Area Semi-Conductor Meta-Film Using Bottom-Up Approach for Absorbing the Light with Specific Wavelength In-Hwan Lee, Hyeon-Sik Jang, Changwon Park, Wonseok Jang, Yuhwan Hyeon, and Dongmok Whang <i>Department of Advanced Material Science and Engineering., Sungkyunkwan University</i>
WP1-100	High Performance Graphene Photodetector with Van Der Waals Heterostructure through Tuning Carrier Tunneling Young Rae Kim, Yong Seon Shin, Won Tae Kang, Ui Yeon Won, and Woo Jong Yu <i>Department of Electronic and Electrical Engineering, Sungkyunkwan University</i>



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WP1-101	Facile Polymer Grafting of Polyaniline via N-doped Sites of Carbon Nanotubes Hojin Lee, Atta Ul Haq, Joonwon Lim, and Sang Ouk Kim <i>Department of Materials Science & Engineering, KAIST</i>
WP1-102	편광 라만 분광법을 이용한 ReS₂의 격자 방향 연구 김중철, 최윤, 정현식 <i>Department of physics., Sogang University</i>
WP1-103	Transparent Graphene Heater Improved by Defect Healing Process of Atomic Layer Deposition Hyun Gu Kim ¹ , Woo Hyeok Kwon ¹ , and Han-Bo-Ram Lee ^{1,2} <i>¹Department of Materials Science and Engineering, Incheon National University, ²Innovation Center for Chemical Engineering, Incheon National University</i>
WP1-104	Non-Uniformity of Photoluminescence Signal for Exfoliated Monolayer WS₂ Kangwon Kim, Yongjae Kwon, Jinho Yang, and Hyeonsik Cheong <i>Department of Physics, Sogang University</i>
WP1-105	Fabrication of Highly Tunable Refractive Index Metamaterial by Block Copolymer Self-Assembly Kyu Hyo Han, Ju Young Kim, Jonghwa Shin, and Sang Ouk Kim <i>Department of Materials Science and Engineering, KAIST</i>
WP1-106	Facile Synthesis of Carbon Nitride-Functionalized Porous Reduced Graphene Oxide Aerogel for Gas Capture Applications Yearin Byun, Youngtak Oh, Joonwon Lim, Kyung Eun Lee, and Sang Ouk Kim <i>Department of Material Science and Engineering, KAIST</i>
WP1-107	Infrared Annealing Effect on In-Zn-O Nanofiber Field-Effect Transistors Assembled by Electrospinning Woo-Chae Jung, Sang-Cheol Yoon, In-Chan Hwang, and Won-Ju Cho <i>Department of Electronic Materials Engineering, Kwangwoon University</i>
WP1-108	TiO₂ 나노튜브 형상에 미치는 NH₄F와 H₂O의 영향 김건두, 장상순, 박진형, 이영석, 김희산 <i>홍익대학교 재료공학과</i>
WP1-109	UV/오존 노출후 변화된 그래핀 FET의 전기적 특성 분석 ¹ 김민범, ² 김소영, ² 이병훈 <i>¹Material Science and Engineering Concentration, GIST, ²Center for Emerging Electric Devices and Systems, School of Material Science and Engineering, GIST</i>



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WP1-110	Direct Growth of p-Doped WSe₂ Monolayer by Selenium-Phosphorus Substitution Won Tae Kang ^{1,2} , Il Min Lee ¹ , and Woo Jong Yu ^{1,2} <i>¹School of Electronic and Electrical Engineering, Sungkyunkwan University, ²Center for Intergrated Nanostructure Physics, IBS, Sungkyunkwan University</i>
WP1-111	화학적 도핑 방법을 이용한 그래핀 pn 접합의 형성 김소영 ¹ , 김민범 ² , 전은기 ² , 정경준 ² , 김윤지 ¹ , 이병훈 ¹ <i>¹Center for Emerging Electric Devices and Systems, School of Material Science and Engineering, GIST, ²Material Science and Engineering Concentration, GIST</i>
WP1-112	Linker-Free Decoration of Polyoxometalates on Nitrogen-Doped Carbon Nanotubes for Water Oxidation Catalyst Gil Yong Lee, Insu Kim, Yoon Sung Nam, and Sang Ouk Kim <i>Department of Materials Science and Engineering, KAIST</i>
WP1-113	Ultrahigh On/Off Ratio and Detectivity at Low Drain Bias Using Vertically Stacked Heterostructure Graphene/h-BN/Silicon Boo Heung Lee and Woo Jong Yu <i>Department of Electrical and Computer Eng., Sungkyunkwan University</i>
WP1-114	Size-Dependent N-Doing and Oxygen Reduction Catalysis of Graphene Oxide Hong Ju Jung, Kyung Eun Lee, Joon Won Lim, Tae Yeong Yun, and Sang Ouk Kim <i>Department of Materials Science and Engineering, KAIST</i>
WP1-115	Controlled Aligned Behavior of Graphene Oxide in Polymer Matrix via Geometric Factor Sung Hwan Koo, Kyung Eun Lee, and Sang Ouk Kim <i>Department of Materials Science and Engineering, KAIST</i>
WP1-116	Molybdenum Sulfide/N-Doped CNT Hybrid Electrochemical Catalysts for Hydrogen Evolution Reaction Gang San Lee, Dong Jun Li and Sang Ouk Kim <i>Department of Materials Science and Engineering, KAIST</i>
WP1-117	Universal Fabrication Routes to Plasmonic Nanodot Structures for High-Performance Organic Solar Cells Ju Won Lim ¹ , Yulin Oh ² , Byeong-Kwon Ju ² , and Dong Ha Kim ¹ <i>¹Department of Chemistry and Nano Science, College of Natural Sciences, Ewha Womans University, ²Display and Nanosystem Laboratory, College of Engineering, Korea University</i>
WP1-118	Multi-Spectral and High Performance Color Pixels based on Scattering Cancellation June-Sang Lee ^{1, 2} , Ji-Yeon Park ¹ , Kyung-Min Jung ¹ , Seokwoo Jeon ² , Jerome K. Hyun ¹ , and Dong-Ha Kim ¹ <i>¹Department of Chemistry and Nano Science, Ewha Womans University, ²Department of Materials Science and Engineering, KAIST</i>



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WP1-119	희토류 염을 첨가한 황산 전해액에서 양극산화 코팅의 내식성 연구 소종호 ¹ , 송제범 ² , 이승수 ² , 김민중 ¹ , 신재수 ¹ , 정낙관 ² , 김진태 ^{2,3} , 윤주영 ^{2,3} ¹ 대전대학교, ² 한국표준과학연구원, ³ 한국과학기술연합대학원대학교
WP1-120	Highly Stretchable Block Copolymer Structural Color Strain Sensor Tae Hyun Park, Hansol Kang, Hongkyu Eoh, and Cheolmin Park <i>Department of Materials Science and Engineering, Yonsei University</i>
WP1-121	Liquid-Phase Exfoliation of Transition Metal Dichalcogenide Nanosheets with Amine Modified Polymer Dispersants and Nanocomposites for Photodetectors Hyeokjung Lee and Cheolmin Park <i>Department of Materials Science and Engineering, Yonsei University</i>
WP1-122	α-CsPbI₃ Perovskite Nanocrystals for Photodiode with High Detectivity and Low Noise Current Kyu Min Sim, Kyoungwan Kim, Min Gyun Kang, Min Su Jang, and Dae Sung Chung <i>Department of Energy Science & Engineering, DGIST</i>
WP1-123	Amorphous Molybdenum Sulfide Coated Graphene Fiber for Hydrogen Evolution Reaction Ho Seong Hwang, Kyung Eun Lee, and Sang Ouk Kim <i>Department of Materials Science and Engineering, KAIST</i>
WP1-124	UV/오존 노출 후 변화된 그래핀 FET의 전기적 특성 분석 김민범 ¹ , 김소영 ² , 이병훈 ² ¹ Material Science and Engineering Concentration, GIST, ² Center for Emerging Electric Devices and Systems, School of Material Science and Engineering, GIST
WP1-125	Functional Memristive Integrated Circuitry on Plastic Substrate Toward Energy-Efficient Electronic Systems Byugn Chul Jang, Yunyong Nam, Khang June Lee, June-Hwe Cha, Tae Gyu Kang, Sang-Hee Ko Park, and Sung-Yool Choi <i>School of Electrical Engineering, Graphene²D Materials Research Center, KAIST</i>
WP1-126	Micropatterning Thin Organic-Inorganic Hybrid Perovskite Films by Solvent-Assisted Gel Printing Method Hyowon Han, Beomjin Jeong, and Cheolmin Park <i>Department of Materials Science and Engineering and School of Electrical and Electronic Engineering, Yonsei University</i>
WP1-127	Separation of Grain Resistance and Grain Boundary Resistance in CVD-Grown Polycrystalline Graphene Jaeuk Kim, Jun Yeong Lee, Hyowoong Noh, and Hongsik Park <i>School of Electronic Engineering, Kyungpook National University</i>



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WP1-128	Heteroepitaxial Growth of 2D Layered Crystals with Semiconductor-Semimetal Junction heol-Min Hyun, Jeong-Hun Choi, Seung-Won Lee, and Ji-Hoon Ahn <i>Department of Electronic Material Engineering., Korea Maritime and Ocean University</i>
WP1-129	Functionalized Nanoporous Structures from Couple of Supramolecular Assembly via End-Functionalized Polymer Blends Suk Man Cho, Giyoung Song, Chanhoo Park, and Cheolmin Park <i>Department of Materials Science and Engineering, Yonsei University</i>
WP1-130	Enhancing Solar Light-Driven Photocatalytic Activity of Mesoporous Carbon-TiO₂ Hybrid Films via Upconversion Coupling Hannah Kwon ¹ , Filipe Marques Mota ¹ , Kyungwha Chung ¹ , Yu Jin Jang ¹ , Jerome K. Hyun ¹ , Jiseok Lee ² , and Dong Ha Kim ¹ <i>¹Department of Chemistry and Nano Science, Ewha Womans University, ²School of Energy and Chemical Engineering, UNIST</i>
WP1-131	Toward an Effective Control of the CO to H₂ Ratio in the Electroreduction of CO₂ Over Titanate Nanosheets Incorporating Au Nanoparticles Filipe Marques Mota ¹ , Dang Nguyen ² , Ji-Eun Lee ¹ , Yun Jeong Hwang ² , and Dong Ha Kim ¹ <i>¹Department of Chemistry and Nano Science, Division of Molecular and Life Sciences, College of Natural Sciences, Ewha Womans University, ²Clean Energy Research Center, KIST</i>
WP1-132	Self-Assembled Semiconducting Polymer Nanodomains for Nonvolatile Transistor Memory Kang Lib Kim and Cheolmin Park <i>Department of Materials Science and Engineering, Yonsei University</i>
WP1-133	Photoluminescence Characteristics of Silicon Nanopillar Structures Myunghae Seo, Kihyun Kim, and Chang-Ki Baek <i>Department of Creative IT Engineering, POSTECH</i>
WP1-134	Oxygen Plasma-Treated TMD Ultrasensitive Biosensor Hae Won Lee ¹ , Hyung-Youl Park ² , and Jin-Hong Park ² <i>¹School of Semiconductor and Display Engineering, Sungkyunkwan University, ²School of Electronic and Electrical Engineering, Sungkyunkwan University</i>



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K. Memory (Design & Process Technology)

심사위원: 김수길 수석(SK 하이닉스), 김윤 교수(부산대학교)

WP1-135	<p>Improved On-Current of Ag/NiO/TiO₂/Pt Threshold Switching Device by Suppressing the Ag Incorporation</p> <p>Jeonghwan Song, Seokjae Lim, Jongmyung Yoo, and Hyunsang Hwang <i>Department of Materials Science and Engineering, POSTECK</i></p>
WP1-136	<p>Nonvolatile Memcapacitance Characteristics in Si-based MOS Memcapacitor with an ITO/HfO_x/Si Structure</p> <p>Daehoon Park, Paul Yang, Hyung Jun Kim, Geon Won Beom, Sun Ki Kim, and Tae-Sik Yoon <i>Department of Materials Science and Engineering, Myongji University</i></p>
WP1-137	<p>Effect of Asymmetry of PCM Operation Characteristics on Recognition Rate</p> <p>Dong-hyeop Kim, Cheng Li, Jun-seop An, and Yun-heub Song <i>Department of Electronic Eng., Hanyang University</i></p>
WP1-138	<p>IGZO Thin Film Transistor-Based Flash Memories Using PCMO's Resistive Switching Mechanis</p> <p>Ju Hyun Park, Dong Su Jeon, Sungmin Oh, and Tae Geun Kim <i>School of Electrical Engineering, Korea University</i></p>
WP1-139	<p>Gate-Controlled Silicon Oxide Memory Device based on Vertically Integrated Graphene Barristor</p> <p>Jaewan Choi¹, Nam-Dong Kim², and Gunuk Wang¹ <i>¹KU-KIST Graduate School of Converging Science & Technology, Korea University, ²Applied Quantum Composites Research Center, Institute of Advanced Composite Materials, KIST</i></p>
WP1-140	<p>Demonstration of Pavlov Associative Memory Using Magnetic Tunnel Junctions</p> <p>Donghoon Lee, Gi Yoon Bae, and Wanjun Park <i>Department of Electronic Engineering, Hanyang University</i></p>
WP1-141	<p>High Density Nanoparticle Based WO_x Nanopattern Fabrication for Flexible Resistive Memory Application</p> <p>윤혜원^{1,2}, 김미현¹, 김수정², 홍성훈¹ <i>¹ICT Materials & Components & Research Laboratory, ETRI, ²Department of Materials Science and Engineering, Korea University</i></p>
WP1-142	<p>Free-Standing Organic Neuromorphic Transistors for Wearable Intelligent Electronics</p> <p>Sukjae Jang¹, Seonghoon Jang², Eun-Hye Lee¹, Gunuk Wang², and Tae-Wook Kim¹ <i>¹Applied Quantum Composites Research Center, Institute of Advanced Composite Materials, KIST, ²KU-KIST Graduate School of Converging Science and Technology, Korea University</i></p>



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WP1-143	Self-Rectifying Nanoporous Ta₂O_{5-x}Memristive Device for Neuromorphic Device Applications Seonghoon Jang, Sanghyeon Choi, and Gunuk Wang <i>KU-KIST Graduate School of Converging Science & Technology, Korea University</i>
WP1-144	Carbon Nanotube Network Based Field Effect Transistors with Non-Volatile Memory Operation Eun-Ki Hong and Won-Ju Cho <i>Department of Electronic Materials Engineering, Kwangwoon University</i>
WP1-145	Conductivity Modulated Synapse Device by Changing Ion Concentration Chuljun Lee, Jaewon Lee, Sang-Mo Koo, Jong-Min Oh, and Daeseok Lee <i>Department of Electronic materials Engineering, Kwangwoon University</i>
WP1-146	Investigation of Multi-Level Cell Characteristic in a-IGZO TFT Based 1T-1R Non-Volatile Memory Device Hyun-seok Choi, Min-Soo Kang, and Won-Ju Cho <i>Department of Electronic Materials Engineering, Kwangwoon University</i>
WP1-147	BF3 Plasma Doping (PLAD) Uniformity 개선 방법 연구 황동건, 차재춘, 이진구, 정용수, 진승우 <i>SK Hynix INC</i>
WP1-148	The Resistive Switching Behavior of Te-based Chalcogenide Thin Films by Control of Compliance Current Tae ho Kim, Jinyeol Lee, Kyungbin Ko, Inwoo Kim, and Hyunchul Sohn <i>Department of Materials Science & Engineering, Yonsei University</i>
WP1-149	TCAM 저전력 검색 회로 성락주, 김철, 안성기, 민지수, 김성용, 권기원 <i>성균관대학교 정보통신대학</i>
WP1-150	고성능 CAM을 위한 분할 매치라인 김성용, 안성기, 권기원 <i>성균관대학교 정보통신공학부</i>
WP1-151	Program Characteristics for Planar EEPROM Cells Ho-Jun Choi, Ki-Woong Yoo, and Kee-Won Kwon <i>College of Information and Communication Eng, Sungkyunkwan University</i>



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L. Analog Design

심사위원: 허승찬 박사(삼성전자)

WP1-152	<p>에너지 하베스터로 파워 공급받는 뇌전증 발작 감지 회로의 성능 분석 김선희¹, 주선아², 지창현² ¹상명대학교 시스템반도체공학과, ²이화여자대학교 전기전자공학과</p>
WP1-153	<p>Design of a 10-Bit SAR A/D Converter with 2-Bit/Step and Threshold Configuring Comparator Ho Yong Lee, Dong Hyun Lee, Jin Woo So, and Kwang Sub Yoon <i>Department of Electronic Engineering., Inha University</i></p>
WP1-154	<p>디지털 마이크 응용을 위한 4차 시그마-델타 모듈레이터 설계 김상형, 박철규, 전현덕, 윤범수, 최중호 서울시립대학교, 전자전기컴퓨터 공학과</p>
WP1-155	<p>MASH 델타-시그마 아날로그-디지털 변환기 설계 이재성, 송석재, 탕준, 노정진 <i>Department of Electronic Eng., Hanyang University</i></p>
WP1-156	<p>Resolution Tunable Ring Oscillator type TDC Him Chan Park, Qiwei Huang, Seul Gi Kim, and Jin Wook Burm <i>Department of Electronic Engineering., Sogang University</i></p>
WP1-157	<p>Estimation of Power-Supply Induced Jitter Sensitivity for Clock Buffers Jiho Lee, Yunju Choi, Kyunghoon Kim, and Jaeha Kim <i>Department of Electrical and Computer Engineering, Seoul National University</i></p>
WP1-158	<p>A 12-Bit Current Steering 0.18 μm CMOS DAC Using New Layout Method Jungbin Lee and Jinwook Burm <i>Department of Electronic Eng., Sogang University</i></p>
WP1-159	<p>Time to Digital Converter with Successive Approximation Register Logic Qiwei Huang, Seulgi Kim and Jinwook Burm <i>Department of Electronic Eng., Sogang University</i></p>
WP1-160	<p>Post-DDR4 SDRAM을 위한 빠른 락킹 특성의 고속 DLL 설계 박동준, 김중선 <i>Department of Electronic and Electrical Eng., Hongik University</i></p>



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WP1-161	<p>오프셋 및 저주파수 노이즈 제거 회로를 가진 고이득 저항 센싱 증폭기 최정열², 박철규¹, 이석², 최종호¹ ¹서울시립대학교, 전자전기컴퓨터 공학과, ²썬센소니아,</p>
WP1-162	<p>NFC를 위한 저전력 위상동기루프의 설계 Dong Min Seo and Yong Moon <i>Department of IT Distribution & Logistics., Soongsil University</i></p>
WP1-163	<p>A 7.5-9Gb/s All-Digital Reference-Less CDR Changzhi Yu, Euije Sa, and Jinwook Burm <i>Department of Electronic Eng., Sogang University</i></p>
WP1-164	<p>An Ultra-Low-Power Process Independent CMOS Temperature Sensor with SAR Readout Jee-eun Choi, Wonbin Lee, and Junghyup Lee <i>Information and Communication Engineering, DGIST</i></p>
WP1-165	<p>다중-위상 선택주입을 이용한 완전 디지털 Fractional-N 주파수 합성기 윤준섭, 김중선 <i>Department of Electrical Eng., Hongik University</i></p>
WP1-166	<p>A Design of Wideband CMOS PA Transformer for LBS Tile Array Chung-Geun Jang, Suk-Hui Lee, Kwang-Ho Ahn, and Ki-Jin Kim <i>ICT Device & Packaging Research Center, KETI</i></p>
WP1-167	<p>A 1V 46nF/10MΩ Input-Range Digital-Intensive Reconfigurable RC-to-Digital Converter with Parasitic Insensitive Femto-Farad Baseline Capacitance Sensing in 0.18μm CMOS Arup K. George¹, W. Shim¹, M. Kim¹, M. Je², and J. Lee¹ ¹DGIST, ²KAIST</p>
WP1-168	<p>SiC MOSFET용 Switched Capacitor 이용한 음전압 게이트 구동 회로 한예지^{1,2}, 김기현¹, 남상국¹, 송한정² ¹한국전기연구원, ²인제대학교</p>
WP1-169	<p>PGA with Chopper for Low Output Noise in PRT Sensor Dong Gyu Kim, Dong Soo Lee, and Kang Yoon Lee <i>College of Information and Communication Engineering, Sungkyunkwan University</i></p>



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WP1-170	<p>A Design of 4-Switch Buck-Boost Converter with Three Transition Modes to Reduce Output Ripple</p> <p>Sang-Hyuk Park, Truong Thi Kim Nga, Dong-Soo Lee, and Kang-Yoon Lee <i>College of Information and Communication Engineering, Sungkyunkwan University</i></p>
WP1-171	<p>Gate Driver 절연을 위한 펄스 Demodulator가 포함된 펄스 트랜스 포머</p> <p>석인철^{1,2}, 이경호¹, 김기현¹, 한석봉² ¹한국전기연구원, ²경상대학교</p>
WP1-172	<p>A PWM Compensation Controller for improving Loop Stability in DC-DC Converter</p> <p>Gyu-sup Won, Dong-Soo Lee, and Kang-yoon Lee <i>College of Information and Communication Engineering, Sungkyunkwan University</i></p>
WP1-173	<p>Low-Power Bandgap Reference and Low-Drop Output Regulator with Improved Line Regulation for IoT Application</p> <p>Ji-Hyeon Cheon, Sung-Jin Kim, Dong-Soo Lee, and Kang-Yoon Lee <i>School of Information and Communication Engineering, Sungkyunkwan University</i></p>
WP1-174	<p>Design of a Active Rectifier Eliminating Glitches Using Improved ZCS</p> <p>Ki-Deok Kim, Byoeng-Gi Jang, Sung-Jin Oh, and Kang-Yoon Lee <i>College of Information and Communication Engineering, Sungkyunkwan University</i></p>

N. VLSI CAD

심사위원: 정재용 교수(인천대학교)

WP1-175	<p>Neuron Decomposition Algorithms for Dynamic Fixed-Point Neuromorphic Computing Systems</p> <p>Yongshin Kang, Choongmin Kim, and Jaeyong Chung <i>Department of Electronic Engineering, Incheon National University</i></p>
WP1-176	<p>A Fast and Flexible Software for IC Reverse Engineering</p> <p>Gyungtae Kim, Ming MA, Inhag Park, Bounng Ju Lee, and Jun-Mo Yang <i>National Nanofab Center</i></p>
WP1-177	<p>The Clock Skew Analysis in Multi-Corner Multi-Mode</p> <p>Jeong Keun Park, Deok Keun Oh, and Ju Ho Kim <i>Department of Computer Science and Engineering, Sogang University</i></p>



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WP1-178

The Impact of Slew in a Buffered Clock Tree Synthesis

Hong Min Park, Mujun Choi, and Ju Ho Kim

Department of Computer Science and Engineering, Sogang University

O. System LSI Design

심사위원: 김경기 교수(대구대학교), 김영민 교수(광운대학교)

WP1-179

에너지 습득을 위한 고효율 전력 관리 회로

전현덕, 박철규, 김상형, 윤범수, 최중호

서울시립대학교 전자전기컴퓨터공학과

WP1-180

A First-Order Noise Shaping TDC based on a Relaxation Oscillator

Yoontaek Lee and Jaeha Kim

Department of Electrical and Computer Engineering, Seoul National University

WP1-181

Thermal-Aware Clock Tree Topology for Minimizing Clock Skew

Jeong Keun Park, Hong Min Park, Deok Keun Oh, and Ju Ho Kim

Department of Computer Science and Engineering, Sogang University

WP1-182

A New Approximate Divider with Error Compensating

Hyoungun Joe and Youngmin Kim

School of Computer and Information Engineering, Kwangwoon University

WP1-183

A Low Power 12-bit SAR Resistance-to-Digital Converter in 0.18 μ m CMOS Process

Yeongjin Mun, Hyungseup Kim, Youngwoon Ko, Byeoncheol Lee, and Hyoungho Ko

Department of Electronics Engineering, Chungnam National University

WP1-184

Design of Neuromorphic Processor for Multi-Modal Sensor Processing

Jaechan Cho, Yongchul Jung, Euibeen Lim, and Yunho Jung

School of Electronics and Information Engineering, Korea Aerospace University

WP1-185

Design and Analysis of Memristor-Based 1-bit Full Adder for High Performance Computation

Sungwook Ra and Youngmin Kim

School of Computer and Information Engineering, Kwangwoon University



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WP1-186	Single-Photon Detector Using Comparator and Pulse Detector Eugene Chong ¹ , Jungbin Lee ² , and Jinwook Burt ² <i>¹The 5th R&D Institute ³rd Directorate, Agency for Defense Development, ²Department of Electronic Engineering, Sogang University</i>
WP1-187	On the Accurate UBER Calculation of FEC System with Guaranteed Error Correction Capability Seungsik Moon ¹ , Seokha Hwang ² , and Youngjoo Lee ¹ <i>¹Department of Electrical Engineering, POSTECH, ²Department of Electronic Engineering, Kwangwoon University</i>
WP1-188	A 5 GHz Charge Pump PLL with 100 MHz Reference and 60° Phase Margin Daeyoung Yun and Deog-Kyoon Jeong <i>Department of Electrical and Computer Engineering, Seoul National University</i>
WP1-189	A 3-Tap Feed Forward Equalizer Based 28Gbps Pulse Amplitude Modulation4 Transmitter Byungmin Kim, Deog-Kyoon Jeong <i>Department of Electrical and Computer Engineering, Seoul National University</i>
WP1-190	인공 신경망의 데이터 정밀도와 인식률 간의 관계에 대한 연구 조준서, 변영훈, 이영주 <i>포항공과대학교 전자전기공학과</i>
WP1-191	Quadrature Phase Injection-Locked Frequency Divider for 80 GHz Hyojun Kim and Deog-Kyoon Jeong <i>Department of Electrical and Computer Engineering, Seoul National University</i>
WP1-192	High-Speed ASIC Implementation of Orthogonal Matching Pursuit for Real-Time Compressive Sensing Applications Vu Quan Nguyen, Luong Tran Nhat Trung, and Sang Yoon Park <i>Department of Electronic Engineering, Myongji University</i>
WP1-193	임베디드 보드 환경에서의 효율적인 손 인식 및 추적 방법에 대한 연구 Ho Seong Lee ¹ , Donghyeon Lee ¹ , Jin-Sung Kim ² , and Hyuk-Jae Lee ¹ <i>¹Inter-University Semiconductor Research, Department of Electrical and Computer Engineering and Center, Seoul National University, ²Department of Electronic Engineering, Sum Moon University</i>
WP1-194	Gain Controllable CTLE for 10 Gb/s Data Transmission Byungjun Kang and Deog-Kyoon Jeong <i>Department of Electrical and Computer Engineering, Seoul National University</i>



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WP1-195	A Phase Noise Analysis of Injection-Locked Phase-Locked Loop Sung-Yong Cho, Deog-Kyoon Jeong <i>Department of Electrical and Computer Engineering, Seoul National University</i>
WP1-196	A Low Jitter Delay-Locked Loop for Local Clock Skew Compensation Chae-Young Jung and Won-Young Lee <i>Department of Electronic and IT Media Engineering, Seoul National University of Science and Technology</i>
WP1-197	Synchronization Using PRBS Patterns for Multi-Channel Systems Seung-Woo Lee, In-Ki Hwang, and Hun-Sik Kang <i>Optical Network Research Group, ETRI</i>
WP1-198	A Design of LDO with Improved Phase Margin Using Flipped Voltage Follower for Capacitive Sensor ROIC Yoonho Song and Deog-Kyoon Jeong <i>Department of Electrical and Computer Engineering, Seoul National University</i>
WP1-199	A Depth Sensor with Programmable Super Pixel Filter Yongsung Cho ¹ , Hyeongseok Seo ¹ , Ho-Cheol Ryu ¹ , Seong-Jin Kim ² , and Jaehyuk Choi ¹ <i>¹Department of Semiconductor Systems Engineering, Sungkyunkwan University, ²School of Electrical & Computer Engineering, UNIST</i>
WP1-200	향상된 지터 내성 특성을 갖는 Full-/Half-Rate 주파수 검출기 회로 Dong Seok Kang, Jahoon Jin, and Jung-Hoon Chun <i>College of Information and Communication Engineering, Sungkyunkwan University</i>
WP1-201	Marginal Delay Based Design Methodology for Fully-Synthesizable ADPLL Jiheon Park, Jonghyun Oh, and Deog-Kyoon Jeong <i>Department of Electrical and Computer Engineering, Seoul National University</i>
WP1-202	Design of IEEE802.15.4 Based OQPSK Modulator with Low Complexity Using Oversampling Min Seok Oh, Do Hyeon Yoo, and Kyoung Rok Cho <i>Information and Communication Engineering, Chungbuk University</i>
WP1-203	100 Gbps Coherent Optical OFDM 수신 시스템을 위한 ADC 정합 인터페이스 모듈 설계 및 구현 황인기, 이승우, 강현식, 이준기 <i>한국전자통신연구원 광 네트워크 연구그룹</i>



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WP1-204	Self-Awaking Wakeup Node Algorithm Based WiseMac Protocol for IoT Seongwon Yoo, Kyoungrok Cho <i>Information and Communication Engineering, Chungbuk University</i>
WP1-205	Low Power Asynchronous Pipeline Using Sleep Convention Logics Jin Kyung Lee and Kyung Ki Kim <i>Department of Electronic Engineering, Daegu University</i>

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

심사위원: 신현정 교수(성균관대학교), 함문호 교수(광주과학기술원)

WP1-206	전기화학적 에너지 저장 소자의 성능 향상을 위한 그래핀 음극의 화학적 리튬 전처리 연구 장재원, 함문호 <i>광주과학기술원 신소재공학부</i>
WP1-207	Interface-Confined High Crystalline Growth of Semiconducting Polymers at Graphene Fibers for High Density Wearable Supercapacitors Suchithra Padmajan Sasikala, Kyung Eun Lee, and Sang Ouk Kim <i>KAIST</i>
WP1-208	Research of Electrical Characteristics depending on Annealing Process of P + Collector in 3300V NPT IGBT Sinsu Kyoung, Young-sung Hong, Myung-hwan Lee, Tae-jin Nam <i>Research and Development, Powercubesemi Institute</i>
WP1-209	Mesoporous three-Dimensional SnO₂ and Its Energy Storage as Anode Material for Rechargeable Lithium-Ion Battery Yongsheng Jin, Junyi Wang, Yong-seung Shin, Jaeyoung Lim, Seh-Yoon Lim, and Dongmok Whang <i>School of Advanced Materials Science and Engineering, SKKU Advanced Institute of Nanotechnology, Sungkyunkwan University</i>
WP1-210	SiC Hybrid Module을 적용한 근거리 차량용 8kW Inverter의 동작 안정성 연구 Joon hyeok Jeon, Young sung Hong, Myung hwan Lee, Tae jin Nam, and Sinsu Kyoung <i>Powercubesemi Institute Research and Development</i>
WP1-211	Solid State Asymmetric Pseudocapacitors Electrodes Using Co₃O₄ Nanoparticle Contained Reduced Graphene Oxide Aerogel Jinwoo Byun, Debasis Ghosh, and Sang Ouk Kim <i>Department of Materials Science and Engineering, KAIST</i>



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WP1-212	Effective Control of Grain Size in MAPbI₃ Perovskite Solar Cells Using Laser Irradiation Hyerim Hong, Taewoo Jeon, Hyeong Min Jin, and Sang Ouk Kim <i>Department of Materials Science and Engineering, KAIST</i>
WP1-213	Fabrication of Rational Control of Crystal Grain Size of CH₃NH₃PbI₃ Perovskite Solar Cells with Pseudohalide Pb(SCN)₂ Additive Jisun Yoon, Mi Kyung Kim, Jin Woo Byun, and Sang Ouk Kim <i>Department of Materials Science and Engineering, KAIST</i>
WP1-214	Interfacial Gelation of Reduced Graphene Oxide in Three-Dimensional Shape for High Rate and Large Capacity Supercapacitors. Rishabh Jain, Uday Narayan Maiti, Joonwon Lim, Kyung Eun Lee, and Sang Ouk Kim <i>Department of National Creative Research Initiative Center for Multi-Dimensional Directed Nanoscale Assembly Department of Materials Science & Engineering, KAIST</i>
WP1-215	N-Doped Graphene-Carbon Nanofibers Composite for Oxygen Reduction Reaction Bing Li and Sang Ouk Kim <i>Department of Materials Science and Engineering, KAIST</i>
WP1-216	Study on the Electrical Characteristics of the P+ Implant Depth of 650V SiC SBD Taejin Nam, Youngsung Hong, Jungho Nam, Myunghwan Lee, Taiyoung Kang, and Sinsu Kyoung <i>Department of Research and Development, Powercubesemi Institute</i>
WP1-217	Water-Stable Perovskite Solar Cells with Polydimethylsiloxane Passivation Naying Jin ¹ , Feng Yang ¹ , Dong-Won Kang ² , and Yong-Sang Kim ¹ <i>¹School of Electronic and Electrical Engineering, Sungkyunkwan University, ²Department of Solar & Energy Engineering, Cheongju University</i>
WP1-218	Degradation Monitoring of Power Semiconductor Using Thermal Impedance 최성순, 오솔빈, 이관훈 <i>Reliability Division, Korea Electronics Technology Institute</i>
WP1-219	High Performance Organic Photovoltaics with Plasmonic-Coupled Metal Nanoparticle Cluster Donghun Jung, Hyung Il Park, and Sang Ouk Kim <i>Department of Materials Science and Engineering, KAIST</i>
WP1-220	플렉시블 마이크로 슈퍼커패시터 어레이 제작 및 특성 연구 양경환, 조경아, 김상식 <i>고려대학교 전기전자공학과</i>



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WP1-221	ZnO Based All Transparent UV Photodetector with Functional SnO₂ Layer Joo Hyun Lee, Gyeongnam Lee, and Joondong Kim <i>Photoelectric and Energy Device Application Lab(PEDAL) and Department of Electrical Engineering, Incheon National University</i>
WP1-222	SnO₂ Embedded Broad-Band Si Photodetector Sangeun Lee, Sangcheol Ye, Sungho Lee, Gyeongnam Lee, and Joondong Kim <i>Photoelectric and Energy Device Application Lab(PEDAL) and Department of Electrical Engineering, Incheon National University</i>
WP1-223	Atomic-Layer-Deposited LiAlO Protective Layer for Li Metal Anode in Li-Ion Secondary Batteries Hag-Seung Lee ¹ , Eunyong Jang ² , and Tae Joo Park ^{1,2} <i>¹Department of Materials Science and Chemical Engineering, Hanyang University, ²Department of Advanced Materials Engineering, Hanyang University</i>
WP1-224	Si 나노선이 임베디드된 Ag₂Se 나노입자 박막의 열전특성 연구 양승건, 조경아, 김상식 <i>고려대학교 전기전자공학과</i>
WP1-225	Temperature Characteristics of 4H-SiC LDIMOSFET on an On-Axis Semi-Insulating Substrate Hyoung Woo Kim, Hyun Soo Lee, Jeong Hyun Moon, Ogyun Seok, and Wook Bahng <i>Power Semiconductor Research Center, KERI</i>
WP1-226	Design and Fabrication of 4H-SiC Lateral IGBT with Drift Segmentation Using Trench Process Jong-Il Won, Kun-Sik Park, Doo-Hyung Cho, Jong-Moon Park, and Sang-Gi Kim <i>Convergence Components Technology Center, ETRI</i>
WP1-227	에너지융합소자의 계면물질용 비정질 탄소박막의 광발열 특성연구 오현곤, 조경아, 김상식 <i>고려대학교 전기전자공학과</i>
WP1-228	스크린 프린팅으로 제작된 n-ZnO/p-Cu₂O 열전모듈의 특성 연구 박윤범, 조경아, 김상식 <i>고려대학교 전기전자 공학과</i>
WP1-229	Ligand-Engineered CH₃NH₃PbBr₃/CsPbI₃ Bilayer Based Solar Cell with Improved Power Conversion Efficiency Seung Hyeon Jo, Young-Hoon Kim, and Tae-Woo Lee <i>Department of Materials Science and Engineering, Seoul National University</i>



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WP1-230	스위칭 노이즈 저감을 위한 SiC MOSFET용 게이트 이중 구동 IC 개발 김기현 ^{1,2} , 이경호 ¹ , 김형우 ¹ , 박주성 ² ¹ 한국전기연구원, ² 부산대학교
WP1-231	Optical Enhancement of HIT Solar Cells with Amorphous Silicon Carbide Emitter Layer Myeong Joon Kim, Jung suo Kim, Dong gi Shin, Sang ho Kim, and Jun sin Yi College of Information and Communication Engineering, Sungkyunkwan University
WP1-232	리튬이온 에너지 저장 소자 음극재 적용을 위한 다공성 SnO ₂ /그래핀 나노복합체 제조 연구 조규상, 장재원, 송하용, 장경훈, 함문호 광주과학기술원 신소재공학부
WP1-233	On-Chip Gate ESD Protection Design for 900 V Power MOSFET Using Punch-Through Diode without Degrading Switching Loss Seongbin Kim and Sinsu Kyoung Research and Development, Powercubesemi Institute

Q. Metrology, Inspection, and Yield Enhancement

심사위원: 박주철 센터장(구미전자정보기술원), 유형원 상무(히타치하이테크)

WP1-234	Field Coupling에 의한 System Level ESD Soft-Fail 현상을 분석하기 위한 Susceptibility Scanning Jae Young You, Seong Hoon Jeong, Man ho Seung SK Hynix
WP1-235	CD-AFM 팁의 크기 측정과 팁-시료간 상호작용 연구 Sanjeev Kumar Kanth, 박병천, 류현, 김달현 한국표준과학연구원
WP1-236	Development of a Measurement Technique for Plug Tilt by Using Beam-Tilt Function of Scanning Electron Microscope Jung Hwan Park, Ahram Ko, Jaecheol Jo, Gwirang Kim, Kyu Chan Shim Process Center, Research and Development Division, SK Hynix Inc.
WP1-237	희소 코딩을 이용한 주사전자현미경(SEM) 영상 잡음 제거 김성현 ¹ , 오일석 ^{1,2} ¹ 전북대학교 나노과학기술학과, ² 전북대학교 컴퓨터공학과



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WP1-238	<p>광학검사장비를 이용한 EUV Mask 공정불량 검출 기술 개발</p> <p>김덕인, 마성민, 김규영, 심규찬</p> <p><i>SK Hynix Inc.</i></p>
WP1-239	<p>The Improvement of Inspection Stability of Coherent Scattering Microscope</p> <p>김영웅¹, 우동곤¹, 김정환¹, 안진호^{1,2}</p> <p>¹한양대학교 신소재공학과, ²나노과학기술연구소</p>
WP1-240	<p>3D NAND의 High Aspect Ratio 구조에서의 Overlay 계측 기술 개발</p> <p>권오장, 이일용, 심규찬</p> <p><i>SK Hynix Inc.</i></p>
WP1-241	<p>Monitoring of Multi Patterning Processes in Production Environment</p> <p>Dongyoung Lee, Honggoo Lee, Sangjun Han</p> <p><i>SK Hynix</i></p>
WP1-242	<p>Bulge Test를 통한 EUV 펄리클 박막의 기계적 특성 평가</p> <p>위성주¹, 장용주², 김정환¹, 안진호^{1,2}</p> <p>¹한양대학교 신소재공학과, ²한양대학교 나노반도체공학과</p>
WP1-243	<p>Measurement Sensitivity Enhancement of the through-Focus Scanning Optical Microscopy (TSOM) through Partially Coherent Illumination</p> <p>Shin-Woong Park¹, Jong Hyun Lee², and Hwi Kim^{1,2}</p> <p>¹ICT Convergence Technology for Health & Safety, Korea University, ²Department of Electronics and Information Engineering, Korea University</p>
WP1-244	<p>Analysis of Bonding Failure by XPS</p> <p>Gyungtae Kim, Chilsung Jung, Jinsoo Kim, and Jun-Mo Yang</p> <p><i>NNFC</i></p>
WP1-245	<p>팁-틸트 거울을 이용한 다중 초점 광학 현미경 이미지 획득</p> <p>박규남, 정도환, 최동준, 유병건, 이준호</p> <p><i>Department of Optical Engineering, Kongju National University</i></p>
WP1-246	<p>TEM Specimen Preparation for High Aspect 30 nm Holes Pattern by FIB</p> <p>Kyung Jin Park, Yun Chang Park, Jung Ho Yoo, Jin Soo Kim, Jun-Mo Yang</p> <p><i>NNFC</i></p>



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WP1-248	Defective TiO₂ Nanotube Ink for Photocatalytic Decomposition of VOCs from Spacecraft Hyun Kim, Amine Brayek, Dong Yun Kim, Yeo Jin Choi, and Bee Lyong Yang <i>Department of Materials Science and Engineering., Kumoh National Institute of Technology</i>
WP1-249	Study of Semi-Crystalline Polyaniline Coated ZnS/ZnO for CO₂ Reduction Amine Brayek, Hyun Kim, Dong Yun Kim, Yeo Jin Choi, and Bee Lyong Yang <i>Department of Materials Science and Engineering., Kumoh National Institute of Technology</i>
