

제23회 한국반도체학술대회

2016년 2월 22일(월)-24일(수), 강원도 하이원리조트

L. Analog Design 분과

Room A
태백 I (5층)

2016년 2월 23일(화) 08:30-10:30

[TA1-L] Analog Design I

좌장 : 백광현(중앙대학교)

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|---------|-------------|--|
| TA1-L-1 | 08:30-08:45 | A Low-Power and Small-Area 12-bit Current-Steering/Resistive DAC for Ramp Generator in Single-Slope ADC
Byoung-Gwan Jeon, Min-Kyu Kim, Seong-Kwan Hong, and Oh-Kyong Kwon
<i>Department of Electronics and Computer Engineering, Hanyang University</i> |
| TA1-L-2 | 08:45-09:00 | SAR ADC의 스위칭 에너지와 면적을 줄이기 위한 커패시터 리사이클링 기법
이창우, 유훈상, 김주언, 이성민, 백광현
<i>중앙대학교 전자전기공학부</i> |
| TA1-L-3 | 09:00-09:15 | Multi-segmented LED 구동회로 입력전류 제어를 위한 스위칭 개선
이현승, 김재하
<i>서울대학교 전기정보공학부, 반도체공동연구소</i> |
| TA1-L-4 | 09:15-09:30 | 혼합 스위칭 기법을 이용한 고효율 스위칭 에너지 SAR ADC
이성민, 이창우, 유훈상, 김주언, 백광현
<i>중앙대학교 전자전기공학부</i> |
| TA1-L-5 | 09:30-09:45 | A 10-bit 20-MS/s CMOS Single-ended SA ADC boosting Common-mode Voltage of DAC
Jisu Son, Han-Yeol Lee, Yeong-Woong Kim, and Young-Chan Jang
<i>Department of Electronic Engineering, Kumoh National Institute of Technology</i> |
| TA1-L-6 | 09:45-10:00 | 재정렬 플립플롭을 이용한 뱅크 위상 검출기 성능개선
정동규, 윤동현, 함수훈, 백광현
<i>중앙대학교 전자전기공학부</i> |

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D. Thin Film Process Technology 분과

Room B

태백II+III(5층)

2016년 2월 23일(화) 08:30-10:30

[TB1-D] 1D/2D Materials & Devices

좌장 : 민요섭(건국대학교), 조영진(삼성전자종합기술원)

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| TB1-D-1 | 08:30-08:45 | Electronic Transport Properties of MoS₂-pentacene Hybrid p-n Junction Devices
Jae-Keun Kim ¹ , Kyungjune Cho ¹ , Tae-Young Kim ¹ , Jinsu Pak ¹ ,
Younggul Song ¹ , Barbara Yuri Choi ¹ , Woong-Ki Hong ² , and Takhee Lee ¹
<i>¹Department of Physics and Astronomy, Seoul National University,
²Jeonju Center, Korea Basic Science Institute</i> |
| TB1-D-2 | 08:45-09:00 | Growth of MoS₂ Thin Films by Atomic Layer Deposition
Jung Joon Pyeon ^{1,2} , Cheol Jin Cho ^{1,3} , Soo Hyun Kim ¹ , Chong-Yun Kang ^{1,2} , and Seong Keun Kim ¹
<i>¹Center for Electronic materials, Korea Institute of Science and Technology, ²KU-KIST Graduate school of Converging Science and Technology, ³Department of Materials Science and Engineering, Seoul National University</i> |
| TB1-D-3 | 09:00-09:15 | Low-temperature Growth of Wafer-scale Layered MoS₂ by Chemical Vapor Deposition
Jihun Mun ¹ , Chegal Won ² , Jeong Won Kim ³ , Taesung Kim ^{1,4} , and Sang-Woo Kang ^{2,5}
<i>¹School of Mechanical Engineering, Sungkyunkwan University, ²Division of Industrial Metrology, Korea Research Institute of Standards and Science, ³Division of Convergence Technology, Korea Research Institute of Standards and Science, ⁴SKKU Advanced Institute of Nanotechnology, Sungkyunkwan University, ⁵Department of Advanced Device Technology, University of Science and Technology</i> |
| TB1-D-4 | 09:15-09:30 | Xenon Flash Lamp-induced Multilayer Graphene Growth for Various Applications
Dae Yong Park and Keon Jae Lee
<i>Department of Materials Science and Engineering, KAIST</i> |
| TB1-D-5 | 09:30-09:45 | Two-Dimensional Electron Gas in Oxide Heterostructures using Atomic Layer Deposition
Hae Jun Jung and Sang Woon Lee
<i>Department of Physics and Division of Energy Systems Research, Ajou University</i> |

The 23rd Korean Conference on Semiconductors (KCS 2016)

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TB1-D-6 09:45-10:00 Ultra High-Sensitive Silicon Multi-nanowire Double-Gate Ion-Sensitive Field-Effect Transistors for Biomolecular Detection
Cheol-Min Lim¹, In-Kyu Lee¹, Ki Joong Lee², Young Kyoung Oh²,
Yong-Beom Shin², and Won-Ju Cho¹
¹Department of Electronic Materials Engineering, Kwangwoon University, ²Korea Research Institute of Bioscience and Bionano research center

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2016년 2월 22일(월)-24일(수), 강원도 하이원리조트

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

Room C
함백 I (5층)

2016년 2월 23일(화) 08:30-10:30

[TC1-F] Novel Si Devices and Integrated Circuits (4)

좌장 : 남동욱(인하대학교), 신창환(서울시립대학교)

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|---------|-------------|---|
| TC1-F-1 | 08:30-08:45 | Advanced Bulk CMOS Technology-based Standard Ternary Inverter for Compact Multi-valued Analog-to-Digital Converter
Sunhae Shin and Kyung Rok Kim
<i>School of Electrical and Computer Engineering, Ulsan National Institute of Science and Technology</i> |
| TC1-F-2 | 08:45-09:00 | Effects of Channel Hole Diameter and Blocking Layer Thickness on Electrical Characteristics in Word-Line Stacked NAND Flash Memory
Sang-Ho Lee, Dae Woong Kwon, Seung-Hyun Kim, Myung Hyun Baek, and Byung-Gook Park
<i>Department of Electrical and Computer Engineering, Seoul National University</i> |
| TC1-F-3 | 09:00-09:15 | 15mV/decade Steep Switching Device using Topological Insulator
Hyunwoo Choi and Changhwan Shin
<i>School of Electrical and Computer Engineering, University of Seoul</i> |
| TC1-F-4 | 09:15-09:30 | Novel Asymmetric Channel in a Self-Aligned 65-nm CMOS Technology for High-Performance of Plasmonic Terahertz Wave Detector
Min Woo Ryu, Kwan Sung Kim, Jeong Seop Lee, Sang Hyo Ahn, Hyung Ju Jeon, and Kyung Rok Kim
<i>School of Electrical and Computer Engineering, Ulsan National Institute of Science and Technology</i> |

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2016년 2월 22일(월)-24일(수), 강원도 하이원리조트

G. Device & Process Modeling, Simulation and Reliability 분과

Room D

합백Ⅱ+Ⅲ(5층)

2016년 2월 23일(화) 08:30-10:30

[TD1-G] Device Physics and Characterization 1 : Field-Effect Transistors, Thin-Film Transistors, and 3D Inverter

좌장 : 박문수(삼성디스플레이), 이성현(한국외국어대학교)

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|---------|-------------|---|
| TD1-G-1 | 08:30-08:45 | Analysis of Root Cause of Subthreshold Hump for 40 nm Mobile DDI High-Voltage MOSFET
Kwang-Deok Kim, Sun-Ho Oh, Min-Ki Na, Sung-Gon Choi, Sung-Bo Hwang, and In-Wook Cho
<i>System IC Platform Technology Development team, SK hynix Inc.</i> |
| TD1-G-2 | 08:45-09:00 | Investigation on Effects of Al-Doping in AlZnO Thin Film Transistors using TCAD Simulation
Youngjae Cho ¹ , Young-Min Kong ² , Eomji Kim ³ , Sung-Min Yoon ³ , and Yongwoo Kwon ¹
¹ <i>Department of Materials Science and Engineering, Hongik University,</i>
² <i>School of Materials Science and Engineering, University of Ulsan,</i>
³ <i>Department of Advanced Materials Engineering for Information and Electronics, Kyung Hee University</i> |
| TD1-G-3 | 09:00-09:15 | Low-frequency Noise Behaviors in Dual-gate a-IGZO TFTs
Chan-Yong Jeong ¹ , Jong In Kim ² , Jong-Ho Lee ² , Jae-Gwang Um ³ , Jin Jang ³ , and Hyuck-In Kwon ¹
¹ <i>School of Electrical and Electronics Engineering, Chung-Ang University,</i> ² <i>School of Electrical Engineering and Computer Science, Seoul National University,</i> ³ <i>Department of Information Display, Advanced Display Research Center, Kyung Hee University</i> |
| TD1-G-4 | 09:15-09:30 | Improved Split C-V Technique for Accurate Extraction of Mobility by Considering Effective Inversion Charges in p-Channel Si_{0.8}Ge_{0.2} MOSFET
Tewook Bang ¹ , Hagyoul Bae ¹ , Choong-Ki Kim ¹ , Jae Hur ¹ , Jun-Young Park ¹ , Dae-Chul Ahn ¹ , Gun-Hee Kim ¹ , Yun-Ik Son ² , Jae-Hoon Lee ² , Yong-Taik Kim ² , and Yang-Kyu Choi ¹
¹ <i>School of Electrical Engineering, KAIST,</i> ² <i>SK hynix Inc.</i> |
| TD1-G-5 | 09:30-09:45 | Separate Extraction of Source and Drain Resistances using Double Sweep Saturation Current-Voltage Characteristic in SiGe pMOSFETs
Gun-Hee Kim, Hagyoul Bae, Yong-Yoon Kim, Choong-Ki Kim, Te-Wook Bang, Yoon-Ik Son, and Yang-Kyu Choi
¹ <i>School of Electrical Engineering, KAIST,</i> ² <i>SK hynix Inc.</i> |

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- TD1-G-6 09:45-10:00 A New Method for Determination of Subgap Density of States in n/p-type LTPS TFTs**
Injae Lee¹, Miryeon Kim¹, Min-Ho Shin², and Hyungsoon Shin¹
¹*Department of Electronics Engineering, Ewha Womans University,*
²*R&D Center Paju LCD Industrial Complex*
- TD1-G-7 10:00-10:15 5 nm 세대 나노 와이어의 기생 커패시턴스 성분 분석 및 추출**
김종수, 서영수, 김현수, 신형철
Inter-university Semiconductor Research Center and School of Electrical Engineering and Computer Science, Seoul National University
- TD1-G-8 10:15-10:30 SPICE Parameter Extraction in 3D Sequential Inverter**
Tae Jun Ahn¹ and YunSeop Yu²
¹*Department of Electronic Engineering, Hankyong National University,*
²*Department of Electrical, Electronic and Control Engineering, Hankyong National University*

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I. MEMS & Sensor Systems 분과

Room F
봉래 I (6층)

2016년 2월 23일(화) 08:30-10:30

[TF1-I] High Efficiency Sensors and Devices

좌장 : 전동환(한국나노기술원), 한상욱(한국과학기술연구원)

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| TF1-I-1 | 08:30-08:45 | Flexible Inorganic-based Piezoelectric Acoustic Nanosensors by Mimicking Human Cochlea
Jae Hyun Han, Geon-Tae Hwang, Chang Kyu Jeong, and Keon Jae Lee
<i>Department of Materials Science and Engineering, KAIST</i> |
| TF1-I-2 | 08:45-09:00 | Sampling Time and pH-dependences of SiNW ISFET-based Biosensors
Seohyeon Kim ¹ , Jungmok Kim ¹ , Hyun-Sun Mo ¹ , Jung Han Lee ² , Dong Myong Kim ¹ , Sung-Jin Choi ¹ , Byung-Gook Park ² , Dae Hwan Kim ^{1,2} , and Jisun Park ¹
<i>¹School of Electrical Engineering (EE), Kookmin University, ²Inter-university Semiconductor Research Center (ISRC), Seoul National University</i> |
| TF1-I-3 | 09:00-09:15 | Gas-sensing Characteristics of Exfoliated WSe₂ Field-effect Transistors
Yoonki Hong, Won-Mook Kang, In-Tak Cho, Meile Wu, and Jong-Ho Lee
<i>Department of Electrical and Computer Engineering and Inter-university Semiconductor Research Center, Seoul National University</i> |
| TF1-I-4 | 09:15-09:30 | Hydrogen Gas Sensor based on Carbon Nanotube Transistors with Palladium Source/Drain Electrodes using the Pulse Measurement
Minsu Jeon, Jinsu Yoon, Juhee Lee, Bongsik Choi, Jungmin Han, Yongwoo Lee, Jieun Lee, Dong Myong Kim, Dae Hwan Kim, and Sung-Jin Choi
<i>School of Electrical Engineering, Kookmin University</i> |
| TF1-I-5 | 09:30-09:45 | Stress-based Gas Sensing with Functionalized Resonant Microbridges at Critically-buckled State
Daniel J. Joe ¹ , Jeevak M. Parpia ² , and Harold G. Craighead ³
<i>¹Department of Materials Science and Engineering, KAIST, ²Department of Physics, Cornell University, USA, ³School of Applied & Engineering Physics, Cornell University, USA</i> |
| TF1-I-6 | 09:45-10:00 | Bio-electronic Nose based on Si MOSFET Having a Horizontal Floating Gate
Jongmin Shin ¹ , So-Ong Kim ² , Yoonki Hong ¹ , Tai Hyun Park ² , and Jong- |

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Ho Lee¹

¹*School of ECE and ISRC, Seoul National University,* ²*School of chemical and biology Engineering, Seoul National University*

- TF1-I-7 10:00-10:15 Realization of Smart Contact Lenses for Diagnosis and Therapy**
Beomho Mun¹, Do Hee Keum², Jahyun Koo², Daniel J. Joe¹, Hyemin Kim², Jae-Yoon Sim², Sei Kwang Hahn², and Keon Jae Lee¹
¹*Department of Materials Sciences and Engineering, KAIST,*
²*Department of Materials Sciences and Engineering, Pohang University of Science and Technology*
- TF1-I-8 10:15-10:30 Efficient Photon Collection from Nitrogen-vacancy Centers in a Second Order Grating**
Min-su Kim^{1,2}, Jiwon Yune¹, Youngkyu Sung^{1,3}, Sangin Kim², Sang-Wook Han¹, and Sung Moon¹
¹*Center for Quantum Information, Korea Institute of Science and Technology,* ²*Department of Electrical and Computer Engineering, Ajou University,* ³*Department of Electrical and Computer Engineering, Seoul National University*

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

Room G

봉래Ⅱ+Ⅲ(6층)

2016년 2월 23일(화) 08:30-10:30

[TG1-F] Novel Si Devices and Integrated Circuits (1)

좌장 : 이내인(삼성전자), 이종호(서울대학교)

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| TG1-F-1 | 08:30-09:00 | [초청] Novel Circuit Design Methodology by using of Multi-Gate Transistors
Youngmin Kim
<i>Department of Computer Engineering, Kwangwoon University</i> |
| TG1-F-2 | 09:00-09:15 | Improved Hetero-Gate-Dielectric Tunnel Field-Effect Transistors
Woo Young Cheon, Jangwoo Lee, and Woo Young Choi
<i>Department of Electronic Engineering, Sogang University</i> |
| TG1-F-3 | 09:15-09:30 | Hysteresis-Free Negative Capacitance Field Effect Transistor with Sub-kT/q(ln10) Switching
Hyunseo Park, Jaesung Jo, Kihun Choi, Seunghoon Han, Sungjin Lee, and Changwhan Shin
<i>School of Electrical and Computer Engineering, University of Seoul</i> |
| TG1-F-4 | 09:30-09:45 | Optimal Design of 10-nm Junctionless Field-effect Transistor with Poly-Si Channel in Consideration of Quantum-mechanical Drift-diffusion Models
Junsoo Lee, Youngmin Kim, and Seongjae Cho
<i>Department of Electronic Engineering, Gachon University</i> |
| TG1-F-5 | 09:45-10:00 | Bias-Dependent On-Current Modeling of Ultra Short-Channel PMOSFETs with Hot-Carrier Stress Effects
In Eui Lim ¹ , Heesauk Jhon ¹ , Gyuhan Yoon ¹ , Byung Kil Choi ² , Heung Sik Park ² , Seok Kiu Lee ² , and Woo Young Choi ¹
<i>¹Department of Electronic Engineering, Sogang University, ²R&D Division DMR Team, SK hynix Inc.</i> |
| TG1-F-6 | 10:00-10:15 | Nanowire PMOSFET Having Si Core and Ultra-thin Ge Peripheral Channel
Eunseon Yu ¹ , Mina Yun ¹ , and Seongjae Cho ^{1,2}
<i>¹Department of Electronic Engineering, Gachon University, ²Graduate School of IT Convergence Engineering, Gachon University</i> |
| TG1-F-7 | 10:15-10:30 | Experimental Demonstration of Sub-60-mV/decade Steep Switching FinFET using Negative Capacitance Effects
Jaesung Jo and Changwhan Shin
<i>School of Electrical and Computer Engineering, University of Seoul</i> |

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J. Nano-Science & Technology 분과

Room H
육백 I (6층)

2016년 2월 23일(화) 08:30-10:30

[TH1-J] Nanofabrication for Application

좌장 : 김상욱(KAIST), 박원일(한양대학교)

TH1-J-1	08:30-09:00	[초청] Tough Hydrogels & Stretchable Ionics. Jeong-Yun Sun <i>Seoul National University</i>
TH1-J-2	09:00-09:15	Inverse Piezoresistance Effect in Ultra-thin Silicon Nanomembranes Houk Jang, Jaeseok Kim, Hyunyong Choi, and Jong-Hyun Ahn <i>School of Electrical and Electronic Engineering, Yonsei University</i>
TH1-J-3	09:15-09:30	Flash Plasmonic Welding for Ag Nanowire toward High Performance Transparent Energy Harvester Jung Hwan Park, Geon-Tae Hwang, and Keon Jae Lee <i>KAIST</i>
TH1-J-4	09:30-09:45	'Transient Electronics': Biocompatible/Biodegradable Electronic Devices Dissolve in Body, Environment Suk-Won Hwang <i>KU-KIST Graduate School of Converging Science and Technology, Korea University</i>
TH1-J-5	09:45-10:00	Highly Asymmetric n⁺-p Heterojunction Quantum Dot Solar Cells with Significantly Extended Depletion Region Width Min-Jae Choi ¹ , Suncheul Kim ¹ , Hunhee Lim, Byung Tae Ahn ¹ , Jin Young Kim ² , and Yeon Sik Jung ¹ ¹ Department of Materials Science and Engineering, KAIST, ² Fuel Cell Research Center, Korea Institute of Science and Technology
TH1-J-6	10:00-10:15	Topographically-Designed Triboelectric Energy Harvester via Block Copolymer Self-Assembly Hee Seung Wang, Chang Kyu Jeong, and Keon Jae Lee <i>Department of Materials Science and Engineering, KAIST</i>
TH1-J-7	10:15-10:30	The Effects of Rotary Reactor with Wave Bumps in Atomic Layer Deposition: Its Application to the Fabrication of Core/Shell Nanoparticles Sejong Seong, Yong Chan Jung, Taehoon Lee, In-Sung Park, and Jinho Ahn <i>Department of Materials Science and Engineering, Hanyang University</i>

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K. Memory (Design & Process Technology) 분과

Room J

청옥 I (6층)

2016년 2월 23일(화) 08:30-10:30

[TJ1-K] Memory Processing and RRAM Operation

좌장 : 김수길(SK 하이닉스), 백승재(한경대학교)

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| TJ1-K-1 | 08:30-08:45 | Reliability of Hour-Glass Shaped Filament in a Cu-based Al₂O₃/WO₃ Conductive Bridge RAM System
Jiyong Woo and Hyunsang Hwang
<i>Department of Materials Science and Engineering, Pohang University of Science and Technology</i> |
| TJ1-K-2 | 08:45-09:15 | [초청] ALD Technologies and Applications in Memory Device Fabrication
Han-Jin Lim, Seok-Woo Nam, Siyoung Choi, and Ho-Kyu Kang
<i>Semiconductor R&D Center, Samsung Electronics Co. Ltd.</i> |
| TJ1-K-3 | 09:15-09:30 | Suppression of the Reset Breakdown Failure by using RuO₂ Electrode in HfOx-based RRAM
Jaesung Park, Jiyong Woo, Amit Prakash, Kibong Moon, Changhyuck Sung, and Hyunsang Hwang
<i>Department of Materials and Science Engineering, Pohang University of Science and Technology</i> |
| TJ1-K-4 | 09:30-09:45 | Effects of N-GST Buffer Layer on Switching Characteristics of CBRAM
Seokjae Lim, Sangheon Lee, Jiyong Woo, and Hyungsang Hwang
<i>Department of Materials and Science Engineering, Pohang University of Science and Technology</i> |
| TJ1-K-5 | 09:45-10:00 | Exploring Non-polar and Bipolar Resistance Switching Mechanisms from TiN/TiO₂/Al Memory
Xing Long Shao ¹ , Kyung Min Kim ² , Kyung Jean Yoon ¹ , Seul Ji Song ¹ , Jung Ho Yoon ¹ , Tae Hyung Park ¹ , Dae Eun Kwon ¹ , Young Jae Kwon ¹ , Hye Jin Kim ¹ , and Cheol Seong Hwang ¹
¹ Korea ¹ Department of Materials Science and Engineering and Inter-university Semiconductor Research Center, Seoul National University, ² Hewlett-Packard Laboratories, Hewlett-Packard Company Palo Alto, USA |
| TJ1-K-6 | 10:00-10:15 | Enhancement of Switching and Endurance Characteristics of ReRAM by Control of Forming Conditions
이재연, 하태정, 박우영, 김경완, 박용택, 배윤철, 김종일, 김수길
<i>NM 공정개발그룹, R&D 부문, SK hynix Inc.</i> |
| TJ1-K-7 | 10:15-10:30 | Effects of Gate Bias on Reset Failure in HfO₂ based 1T1R ReRAM Cell |

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Changhyuck Sung, Jeonghwan Song, Sangheon Lee, and Hyunsang Hwang
Department of Materials Science and Engineering, Pohang University of Science and Technology

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R. Semiconductor Software 분과

Room K

청옥Ⅱ+Ⅲ(6층)

2016년 2월 23일(화) 08:30-10:30

[TK1-R] Interaction of System SW and Semiconductor

좌장 : 박정규(단국대학교), 안성용(삼성전자)

TK1-R-1	08:30-08:45	메모리 누수 방지를 위한 운영체제 수준 보호 기법 구현 김병진 (주)엔드리스 드림, 개발팀
TK1-R-2	08:45-09:00	Next Generation Non-Volatile Memory based Fast Booting Technique Sungmin Koo and Seungjae Baek <i>Department of Computer Science, Dankook University</i>
TK1-R-3	09:00-09:15	반도체 기반 다단계 캐시 메모리의 성능 향상을 위한 관리기법 박성우 (주)포워드벤처스, 쿠팡
TK1-R-4	09:15-09:30	비휘발성 메모리를 활용한 브라우저의 기동시간 개선 김태석, 김규식, 조용운, 김성민 <i>광운대학교 컴퓨터공학과</i>
TK1-R-5	09:30-09:45	Hiding Device Driver Faults through Virtual Device Drivers Jay H. Park ¹ , Young Je Moon ² , and Sam H. Noh ² ¹ <i>Computer Engineering, Hongik University</i> , ² <i>Electrical and Computer Engineering, Ulsan National Institute of Science and Technology</i>
TK1-R-6	09:45-10:00	스토리지 클라우드에서 비휘발성 캐시를 사용한 서버 부하 감소 기법 ¹ Dongwoo Kang and Jongmoo Choi <i>Department of Computer Science, Dankook University</i>
TK1-R-7	10:00-10:15	Fair Allocation of I/O Resource for VM SLO on Flash based SSDs Jaeho Kim and Sam H. Noh <i>School of Electrical and Computer Engineering, Ulsan National Institute of Science and Technology</i>
TK1-R-8	10:15-10:30	A Study of Divided Disk Cache Performance Suh Donghwa, Dongwoo Kang, and Jung Kyu Park <i>Department of Computer Engineering, Dankook University</i>

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L. Analog Design 분과

Room A
태백 I (5층)

2016년 2월 23일(화) 10:40-12:40

[TA2-L] Analog Design II

좌장 : 박재진(삼성전자)

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|---------|-------------|--|
| TA2-L-1 | 10:40-10:55 | A 1.2 V CMOS-based Temperature Sensor in the Subthreshold Operation
Woosul Shin, Jun-Seok Na, Bong-Choon Kwak, Seong-Kwan Hong, and Oh-Kyong Kwon
<i>Department of Electronic Engineering, Hanyang University</i> |
| TA2-L-2 | 10:55-11:10 | SIDO DC-DC 컨버터의 부하 범위 확장을 위한 cross regulation 감소 방법
정현수, 홍요한, 팜응옥손, 백광현
<i>중앙대학교 전자전기공학과</i> |
| TA2-L-3 | 11:10-11:25 | Fast-transient Output-capacitorless LDO Regulator for SoC Applications
Eun-Taek Sung, Jeong-Yun Lee, Keum-Won Ha, Ye-Seul Baek, and Donghyun Baek
<i>School of Electrical Engineering, Chung-Ang University</i> |
| TA2-L-5 | 11:40-11:55 | Design of a Transceiver Transmitting Power, Clock, and Data over a Single Optical Fiber for Future Automotive Network System
Woorham Bae and Deog-Kyoon Jeong
<i>Department of Electrical and Computer Engineering, Seoul National University</i> |
| TA2-L-6 | 11:55-12:10 | A 3/6/12-Gb/s Multi-Rate Clock and Data Recovery Circuit with a Multi-Mode Rotational Bang-Bang Phase Detector
Ki-Hyun Pyun, Dae-Hyun Kwon, and Woo-Young Choi
<i>Department of Electrical and Electronic Engineering, Yonsei University</i> |

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D. Thin Film Process Technology 분과

Room B

태백II+III(5층)

2016년 2월 23일(화) 10:40-12:40

[TB2-D] Oxide Semiconductors

좌장 : 김형섭(성균관대학교), 조성목(한국전자통신연구원)

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| TB2-D-1 | 10:40-10:55 | Analysis of Channel Quality of Sputtered IGZO Thin Film Transistors using a Conductance Method with a Corrected Contact Resistance
Manh-Cuong Nguyen ¹ , Jae-Won Choi ¹ , Soo-Yeun Han ¹ , An Hoang-Thuy Nguyen ¹ , Sol Kang ¹ , Jae Kyeong Jeong ² , and Rino Choi ¹
¹ Department of Materials Science and Engineering, Inha University,
² Department of Electronic Engineering, Hanyang University |
| TB2-D-2 | 10:55-11:10 | Highly-Stable Memory Operations of Flexible Charge-Trap Memory Thin-Film Transistors using IGZO Channel and ZnO Charge-Trap Layers on Plastic Poly(ethylene naphthalate) Substrate
So-Jung Kim, Min-Ji Park, Da-Jeong Yun, Won-Ho Lee, and Sung-Min Yoon
<i>Department of Advanced Materials Engineering for Information and Electronics, Kyung Hee University</i> |
| TB2-D-3 | 11:10-11:25 | High Performance and Stability of Double-gate Type In-Ga-Zn-O Thin Film Transistor on Fully Transparent Glass Substrate
Min-Ju Ahn and Won-Ju Cho
<i>Department of Electrical Material Engineering, Kwangwoon University</i> |
| TB2-D-4 | 11:25-11:40 | Characterizations of p-type Tin Monoxide Thin Films Deposited by Co-sputtering
Seungjun Lee, Eunsuk Hwang, Junshik Kim, Younjin Jang, and Cheol Seong Hwang
<i>Department of Materials Science and Engineering and Inter-university Semiconductor Research Center, Seoul National University</i> |
| TB2-D-5 | 11:40-11:55 | Nonvolatile Memory Operations and Process Optimizations for the Memory Thin-Film Transistors using In-Ga-Zn-O Channel and Charge-Trap Layers
Da Jeong Yun, Han Byeol Kang, and Sung min Yoon
<i>Department of Advanced Materials Engineering for Information and Electronics, Kyung Hee University</i> |
| TB2-D-6 | 11:55-12:10 | Effect of Film Density on Electrical Properties of Atomic Layer Deposited amorphous Zinc Tin Oxide Thin Film and TFTs
Jun Shik Kim, Eun Suk Hwang, Seungjun Lee, Younjin Jang and Cheol Seong Hwang |

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*Department of Materials Science and Engineering and Inter-university
Semiconductor Research Center, Seoul National University*

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M. RF and Wireless Design 분과

Room C
함백 I (5층)

2016년 2월 23일(화) 10:40-12:40

[TC2-M] RFIC and Smart RFID Tags

좌장 : 남일구(부산대학교), 백동현(중앙대학교)

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| TC2-M-1 | 10:40-10:55 | A Multi-transformer Coupled Low Phase Noise VCO using Current-reuse and Armstrong Configurations
Hyuk Ryu, Sangyong Park, Seung-Gi Lee, Jongyeon Lee, Woong-ki Jung, and Donghyun Baek
<i>School of Electrical Engineering, Chung-Ang University</i> |
| TC2-M-2 | 10:55-11:10 | A Design of Low Power, High Resolution Digitally Controlled Oscillator with Gain Estimation Technique for BLE Application
Seong-Jin Oh, In-Sung Kim, Sang-Sun Yoo, and Kang-Yoon Lee
<i>College of Information and Communication Engineering, Sungkyunkwan University</i> |
| TC2-M-3 | 11:10-11:25 | A Low-power Self-calibrated System Clock Generator for Class-1 Generation-2 UHF-band RFID Tag IC
Jae-Hun Lee ¹ , Do-Young Chung ¹ , Dasom Park ¹ , Hyun-Sik Lee ¹ , Thanh Son Pham ¹ , Vu Dinh Lam ² , and Jong-Wook Lee ¹
<i>¹Department of Electronics and Radio Engineering, Kyung Hee University, ²Institute of Materials Science, Vietnam Academy of Science and Technology, Vietnam</i> |
| TC2-M-4 | 11:25-11:40 | 듀얼밴드 스마트 태그의 설계
김진호, 이종석, 문용
<i>송실대학교 전자공학과</i> |
| TC2-M-5 | 11:40-11:55 | A Security-Enhanced UHF-band RFID Based Internet of Thing Tag Sensor for Future Personal Healthcare
Do-Young Chung, Jae-Hun Lee, Dasom Park, Hieu Xuan Nguyen, and Jong-Wook Lee
<i>Department of Electronics and Radio Engineering, Kyung Hee University</i> |
| TC2-M-6 | 11:55-12:10 | A Low Noise and Highly Linear CMOS RF Tuner Front-End
Chihoon Choi, Sungchul Bae, Heesung Yang, and Ilku Nam
<i>Department of Electrical Engineering, Pusan National University</i> |

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G. Device & Process Modeling, Simulation and Reliability 분과

Room D

합백Ⅱ+Ⅲ(5층)

2016년 2월 23일(화) 10:40-12:40

[TD2-G] Reliability Analysis : Thin-Film Transistors and Field-Effect Transistors

좌장 : 배종욱(LG디스플레이), 이상기(동부하이텍)

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|---------|-------------|--|
| TD2-G-1 | 10:40-10:55 | Calculation Method for Negative Bias Illumination Stress-induced Instability in Amorphous IGZO Thin-Film Transistors
Jun Tae Jang, Sung-Jin Choi, Dong Myong Kim, and Dae Hwan Kim
<i>School of Electrical Engineering, Kookmin University</i> |
| TD2-G-2 | 10:55-11:10 | Investigation of Stress-induced Instability of SiC DMOSFETs
Sangwon Baek ¹ , Bo Jin ¹ , Chanoh Park ² , Donghoon Kim ¹ , and Jeong-Soo Lee ¹
<i>¹Department of Electrical Engineering, Pohang University of Science and Technology, ²Division of IT Convergence Engineering, Pohang University of Science and Technology</i> |
| TD2-G-3 | 11:10-11:25 | Hot Carrier Degradation of Ni related Defects in Sub-100nm Ni-Pt Salicide FinFETs
Seung Min Lee ^{1,2} and Jungwoo Oh ^{1,2}
<i>¹School of integrated technology, Yonsei University, ²Yonsei Institute of Convergence Technology</i> |
| TD2-G-4 | 11:25-11:40 | Bias-Temperature Instability of Vertical Poly-Si Thin-Film Transistor
Junyoung Lee ¹ , Hojoon Lee ¹ , Bo Jin ¹ , Jungsik Kim ² , Hyeongwan Oh ¹ , and Jeong-Soo Lee ¹
<i>¹Department of Electrical Engineering, Pohang University of Science and Technology, ²Division of IT Convergence Engineering, Pohang University of Science and Technology</i> |
| TD2-G-5 | 11:40-11:55 | Compartmentalization of the Physical Origin on the V_T Variation of IGZO TFT under Current Stress by Combining I-V Curve and TCAD
Jae-Young Kim, Sungju Choi, Hara Kang, Jonghwa Kim, Sung-Jin Choi, Dong Myong Kim, and Dae Hwan Kim
<i>School of Electrical Engineering, Kookmin University</i> |
| TD2-G-6 | 11:55-12:10 | Reliability Characteristics in Junctionless Poly-Si Thin-Film Transistors
Hojoon Lee ¹ , Junyoung Lee ¹ , Bo Jin ¹ , Jungsik Kim ² , Hyeongwan Oh ¹ , Jiwon Kim ¹ , and Jeong-Soo Lee ¹
<i>¹Department of Electrical Engineering, Pohang University of Science and Technology, ²Division of IT Convergence Engineering, Pohang</i> |

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University of Science and Technology

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| TD2-G-7 | 12:10-12:25 | 5 nm 세대 나노와이어의 Self Heating Effect (SHE) transient 특성 분석
김현석, 강덕승, 신형철
<i>Inter university Semiconductor Research Center and School of Electrical Engineering and Computer Science, Seoul National University</i> |
| TD2-G-8 | 12:25-12:40 | 표면 거칠기를 고려한 5 nm 노드 나노와이어 핏의 채널 반지름에 따른 특성
손도균, 고 결, 신형철
<i>Inter university Semiconductor Research Center and School of Electrical Engineering and Computer Science, Seoul National University</i> |

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O. System LSI Design 분과

Room F
봉래 I (6층)

2016년 2월 23일(화) 10:40-12:40

[TF2-O] VLSI System Design for Communications

좌장 : 박종선(고려대학교), 이영주(광운대학교)

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|---------|-------------|--|
| TF2-O-1 | 10:40-10:55 | Cost-Effective and High-Speed Baseband Modem for Gigabit Proximity Wireless Communications
Ik-Jae Chun, Hoo-Sung Lee, and Moon-Sik Lee
<i>Wireless Application Research Department, Electronics and Telecommunications Research Institute</i> |
| TF2-O-2 | 10:55-11:10 | Unnecessary Pseudo-Read Prevent SRAM for Low-Power Viterbi Decoder
Woong Choi, Kyungho Shin, and Jongsun Park
<i>School of Electrical Engineering, Korea University</i> |
| TF2-O-3 | 11:10-11:25 | Low-latency Error-detection and Synchronization Architecture for High-speed RFID-based Train Protection Systems
Yunho Park and Youngjoo Lee
<i>Department of Electronics Engineering, Kwangwoon University</i> |
| TF2-O-4 | 11:25-11:40 | A Low Complexity Massive MIMO Detection Architecture based on Richardson Iterative Method
Dongyeob Shin, Ji-Hwan Yoon, Gihoon Jung, and Jongsun Park
<i>School of Electrical Engineering, Korea University</i> |
| TF2-O-5 | 11:40-11:55 | A Simple and Fast Giga Link between a Host and a FPGA
Hoo-Sung Lee ^{1,2} , Ik-Jae Chun ¹ , Moon-Sik Lee ¹ , and Ji-Hoon Kim ²
<i>¹Wireless Application Research Department, Electronics and Telecommunications Research Institute, ²Department of Electronics Engineering, Chungnam National University</i> |
| TF2-O-6 | 11:55-12:10 | FPGA Implementation of Quantized Gaussian Noise Channel for Error-Control System Verification
GilSu Yun ¹ , Youngjoo Lee ² , and Jeongseok Ha ¹
<i>¹School of Electrical Engineering, KAIST, ²Department of Electronic Engineering, Kwangwoon University</i> |

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

Room G

봉래표+Ⅲ(6층)

2016년 2월 23일(화) 10:40-12:40

[TG2-F] Novel Si Devices and Integrated Circuits (2)

좌장 : 정성웅(SK 하이닉스), 조성재(가천대학교)

TG2-F-1	10:40-11:10	[초청] Recent Trends in Silicon Photonics and Perspectives of Its Future Advances Donghwan Ahn <i>School of Advanced Materials Engineering, Kookmin University</i>
TG2-F-2	11:10-11:25	Step-Up Voltage Amplification by Negative Capacitance in Organic/Ferroelectric Material P(VDF-TrFE) Youngtaek Lee, Jaesung Jo and, Changhwan Shin <i>School of Electrical and Computer Engineering, University of Seoul</i>
TG2-F-3	11:25-11:40	Si CMOS Extension and Ge Technology Perspectives Forecast through Metal-oxide-semiconductor Junctionless Field-effect Transistor Youngmin Kim ¹ and Seongjae Cho ^{1,2} <i>¹Department of Electronic Engineering, Gachon University, ²Graduate School of IT Convergence Engineering, Gachon University</i>
TG2-F-4	11:40-11:55	Novel Degradation of Vertical NAND (VNAND) Flash Memory Cells Hyung Su Kwon ¹ , Hyunseung Yoo ² , Gyu-Seong Cho ² , Sung-Kye Park ² , and Woo Young Choi ¹ <i>¹ Department of Electronic Engineering, Sogang University, ²Flash Device Technology Team, SK hynix Inc.</i>
TG2-F-5	11:55-12:10	Circuit-level Simulation of RRAM Cross-point Array based on a Reliable Device-level Compact Modeling Min-Hwi Kim ¹ , Sungjun Kim ¹ , Sunghun Jung ¹ , Seongjae Cho ² , and Byung-Gook Park ¹ <i>¹Inter-university Semiconductor Research Center and Department of Electrical and Computer Engineering, Seoul National University, ²Department of Electronic Engineering, Gachon University</i>
TG2-F-6	12:10-12:25	Synaptic Device Based on Gated-Diode Memory String using GIDL Current for Neuromorphic System Sung Yun Woo, Chul-Heung Kim, Jaeha Kim, and Jong-Ho Lee <i>Department of Electrical and Computer Engineering, Seoul National University</i>

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TG2-F-7 **12:25-12:40** **Compact CMOS-based Multi-valued Literal Gate as a Building Block for Multi Valued Logic and Memory Applications**
E-San Jang, Sunhae Shin, Jae Won Jeong, and Kyung Rok Kim
School of Electrical and Computer Engineering, Ulsan National Institute of Science and Technology

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J. Nano-Science & Technology 분과

Room H
육백 I (6층)

2016년 2월 23일(화) 10:40-12:40

[TH2-J] Nanofabrication for Application

좌장 : 선정윤(서울대학교), 황석원(고려대학교)

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| TH2-J-1 | 10:40-10:10 | [초청] Silicon Oxide-based Memory and Three-dimensional Nanoporous System for Ultrahigh Density Storage
Gunuk Wang
<i>KU-KIST Graduate School of Converging Science and Technology, Korea University</i> |
| TH2-J-2 | 11:10-11:25 | Alternative Etching Technique of Metal-Assisted Chemical Etching for High Aspect Ratio 3D-Device Fabrication
Keorock Choi ^{1,2} and Jungwoo Oh ^{1,2}
<i>¹School of Integrated Technology, Yonsei University, ²Yonsei Institute of Convergence Technology</i> |
| TH2-J-3 | 11:25-11:40 | Three-dimensional Synthesis of ZnO Nanostructures by Polarity-selective Multistage Growth
Won Woo Lee, Seunghee H. Cho, Dong Won Yang, and Won Il Park
<i>Division of Materials Science and Engineering, Hanyang University</i> |
| TH2-J-4 | 11:40-12:10 | [초청] The Solution-based Sorting and Assembly of Single-walled Carbon Nanotubes for Nano-, Printed and Flexible Electronics
Steve Park ¹ H.-S Philip Wong ² , and Zhenan Bao ³
<i>¹Department of Materials Science and Engineering, KAIST, ²Department of Electrical Engineering, Stanford University, USA, ³Department of Chemical Engineering, Stanford University, USA</i> |
| TH2-J-5 | 12:10-12:25 | Ink-jet Printed Ambipolar Transistors and Inverters based on Semiconducting Carbon Nanotubes with Chemical Doping Technique
Juhee Lee, Bongsik Choi, Jinsu Yoon, Minsu Jeon, Yongwoo Lee, Jungmin Han, Jieun Lee, Dong Myong Kim, Dae Hwan Kim, and Sung-Jin Choi
<i>School of Electrical Engineering, Kookmin University</i> |
| TH2-J-6 | 12:25-12:40 | Alignment of Unpurified, Solution-Processed Single Walled Carbon Nanotubes via Dielectrophoresis and Its Purification Scheme
Geun Woo Baek, Yoon Gy Hong, In Jae Yim, Hyeun Woo Kim, You-Beom Lee, Jae Hyeon Ryu, Gi Taek Yu, and Sung Hun Jin
<i>Department of Electronic Engineering, Incheon National University</i> |

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K. Memory (Design & Process Technology) 분과

Room J

청옥 I (6층)

2016년 2월 23일(화) 10:40-12:40

[TJ2-K] NAND, PCRAM, and MRAM

좌장 : 강명곤(한국교통대학교), 이재구(삼성전자)

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|---------|-------------|---|
| TJ2-K-1 | 10:40-10:55 | Investigation of Retention Characteristics in NAND Flash Memory
Kyunghwan Lee ¹ , Myounggon Kang ² , and Hyungcheol Shin ¹
<i>¹Department of Electrical and Computer Engineering and Inter-university Semiconductor Research Center, Seoul National University, ²Department of Electrical Engineering, Korea National University of Transportation</i> |
| TJ2-K-2 | 10:55-11:10 | Threshold Voltage Setting Method for Layer Selection by Multi-Level Operation in Channel Stacked NAND Flash memory with Body
Do-Bin Kim, Dae Woong Kwon, Wandong Kim, and Byung-Gook Park
<i>Inter-university Semiconductor Research Center and the Department of Electrical and Computer Engineering, Seoul National University</i> |
| TJ2-K-3 | 11:10-11:25 | Self-Structured Nanofilament Induced Heating for Ultra-Low Power Operations of Phase-Change Memory
Byoung Kuk You and Keon Jae Lee
<i>Department of Materials Science and Engineering, KAIST</i> |
| TJ2-K-4 | 11:25-11:40 | Improvement on Operation Speed of In₃SbTe₂ Phase-change Material by Bi Doping
Minho Choi ¹ , Heechae Choi ² , Seungchul Kim ² , Yong Tae Kim ³ , and Jinho Ahn ¹
<i>¹Department of Materials Science and Engineering, Hanyang University, ²Center for Computational Science, Korea Institute of Science and Technology, ³Semiconductor Laboratory, Korea Institute of Science and Technology</i> |
| TJ2-K-5 | 11:40-11:55 | Formation of Ge-Sb-Te Thin Film by Tellurization of Ge-Sb Film
Yu-Jin Kim ¹ , Byeol Han ¹ , Jae-Min Park ¹ , Mann-Ho Cho ² , and Won-Jun Lee ¹
<i>¹Department of Nanotechnology and Advanced Materials Engineering, Sejong University, ²Institute of Physics and Applied Physics, Yonsei University</i> |
| TJ2-K-7 | 12:10-12:25 | A Study on the Electrical Damage Control of Noble MRAM Device using Plasma Etching Process
Jaehun Seo, Jongkyu Kim, Jungik Oh, Jongchul Park, Kyungsub Chin, Seokwoo Nam, Hokyu Kang, and ES Jung
<i>Process development Team, Semiconductor R&D Center, Samsung</i> |

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Electrics Co., Ltd.

TJ2-K-8 12:25-12:40 A Study on the Surface Treatment of MTJ Material for MRAM Device using Oxygen Ion Beam Etching
Sang-Kuk Kim, Jong-kyu Kim, Jong-Soon Park, Jong-chul Park, Kyung-sub Shin, Seok-Woo Nam, Ho-Kyu Kang, and ES Jung
Process Development 1 Team, Semiconductor R&D Center, Samsung Electronics Co., Ltd.

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R. Semiconductor Software 분과

Room K

청옥Ⅱ+Ⅲ(6층)

2016년 2월 23일(화) 10:40-12:40

[TK2-R] Little More Faster, and Even Better Reliability

좌장 : 김재호(UNIST), 백승재(단국대학교)

TK2-R-1	10:40-10:55	Effectiveness of SSDs for MapReduce Workloads on Virtualized Environment Sungyong Ahn, Jae-Ki Hong, Sangkyu Park, and Wooseok Chang <i>DS Software R&D Center, Samsung Electronics Co., Ltd.</i>
TK2-R-2	10:55-11:10	이동형 저장장치의 데이터 접근 이벤트 로깅 기법 손주형, 구성민, 백승재, 최종무 <i>단국대학교 소프트웨어학과</i>
TK2-R-3	11:10-11:25	Evaluating the Performance of NVM-added Systems with TUNA NVM-H2 Jisun Kim and Hyokyung Bahn <i>Ewha Womans University</i>
TK2-R-4	11:25-11:40	Flash Emulator for Program/Read Disturbance Analysis Daeyeon Son, Donghwa Seo, Sewook Kim, and Jongmoo Choi <i>Department of Computer Science, Dankook University</i>
TK2-R-5	11:40-11:55	플래시 기반 스토리지를 위한 파일시스템 유형별 워크로드 분석 Beaeyeop Kim ¹ , Byungjun Jeon ¹ , Eunji Lee ¹ , and Hyokyung Bahn ² <i>¹Chungbuk National University, ²Ewha University</i>
TK2-R-6	11:55-12:10	Improving SSD Performance in Sensor Network Environment Sungmin Koo ¹ , Junkee Yoon ¹ , Jae Ho Kim ² , and Jung Kyu Park ¹ <i>¹Department of Computer Engineering, Dankook University, ²Department of Electrical and Computer Engineering, Ulsan National Institute of Science and Technology</i>
TK2-R-7	12:10-12:25	A Context-aware Page Replacement Policy for PCM-based Swap Devices Yunjoo Park and Hyokyung Bahn <i>Department of Computer Science and Engineering, Ewha Womans University</i>
TK2-R-8	12:25-12:40	Retention Error Analysis Platform for Semiconductor Memory Donghwa Suh, Daeyon Son, Sewook Kim, and Jongmoo Choi <i>Department of Computer Science, Dankook University</i>

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A. Interconnect & Package 분과

Room A
태백 I (5층)

2016년 2월 23일(화) 15:10-17:10

[TA3-A] A2: Enabling Packaging Technologies

좌장 : 김사라은경(서울과학기술대학교), 이웅선(SK 하이닉스)

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|---------|-------------|---|
| TA3-A-1 | 15:10-15:25 | Microstructural Influence in Stress and Reliability Engineering for 3D Interconnect Systems
Hojin Lee, Jinho An, Kwangjin Moon, Byung Lyul Park, Nae-in Lee, Siyoung Choi, Ho-Kyu Kang, and E.S. Chung
<i>Samsung Semiconductor R & D Center, Samsung Electronics Co., Ltd.</i> |
| TA3-A-2 | 15:25-15:40 | Fabrication and Characterization of Sn-58Bi-xCe Nanoscale solder powder using Electrical Wire Explosion Method
Jae-Oh Bang and Seung-Boo Jung
<i>School of Advanced Materials Science and Engineering, Sungkyunkwan University</i> |
| TA3-A-3 | 15:40-15:55 | Electrical and Mechanical Properties of Reverse-offset Printed Sn-Ag-Cu Solder Bump
Min-Jung Son ^{1,2} , Minwoo Kim ¹ , Taik-Min Lee ¹ , Hoo-Jeong Lee ¹ , and Inyoung Kim ¹
¹ <i>Department of Printed Electronics, Korea Institute of Machinery & Materials, ²School of Advanced Materials Science and Engineering, Sungkyunkwan University</i> |
| TA3-A-4 | 15:55-16:10 | Reliability of Flip-chip and Wire Bonding in System-in-Package(SiP)
Woo-Ram Myung ¹ , Jae-Oh Bang ² , and Seung-Boo Jung ²
¹ <i>SKKU Advanced Institute of Nanotechnology (SAINT), Sungkyunkwan University, ²School of Advanced Materials Science & Engineering, Sungkyunkwan University</i> |
| TA3-A-5 | 16:10-16:25 | The Influence of Intermetallic Compound on the Reliability of Flip-Chip Light Emitting Diode Package
Kwong-Ho Jung ¹ , Bum-Geun Park ² , and Seung-Book Jung ¹
¹ <i>Department of Advanced Materials Science & Engineering, Sungkyunkwan University, ²SKKU Advanced Institute of Nanotechnology, Sungkyunkwan University</i> |
| TA3-A-6 | 16:25-16:40 | Timing Exception Path Masking Program
Tae Hyun Kim, Hyunyul Lim, and Sungho Kang
<i>Department of Electrical and Electronic Engineering, Yonsei University</i> |
| TA3-A-7 | 16:40-16:55 | 테스트 병렬성 확대를 위한 SoC 자가 테스트 방법론
임현찬, 서성열, 강성호
<i>Department of Electrical and Electronics Engineering, Yonsei</i> |

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University

TA3-A-8 16:55-17:10 은 인쇄전자회로의 전기화학적 자가복원
정광호¹, 이유림¹, 김승현¹, 이수경¹, 정상용², 정승부¹
¹성균관대학교 신소재공학부, ²성균관대학교 화학공학부

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D. Thin Film Process Technology 분과

Room B

태백II+III(5층)

2016년 2월 23일(화) 15:10-17:10

[TB3-D] Process Technology for Thin Films

좌장 : 이상운(아주대학교), 최리노(인하대학교)

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| TB3-D-1 | 15:10-15:25 | Post Etch/Strip Low-k Recovery for 64nm Pitch and Below: A Easy and Feasible Way for RC Gain and Reliability Improvement
Thomas Ozinda, Tae-Jin Yim, Jongmin Baek, SangHoon Ahn, Byunghee Kim, Nae-in Lee, Siyoung Choi, Ho-kyu Kang, and ES Jung
<i>Semiconductor R&D Center, Samsung Electronics Co. Ltd.</i> |
| TB3-D-2 | 15:25-15:40 | Ultrathin ZnS Interfacial Passivation Layer for HfO₂ on InP Substrate
Seung Hyun Kim ¹ , Hyun Soo Jin ² , Dae Hyun Kim ¹ , Tae Jun Seok ² , Yoo Jin Cho ¹ , and Tae Joo Park ^{1,2}
¹ <i>Department of Advanced Materials Engineering, Hanyang University,</i>
² <i>Department of Materials Science & Chemical Engineering, Hanyang University</i> |
| TB3-D-3 | 15:40-15:55 | Process Temperature Dependence on the Effective Work Function in the MOS Device with PEALD TiN using TDMAT Source
Youngjin Kim, Donghwan Lim, Hoon Hee Han, and Changhwan Choi
<i>Division of Material Science and Engineering, Hanyang University</i> |
| TB3-D-4 | 15:55-16:10 | Atomic Layer Deposition of Ru Thin Film and Its Application to a Capacitor Electrode
Cheol Hyun An ¹ , Woongkyu Lee ¹ , Min Jung Chung ¹ , Sang Hyeon Kim ¹ , Lansalot Clement ² , and Cheol Seong Hwang ¹
¹ <i>Department of Materials Science and Engineering and Inter-university Semiconductor Research Center, Seoul National University,</i>
² <i>Air Liquide Laboratories Korea</i> |
| TB3-D-5 | 16:10-16:25 | Phase Transformation Studies of Al₂O₃ and Al₂O₃-SiO₂ Thin Films
Jae Kyu Choi, Jinho Bin, Ilyoung Kwon, Se-Aug Jang, Sang-Deok Kim, and Noh-Jung Kwak
<i>R&D Division, SK hynix Inc.</i> |
| TB3-D-6 | 16:25-16:40 | Interface Sulfur Passivation with H₂S Pre- and Post-deposition Annealing for Atomic-layer-deposited HfO₂ Film on InP
Hyun Soo Jin ¹ , Tae Jun Seok ¹ , Seung Hyun Kim ² , Yoo Jin Cho ² , Deok-Yong Cho ³ , and Tae Joo Park ^{1,2}
¹ <i>Department of Materials Science & Chemical Engineering, Hanyang University,</i> ² <i>Department of Advanced Materials Engineering, Hanyang University,</i> ³ <i>IPIT and Department of Physics, Chonbuk National</i> |

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University

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H. Display and Imaging Technologies 분과

Room C
함백 I (5층)

2016년 2월 23일(화) 15:10-17:10

[TC3-H] Display and Imaging Technologies

좌장 : 배병성(호서대학교), 전상훈(고려대학교)

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| TC3-H-1 | 15:10-15:25 | Color-switchable Optical Coating by Adopting Multi-layers of Ultrathin Phase Change Material Films
Sijung Yoo, Taeyong Eom, Taehong Gwon, and Cheol Seong Hwang
<i>Department of Materials Science and Engineering and Inter-university Semiconductor Research Center, Seoul National University</i> |
| TC3-H-2 | 15:25-15:40 | Analysis on the Degradation Mechanism under Positive/Negative Gate Bias Stress in Zinc Oxynitride Thin-Film Transistors
Hara Kang, Jun Tae Jang, Sungju Choi, Sung-Jin Choi, Dong Myong Kim, and Dae Hwan Kim
<i>School of Electrical Engineering, Kookmin University</i> |
| TC3-H-3 | 15:40-15:55 | Diffuse Transmission in Electrochromic Device
Seong M. Cho, Juhee Song, Tae-Youb Kim, Sang Hoon Cheon, Chil Seong Ah, Joo Yeon Kim, Hojun Ryu, Yong Hae Kim, and Chi-Sun Hwang
<i>Smart I/O Platform Research Department, Information & Communications Core Technology Research Laboratory, Electronics and Telecommunications Research Institute</i> |
| TC3-H-4 | 15:55-16:10 | Polarity Inversion in Organic Field-effect Transistors by Interface Engineering
Hyeok Kim ¹ , Jeongkyun Roh ² , and Changhee Lee ²
<i>¹Construction Equipment Technology Center, Korea Institute of Industrial Technology, ²Department of Electrical and Computer Engineering, Inter-University Semiconductor Research Center, Seoul National University</i> |
| TC3-H-5 | 16:10-16:25 | A 8-bit SAR ADC based on a Current-steering DAC for Feedback Compensation of Double-gate TFT Gate Drivers
Haram Ju and Deog-Kyoon Jeong
<i>Department of Electrical Engineering and Computer Science, Seoul National University</i> |
| TC3-H-6 | 16:25-16:40 | Dynamic Range Compensation for Pedestrian Detection from Shaded Images
Chan Young Jang and Young Hwan Kim
<i>Department of Electrical Engineering, Pohang University of Science and Technology</i> |

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- TC3-H-7 16:40-16:55 The High Power LED Lighting with a FCOPMP(Flip-Chip on Patterned Metal Plate) LED Module**
Choong-Mo Nam, Jae-Joon Lee, Jin-Ho Kim, Hye-Jin Jeon, Ji-Yong Park, Soo-Kun Jeon, and Byung-Tak Jang
Department of Electronics Engineering, Korea Polytechnic University
- TC3-H-8 16:55-17:10 Spin On Glass SiO₂의 게이트 절연막 특성**
홍민택¹, 김진국¹, 윤의중², 배병성¹
¹호서대학교 전자소자연구실, ² 호서대학교 정보통신공학과

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G. Device & Process Modeling, Simulation and Reliability 분과

Room D

합백Ⅱ+Ⅲ(5층)

2016년 2월 23일(화) 15:10-17:10

[TD3-G] Device Modeling and Simulation 1 : RF, Terahertz, Low-Power, and Novel Devices

좌장 : 유현용(고려대학교), 조인욱(SK 하이닉스)

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|---------|-------------|--|
| TD3-G-1 | 15:10-15:25 | Tunnel FET-based Negative Differential Resistance Device with Triple-peaks and Ultra-high Peak-to-valley Current Ratio
Jaewon Jeong, Sunhae Shin, Esan Jang, and Kyung Rok Kim
<i>School of Electrical and Computer Engineering, Ulsan National Institute of Science and Technology</i> |
| TD3-G-2 | 15:25-15:40 | Output Equivalent Circuit Modeling for HR PD-SOI RF MOSFETs
Seoyoung Hong and Seonghearn Lee
<i>Department of Electronic Engineering, Hankuk University of Foreign Studies</i> |
| TD3-G-3 | 15:40-15:55 | New Non-Quasi-Static (NQS) Compact Model for MOSFET-Based Plasmonic Terahertz Wave Detector
Kwan Sung Kim, Sang Hyo Ahn, Min Woo Ryu, and Kyung Rok Kim
<i>School of Electrical and Computer Engineering, Ulsan National Institute of Science and Technology</i> |
| TD3-G-4 | 15:55-16:10 | Analysis of Gate Finger Number Dependence of Input Capacitance for RF Multi-Finger MOSFETs
Ja-Hyun Ahn and Seonghearn Lee
<i>Department of Electronic Engineering, Hankuk University of Foreign Studies</i> |
| TD3-G-5 | 16:10-16:25 | Mapping of Gate-all-around MOSFETs to Double-gate MOSFETs
Jungseung Park and Sung-Min Hong
<i>School of Information and Communications, Gwangju Institute of Science and Technology</i> |
| TD3-G-6 | 16:25-16:40 | Novel Dual Channel SiGe/Strain-Silicon FinHEMT for High-Performance and Low-Power Application
Sung-Ho Kim, Jong Yul Park, Yu-Jung Jung, and Kyung Rok Kim
<i>School of Electrical and Computer Engineering, Ulsan National Institute of Science and Technology</i> |
| TD3-G-7 | 16:40-16:55 | 계면 트랩 변동 효과를 고려한 5 nm 노드 나노와이어 핏의 채널 지름에 따른 분석
고결, 손도균, 신형철
<i>Inter university Semiconductor Research Center (ISRC) and School of Electrical Engineering and Computer Science, Seoul National University</i> |

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- TD3-G-8 16:55-17:10 Transfer Characteristics of Vacuum Field Emission Transistors with Various Tip Positions of Emitter and Collector**
Jungsik Kim¹, Jiwon Kim², Hyeongwan Oh², Jin-Woo Han³, M. Meyyappan³, and Jeong-Soo Lee²
¹Division of IT Convergence Engineering, Pohang University of Science and Technology, ²Department of Electrical Engineering, Pohang University of Science and Technology, ³Center for Nanotechnology, NASA Ames Research Center, USA

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Q. Metrology, Inspection, and Yield Enhancement 분과

Room F
봉래 I (6층)

2016년 2월 23일(화) 15:10-17:10

[TF3-Q] Metrology and Inspection I

좌장 : 박병천(한국표준과학연구원), 유형원(SK 하이닉스)

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| TF3-Q-1 | 15:10-15:25 | 요소 트리를 이용한 반도체 SEM 영상의 결함 자동 검출
김성현 ¹ , 김민우 ² , 오일석 ^{1,2}
<i>¹전북대학교 나노과학기술학과, ²전북대학교 컴퓨터공학과</i> |
| TF3-Q-2 | 15:25-15:40 | Methodology of Stress Measurement in Copper and Silicon around Through-Silicon via using Nanoindentation and Micro Raman Spectroscopy for 3D IC Interconnects
Jaehyun Kim ^{1,2} , Changhwan Lee ¹ , Hyungwon Yoo ¹ , Yeojin Yoon ¹ , Jinsan Yoo ¹ , and Seungmin Han ²
<i>¹SK hynix Inc., ²KAIST</i> |
| TF3-Q-3 | 15:40-15:55 | Identifying the Systematic Failure Mechanism using Volume Diagnostics Methodology
Jeongsu Park ¹ , Joochan Kim ² , Sunghun Kim ² , and Sunggun Kang ²
<i>¹Yield and Failure Analysis, Synopsys, Inc., ²Process Architecture Team, System LSI, Samsung Electronics Co., Ltd.</i> |
| TF3-Q-4 | 15:55-16:10 | Methodology Study for Real Cell Overlap Control Under sub-1_xnm Device Era
Jun-Beom Park, Hong-Boo Lee, Sang-Jun Han, Young-Sik Kim, and Noh-Jung Kwak
<i>R&D Division, SK hynix Inc.</i> |
| TF3-Q-5 | 16:10-16:25 | Study on the Interferometric Measurements of Wafer Warpage for Correction of Overlay Error
Seung-Il Lim ^{1,2,3} , Jae-Jun Choi ^{1,2,3} , Sung-Min Yoon ^{1,2,3} , Woo Sung Jung ^{1,2,3} , Seung Chul Oh ^{1,2,3} , Jae Yong Lee ^{1,2,3} , and Jaison Kim ^{1,2,3}
<i>¹Department of Physics, Myong-ji University, ²AUROS Technology, ³KRISS</i> |
| TF3-Q-6 | 16:25-16:40 | Reliability Analysis of Protective Anodizing Film for Contamination Free Manufacturing under Etching
Je-Boem Song ^{1,2} , Jin-Tae Kim ¹ , Seung-Su Lee ¹ , SinHo Choi ¹ , Seong-Geun Oh ² , and Ju-Young Yun ¹
<i>¹Vacuum Center, Korea Research Institute of Standards and Science, ²Department of Chemical Engineering, Hanyang University</i> |

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

Room G

봉래Ⅱ+Ⅲ(6층)

2016년 2월 23일(화) 15:10-17:10

[TG3-F] Novel Si Devices and Integrated Circuits (3)

좌장 : 전인상(Ulvac Korea), 최우영(서강대학교)

TG3-F-1	15:10-15:25	Integrate-and-Fire(I&F) Neuron Circuit using Resistive-switching Random Access Memory(RRAM) Min-Woo Kwon, Sungjun Kim, Min-Hwi Kim, Jungjin Park, Hyungjin Kim, and Byung-Gook Park <i>Inter-university Semiconductor Research Center and Department of Electrical and Computer Engineering, Seoul National University</i>
TG3-F-2	15:25-15:40	Effects of Pocket Doping Concentration on 1T DRAM based on Pillar Type Tunneling Field-effect Transistor with Surrounding Gate Structure Hyungjin Kim and Byung-Gook Park <i>Department of Electrical and Computer Engineering and Inter-university Semiconductor Research Center, Seoul National University</i>
TG3-F-3	15:40-15:55	Hole Trapping Phenomenon at Grain Boundary of 3D NAND Flash Memory Myung-Hyun Baek, Sang-Ho Lee, Dae Woong Kwon, Joo Yun Seo, and Byung-Gook Park <i>Department of Electrical and Computer Engineering, Seoul National University</i>
TG3-F-4	15:55-16:10	Resistive Switching Characteristics of RRAM with WO_x Switching Layer Prepared by Rapid Thermal Oxidation Tae-Hyeon Kim, Hyungjin Kim, Sungjun Kim, Suhyun Bang, and Byung-Gook Park <i>Inter-university Semiconductor Research Center and Department of Electrical and Computer Engineering, Seoul National University</i>
TG3-F-5	16:10-16:25	Synaptic Device based on Memristor using Cu/ITO/Si Structure Suhyun Bang, Sungjun Kim, Hyungjin Kim, Tae-Hyeon Kim, and Byung-Gook Park <i>Inter-university Semiconductor Research Center and Department of Electrical and Computer Engineering, Seoul National University</i>
TG3-F-6	16:25-16:40	Highly Accurate Circuit-level Macro Modeling of Charge-trap Flash Memory Seunghyun Kim ¹ , Min-Hwi Kim ¹ , Sang-Ho Lee ¹ , Youngmin Kim ² , Hyung-Min Kim ³ , Young Goan Kim ³ , Seongjae Cho ² , and Byung-Gook Park ¹ ¹ <i>Department of Electrical and Computer Engineering, Seoul National</i>

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*University, ²Department of Electronic Engineering, Gachon University,
³Novachips*

- TG3-F-7 16:40-16:55 DC and Pulse Switching Characteristics of Fully Si Processing-
Compatible SiN-based RRAM**
Min-Hwi Kim¹, Sungjun Kim¹, Sunghun Jung¹, Seongjae Cho², and
Byung-Gook Park¹
*¹Inter-university Semiconductor Research Center and Department of
Electrical and Computer Engineering, Seoul National University,
²Department of Electronic Engineering, Gachon University*
- TG3-F-8 16:55-17:10 Thyristor Technology for Ultra-sharp-switching Logic and
Capacitorless Dynamic Random-access Memory (DRAM)
Applications**
Seongjae Cho^{1,2}
*¹Department of Electronic Engineering, Gachon University, ²Graduate
School of IT Convergence Engineering, Gachon University*

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J. Nano-Science & Technology 분과

Room H
육백 I (6층)

2016년 2월 23일(화) 15:10-17:10

[TH3-J] Graphene and Related Carbon Nanostructures

좌장 : Steve Park(KAIST), 황동목(성균관대학교)

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| TH3-J-1 | 15:10-15:40 | [초청] Catalytic Growth of 2D Carbon Monolayer with Controlled Crystallinity: from Amorphous to Single-crystal
Dongmok Whang
<i>School of Advanced Materials Science and Engineering, SKKU
Advanced Institute of Nanotechnology, Sungkyunkwan University</i> |
| TH3-J-2 | 15:40-15:55 | Origin of High-energy Kinks in the σ Bands of Graphene
Sung Won Jung ^{1,2} , Jimin Kim ^{1,2} , Woo Jong Shin ^{1,2} , and Keun Su Kim ^{1,2}
<i>¹Center for Artificial Low Dimensional Electronic Systems, Institute for
Basic Science, ²Department of Physics, Pohang University of Science
and Technology</i> |
| TH3-J-3 | 15:55-16:10 | Stretchable, Transparent and Ultrasensitive Strain Sensor based on Carbon Nanotube for Human-Machine Interface
Eun Roh, Byeong Ung Hwang, Doil Kim, Bo-Yeong Kim, and Nae-Eung Lee
<i>SKKU Advanced Institute of Nanotechnology, Sungkyunkwan
University</i> |
| TH3-J-4 | 16:10-16:25 | Atomic Layer Deposition of Ultrathin Metal Oxide Films on Graphene Incorporated Device in a Wafer Scale
Seong-Jun Jeong ¹ , Jinseong Heo ¹ , Hyowon Kim ¹ , Yeahyun Gu ² ,
Jaehyun Yang ² , Hyoungsub Kim ² , Min-Hyun Lee ¹ , Hyun Jae Song ¹ ,
Chang-Seok Lee ¹ , Jiyeon Ku ¹ , Yunseong Lee ¹ , Yeonchoo Cho ¹ , Woojin
Jeon ¹ , Sungwoo Hwang ¹ , and Seongjun Park ¹
<i>¹Device Laboratory, DS Center, Samsung Advanced Institute of
Technology, ²Department of Materials Science and Engineering,
Sungkyunkwan University</i> |
| TH3-J-5 | 16:25-16:40 | Graphene/High-κ/p-Si Junctions: A Theoretical and Experimental Study
Jaewoo Shim and Jin-Hong Park
<i>School of Electronics and Electrical Engineering, Sungkyunkwan
University</i> |
| TH3-J-6 | 16:40-16:55 | Atomic Layer Etching of a MoS₂ Film
Kihyun Kim ¹ , Kiseok Kim ¹ , Kyongnam Kim ¹ , and Geunyoung Yeom ^{1,2}
<i>¹Department of Advanced Materials Science and Engineering,
Sungkyunkwan University, ²SKKU Advanced Institute of Nano</i> |

The 23rd Korean Conference on Semiconductors (KCS 2016)

제23회 한국반도체학술대회

2016년 2월 22일(월)-24일(수), 강원도 하이원리조트

Technology (SAINT), Sungkyunkwan University

TH3-J-7 16:55-17:10 Atomic Layer Deposition of Mesocrystalline Hf-Al-O Thin Film by using Phase Transition Engineering for High Performance Metal Oxide Graphene Field-Effect-Transistor
Yunseong Lee, Woojin Jeon, Min-Hyun Lee, Sanghyun Jo, Seongjun Park, and Seong-Jun Jeong
Device Laboratory, Device and System Center, Samsung Advanced Institute of Technology

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N. VLSI CAD 분과

Room I
육백II(6층)

2016년 2월 23일(화) 15:10-17:10

[TI1-N] Advances in Design Technology

좌장 : 이종은(UNIST), 김영민(광운대학교)

TI1-N-1	15:10-15:25	Power Grid and Bump Optimization for Minimizing IR Drop in an Early Design Stage Minjee Lee, Yongchan Ban, Changseok Choi, Kyeongmin Kim, Yongseok Kang, and Woohyun Paik <i>System IC R&D Center, LG Electronics Inc.</i>
TI1-N-2	15:25-15:40	Framework of Scan Mode IR-Drop Simulation with Accuracy Kyeongmin Kim, Yongchan Ban, Minjee Lee, Changseok Choi, Yongseok Kang, and Woohyun Paik <i>System IC R&D Center, LG Electronics Inc.</i>
TI1-N-3	15:40-15:55	Automatic Placement for Directed Self-Assembly Lithography 정우현, 심성보, 신영수 <i>KAIST 전기및전자공학부</i>
TI1-N-4	15:55-16:10	Optimizing the Number of Routing Tracks for Timing Closure and Circuit Area Inhak Han and Youngsoo Shin <i>School of Electrical Engineering, KAIST</i>
TI1-N-5	16:10-16:25	Optimizing Timing Margin for Timing Closure, Area, and Power Inhak Han, Jinwook Jung, and Youngsoo Shin <i>School of Electrical Engineering, KAIST</i>
TI1-N-6	16:25-16:40	Pin Congestion-aware Legalization for Area Efficiency Taeil Kim, Sungmin-Bae, Hyung-Ock Kim, Jung Yun Choi, Sungho Park <i>Samsung Electronics Co., Ltd.</i>
TI1-N-7	16:40-16:55	Path Ordering for Delay Testing under Process Variation Heetae Kim, Jaeil Lim, Inhyuk Choi, Hyunggoy Oh, and Sungho Kang <i>Department of Electrical and Electronic Engineering, Yonsei University</i>

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K. Memory (Design & Process Technology) 분과

Room J

청옥 I (6층)

2016년 2월 23일(화) 15:10-17:10

[TJ3-K] Circuit Related Topics and Memory Selectors

좌장 : 김택승(SK 하이닉스), 이중호(용인대학교)

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| TJ3-K-1 | 15:10-15:25 | Origin of Leakage Current of NbO_x Film and Improved Threshold Switching Characteristics of Multi-layer NbO_x Selector
JaeHyuk Park, Euijun Cha, Sangheon Lee, Jeonghwan Song, Jaesung Park, and Hyunsang Hwang
<i>Department of MS&E, Pohang University of Science and Technology</i> |
| TJ3-K-2 | 15:25-15:55 | [초청] Neuromorphic Crossbar Circuits of Memristors
송재상, Son Ngoc Truong, 양원선, 민경식
<i>국민대학교 전자공학부</i> |
| TJ3-K-3 | 15:55-16:10 | Double Layer-Stacked 1D1R Crossbar Array Integrating Diode Selector with Rectification Ratio of ~10⁹
Kyung Jean Yoon, Yeong Jae Kwon, Sijung Yoo, Jung Ho Yoon, Hye Jin Kim, Dae Eun Kwon, Seul Ji Song, Tae Hyung Park, and Cheol Seong Hwang
<i>Department of Materials Science and Engineering and Inter-university Semiconductor Research Center, Seoul National University</i> |
| TJ3-K-4 | 16:10-16:25 | 결함 지도를 이용한 직교 라틴 방진 부호 기반의 저전력 메모리
김동현, 양준성
<i>성균관대학교 반도체디스플레이공학과</i> |
| TJ3-K-5 | 16:25-16:40 | Design of Embedded ReRAM Macros for 40nm Logic Process
Yong-Seop Lee ¹ , Soo-Gil Kim ² , Do-Hee Kim ¹ , and Sung-Kun Park ¹
¹ System IC Platform Technology Development Team, SK hynix Inc.,
² NM Process Development Group, SK hynix Inc. |
| TJ3-K-6 | 16:40-16:55 | A Scalable Memory Array Architecture for Restricted Boltzmann Machines
Yunju Choi, Seung-Heon Baek, and Jaeha Kim
<i>Department of Electrical and Computer Engineering, Seoul National University</i> |
| TJ3-K-7 | 16:55-17:10 | Performance Improvement of ReRAM Device using Low Temperature Silicon Nitride Spacer
Jong Chul Lee, Hyo June Kim, Sung Kyu Min, Ja Chun Ku, Soo Gil Kim, and Hyeong Soo Kim
<i>New Memory process development Team, R&D Division SK hynix Inc.</i> |

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E. Compound Semiconductors 분과

Room K

청옥Ⅱ+Ⅲ(6층)

2016년 2월 23일(화) 15:10-17:10

[TK3-E] Advanced GaN Technology

좌장 : 권혁인(중앙대학교), 김규상(상지대학교)

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| TK3-E-1 | 15:10-15:25 | Fabrication and Characterization of GaN Vertical Nanowire FET
Chan Heo, Young-Woo Jo, Dong-Hyeok Son, Chul-Ho Won, Ryun-Hwi Kim, Quan Dai, Jae-Hwa Seo, In Man Kang, and Jung-Hee Lee
<i>Department of Sensor and Display Engineering, Graduate School, Kyungpook National University</i> |
| TK3-E-2 | 15:25-15:40 | 스위칭 전원회로용 Normally-off GaN-FET를 위한 캐스코드 회로 분석
정동윤, 이현수, 박영락, 김민기, 장현규, 전치훈, 고상춘, 남은수
<i>한국전자통신연구원 정보통신 부품소재연구소 GaN전력소자연구실</i> |
| TK3-E-3 | 15:40-15:55 | Flexible III-V Compound LED for the Future Consumer Electronics
Seung Hyun Lee, Han Eol Lee, and Keon Jae Lee
<i>Department of Materials Science and Engineering, KAIST</i> |
| TK3-E-4 | 15:55-16:10 | Steep Subthreshold Swing below 60mV/dec from AlGaIn/GaN FinFET
Young-Woo Jo, Dong-Hyeok Son, Chan Heo, Chul-Ho Won, Hee-Sung Kang, Ki-Sik Im, Jae Hwa Seo, In Man Kang, and Jung-Hee Lee
<i>School of electronics engineering, Kyungpook National University</i> |
| TK3-E-5 | 16:10-16:25 | 1/f -Noise Characteristics of Omega-shaped AlGaIn/GaN Nanowire FETs
Sindhuri Vodapally 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> |
| TK3-E-6 | 16:25-16:40 | Interrelations between Performance Parameters of InGaIn/AlGaIn Near-Ultraviolet LEDs Depending on Strain Variation
A.B.M. Hamidul Islam ¹ , Hyo-Shik Choi ¹ , Dong-Soo Shin ² , and Jong-In Shim ¹
¹ <i>Department of Electronics and Communication Engineering, Hanyang University,</i> ² <i>Department of Applied Physics and Department of Bionanotechnology, Hanyang University</i> |

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Room E

컨벤션홀 L(5층)

2016년 2월 23일(화) 17:10-18:30

[TP1] Poster I

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|-------|-------------|--|
| TP1-1 | 17:10-18:30 | Characteristics of Micro-channel Liquid Cooling System with Various Metal Heat Spreaders and Coolants
Yonghyun Won ¹ , Sungdong Kim ² , and Sarah Eunkyung Kim ¹
<i>¹Graduate School of NID Fusion Technology, Seoul National University of Science and Technology, ²Department of Mechanical System Design Engineering, Seoul National University of Science and Technology</i> |
| TP1-2 | 17:10-18:30 | Optimizing Latch Design to Improve the Warpage of Ultra-thin Packaged Chips after Thermocompression Reliability Test
Keonghwan Oh ¹ , Chul Keu Yoon ² , Jae Hyun Son ² , Cheol Woo Han ² , and Sarah Eunkyung Kim ¹
<i>¹Graduate school of NID Fusion Technology, Seoul National University of Science and Technology, ²Interconnection Product & Technology, Manufacturing and Technology, SK hynix Inc.</i> |
| TP1-3 | 17:10-18:30 | Aging and Gas Purging Effect on Sonochemical Surface Activation for Cu Electroless Deposition
Kanghoon Kim, Seonok Jin, Hyeonjoon Lee, Youngkwang Kim, and Oh Joong Kwon
<i>Department of Energy and Chemical Engineering, Incheon National University</i> |
| TP1-4 | 17:10-18:30 | Sonochemical Pd Seeding Method for Cu Electroless Filling
Kanghoon Kim, Hyun Ji Choi, Hyeonjoon Lee, Youngkwang Kim, and Oh Joong Kwon
<i>Department of Energy and Chemical Engineering, Incheon National University</i> |
| TP1-5 | 17:10-18:30 | Cobalt Titanium Nitride Grown by Atomic Layer Deposition as a Diffusion Barrier for Cu Interconnect
Taewook Nam ¹ , Soohyeon Kim ¹ , Chang Wan Lee ¹ , Daewon Hong ² , Hyungjun Kim ¹ , and Han-Bo-Ram Lee ³
<i>¹School of Electrical and Electronic Engineering, Yonsei University, ²The Dow Chemical Company, USA, ³Department of Materials Science and Engineering, Incheon National University</i> |
| TP1-6 | 17:10-18:30 | Improvements in Ink-synthesized Cu-gate Thin Film Transistor with TaN Diffusion Barrier
Whang Je Woo, Taewook Nam, and Hyungjun Kim
<i>School of Electrical and Electronic Engineering, Yonsei University</i> |

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- TP1-7 17:10-18:30 **탄소나노튜브와 탄성고분자를 이용한 신축가능한 전극 개발**
이소영^{1,2}, 심형철², 현승민², 이후정¹
¹성균관대학교, ²한국기계연구원
- TP1-8 17:10-18:30 **Fabrication of Flexible and Printable Sb₂Te₃ Inorganic/Organic Hybrid Thermoelectric Film**
Haesun Shin, Yonghoo, and Hoojeong Lee
Department of Advanced Materials Science and Engineering, Sungkyunkwan University
- TP1-9 17:10-18:30 **그래핀 저온 합성 공정을 이용한 구리/그래핀 구조 제작 및 배선 특성**
손명우¹, 이한결², 김기현², 함문호^{1,2}
¹광주과학기술원 나노바이오재료전자공학과, ²광주과학기술원 신소재공학부
- TP1-10 17:10-18:30 **필링속도가 스크린 프린팅 Ag/Polyimide의 계면접착력에 미치는 영향**
손기락, 이현철, 박영배
안동대학교 신소재공학부 청정에너지 소재기술연구센터
- TP1-11 17:10-18:30 **3차원 칩 적층을 위한 Cu/Ni/Sn-Ag 미세범프의 Ni 확산방지층 및 솔더의 두께가 계면반응에 미치는 영향**
김가희, 박규태, 이진아, 손기락, 박영배
안동대학교 신소재공학부 청정에너지 소재기술연구센터
- TP1-12 17:10-18:30 **Ruthenium Thin Films by Atomic Layer Deposition using New Zero Valent Ru Precursors as a Seed Layer for Cu Metallization**
Min Young Lee¹, Seung-Joon Lee¹, Taehoon Cheon^{1,2}, Tae Eun Hong³, Wonyong Koh⁴, and Soo-Hyun Kim¹
¹*School of Materials Science and Engineering, Yeungnam University,*
²*Center for Core Research Facilities, Deagu Gyeonbuk institute of Science & Technology,* ³*Busan Center, Korea Basic Science Institute,* ⁴*UP Chemical*
- TP1-13 17:10-18:30 **Comparative Study on Al₂O₃ Films Deposited by Atomic Layer Deposition using a New Al Metallorganic Precursor and H₂O and O₂ Molecules as a Reactant**
Byeonghyeon Jang¹, Hyunjung Lee¹, Tae Eun Hong², Donghak Jang³, Sojeong Yeo³, Jungwoo Park³, and Soo-Hyun Kim¹
¹*School of Materials Science and Engineering, Yeungnam University,*
²*Busan Center, Korea Basic Science Institute,* ³*Hansol Chemical Co.*
- TP1-14 17:10-18:30 **Hybrid Active Layer TFT of IGZO with AgNWs for Improving Carrier Mobility by Sol-gel Process**
Tae-yil Eom¹, Hyena Kwak², Jun-gu Kang², Sun-ho Kim², and Hoo-jeong Lee¹
¹*SKKU Advanced Institute of Nano Technology, SungKyunkwan University,* ²*School of Advanced Materials Science and Engineering, SungKyunkwan University*

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- TP1-15 17:10-18:30 Ru-Mn Alloy Thin Films by Atomic Layer Deposition using a Bi-metallic Metalorganic Precursor for a Cu Direct-plateable Diffusion Barrier**
Soonyoung Jung¹, Hyun-Jung Lee¹, Taehoon Cheon^{1,2}, Tae Eun Hong³, Ryosuke Harada⁴, Shunichi Nabeya⁴, and Soo-Hyun Kim¹
¹*School of Materials Science and Engineering, Yeungnam University,* ²*Center for Core Research Facilities, Deagu Gyeonbuk Institute of Science and Technology,* ³*Busan Center, Korea Basic Science Institute,* ⁴*Tanaka Precious Metals, Japan*
- TP1-16 17:10-18:30 Tantalum Nitride Thin Films Deposited by Atomic Layer Deposition using a Tert-Butylimido-Tris-Ethylmethyamido-Tantalum(TBTEMT) Precursor as a Photoanode for Water Splitting**
Seungmin Yeo¹, Byeong Hyeon Jang², Seungtaeg Oh³, Jihun Oh³, Soo-Hyun Kim², and Hyungjun Kim¹
¹*School of Electrical and Electronic Engineering, Yonsei University,* ²*School of Materials Science and Engineering, Yeungnam University,* ³*Graduate School of Energy Environment Water and Sustainability, KAIST*
- TP1-17 17:10-18:30 도핑된 그래핀과 금속전극 간의 접촉저항 향상**
최동철, 정종완, 정운영, 김민우
세종대학교 나노신소재공학과 나노소자연구실
- TP1-18 17:10-18:30 Method for Forming Flexible and Porous Layer-by-Layer Materials Having Low Dielectric Constant**
Daekyun Jeong, Jiwon Lee, and Jaegab Lee
School of Advanced Materials Engineering, Kookmin University
- TP1-19 17:10-18:30 Adhesion Improvement between Prepreg and BaTiO₃ by Plasma Press**
Doosan Kim¹, Mu Kyeom Mun¹, and Geunyoung Yeom^{1,2}
¹*Department of Advanced Materials Science and Engineering, Sungkyunkwan University,* ²*SKKU Advanced Institute of Nano Technology, Sungkyunkwan University*
- TP1-20 17:10-18:30 Development of Integrated Transceiver for Vehicle Network System using Surface Mount Technology**
Tae ho Lee¹, Choul jun Kang³, Sang yub Lee³, and Myung yung Jeong^{1,2}
¹*BK²¹+ Nano-integrated Cogno-mechatronics Engineering, Pusan National University,* ²*Department of Cogno-mechatronics Engineering, Pusan National University,* ³*IT Application Research Center, Korea Electronics Technology Institute*
- TP1-21 17:10-18:30 Atomic Layer Deposition of Cobalt Thin Film for Cobalt Silicide Formation**
Wan-Gyu Lim¹, Jae-Min Park¹, Jae-Won Lee², Wonyong Koh², and Won-Jun Lee¹
¹*Department of Nanotechnology and Advanced Materials Engineering, Sejong University,* ²*UP Chemical Co., Ltd.*

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- TP1-22 17:10-18:30 The Si-photonic Optical Packaging by Embedding of VCSEL in SOI Wafer**
Seong-Hwan Kim, Jong-Hun Kim, and Hyo-Hoon Park
KAIST
- TP1-23 17:10-18:30 Characterization of P-type SnO Thin Films with SnO/Sn Composite Target for Transparent Device Applications**
Cheol Kim¹, Sungdong Kim², and Sarah Eunkyung Kim¹
¹Graduate School of NID Fusion Technology, Seoul National University of Science and Technology, ²Department of Mechanical System Design Engineering, Seoul National University of Science and Technology
- TP1-24 17:10-18:30 Preparation and Characterization of Ferroelectric Hf_{0.5}Zr_{0.5}O₂ Films by RF-Sputtering Method**
Young Hwan Lee, Min Hyuk Park, Yu Jin Kim, Han Joon Kim, Taehwan Moon, Keum Do Kim, Seung Dam Hyun, and Cheol Seong Hwang
Department of Materials Science and Engineering and Inter-university Semiconductor Research Center(ISRC), Seoul National University
- TP1-25 17:10-18:30 Equivalent Oxide Thickness Scaling for Hybrid Dielectric Thin Film without using Noble Metal Electrode**
Ji-Hoon Ahn
Department of Electronic Material Engineering, Korea Maritime and Ocean University
- TP1-26 17:10-18:30 The Effect of Al Concentration on Resistive Switching Random Access Memory Implemented Solution-processed Al-Zn-Sn-O Thin Film**
Kwang-Won Jo and Won-Ju Cho
Department of Electrical Material Engineering, Kwangwoon University
- TP1-27 17:10-18:30 Pulsed Laser-Induced N-doped Graphene Growth on SiC substrate**
Tae Hong Im and Keon Jae Lee
Department of Materials Science and Engineering, KAIST
- TP1-28 17:10-18:30 Carrier Suppressing Effect of Zr in Solution-Derived In-Zn-O based Thin-Film Transistor and Instability Improvement by Microwave Irradiation**
Do-Hoon Kim and Won-Ju Cho
Department of Electrical Material Engineering, Kwangwoon University
- TP1-29 17:10-18:30 Diode Characteristics of Amorphous MoS₂ Grown on p-Si Wafer by Atomic Layer Deposition**
Seokhee Shin, Zhenyu Jin, Seungju Han, DongHyun Ko, Ranjith Bose, and Yo-Sep Min
Department of Chemical Engineering, Konkuk University
- TP1-30 17:10-18:30 The Statistical Analysis of Energy Consumption of Organic Non-volatile Resistive Memory Devices on Flexible PEN Substrate**
Jingon Jang, Younggul Song, Daekyoung Yoo, Kyungjune Cho, Youngrok Kim, Jinsu Pak, Misook Min, and Takhee Lee

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Department of Physics and Astronomy, Seoul National University

- TP1-31 17:10-18:30 Reliability Study of Organic Memory at Elevated Temperature**
Youngrok Kim, Daekyoung Yoo, Jingon Jang, Younggul Song, Hyunhak Jeong, Wang-Taek Hwang, Woocheol Lee, and Takhee Lee
Department of Physics and Astronomy, Seoul National University
- TP1-32 17:10-18:30 Growth and Characterization of ZnO Thin Films Grown by Atomic Layer Deposition from Diethylzinc and 1, 5-pentanediol**
Seung-Joo Han, Seokhee Shin, Zhenyu Jin, Donghyun Ko, and Yo-Sep Min
Department of Chemical Engineering, Konkuk University
- TP1-33 17:10-18:30 Study on the Low Thermal Budget Annealing Technique for High Performance Amorphous In-Ga-ZnO Thin Film Transistors**
Hyun-Woo Lee and Won-Ju Cho
Department of Electrical Materials Engineering, Kwangwoon University
- TP1-34 17:10-18:30 Electrical Characteristics of the Channel Engineered amorphous IGZO Thin Film Transistors with ITO Embedded Conductive Layer**
Se-Yeon Hwang and Won-Ju Cho
Department of Electronic Materials Engineering, Kwangwoon University
- TP1-35 17:10-18:30 High-performance Amorphous In-Ga-Zn-O Thin-film Transistor with Off-planed Dual-work Function Source/Drain Structure**
Seung-Tae Kim and Won-Ju Cho
Department of Electronic Materials Engineering, Kwangwoon University
- TP1-36 17:10-18:30 Comparison of Different Organic Materials for Inorganic-organic Hybrid Insulator in the Organic Thin Film Transistor**
Hyeong Jun Cho¹, Dong-Hoon Lee¹, Eung-Kyu Park¹, Sihan Wang¹, Sungruel Kwon², Ye Ji Lee², Dongguen Jung², and Yong-Sang Kim¹
¹*School of Electronic and Electrical Engineering, Sungkyunkwan University, ²Department of Physics, Sungkyunkwan University*
- TP1-37 17:10-18:30 Indium-Zinc-Oxide Thin Film Transistor based PBD**
Ju-song Eom, Won-you Kim, Shan Fei, and Sung-jin Kim
College of Electrical and Computer Engineering, Chungbuk National University
- TP1-38 17:10-18:30 Oxide Transistor Fabricated by UV Assisted Spin Coating**
Won-You Kim, Ju-Song Eom, Shan Fei, and Sung-Jin Kim
College of Electrical and Computer Engineering, Chungbuk National University
- TP1-39 17:10-18:30 Interface Charge Controlled Negative Capacitance in Dielectric/Ferroelectric Thin Films**
Yu Jin Kim, Min Hyuk Park, Han Joon Kim, Taehwan Moon, Keum Do Kim, Cheol Hyun An, Young Hwan Lee, Seung Dam Hyun, and Cheol Seong Hwang
Department of Materials Science and Engineering and Inter-university

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Semiconductor Research Center(ISRC), College of Engineering, Seoul National University

- TP1-40 17:10-18:30 Enhancement of Performance in In-Ga-Zn-O Thin-Film-Transistor using Engineered Gate Dielectrics**
Ju-Young Pyo and Won-Ju Cho
Department of Electrical Materials Engineering, Kwangwoon University
- TP1-41 17:10-18:30 Analysis on the Evolution of the Ferroelectricity in Undoped HfO₂ Films Prepared by Atomic Layer Deposition**
Keum Do Kim, Min Hyuk Park, Yu Jin Kim, Han Joon Kim, Taehwan Moon, Young Hwan Lee, Seung Dam Hyun, and Cheol Seong Hwang
Department of Materials Science and Engineering and Inter-university Semiconductor Research Center, Seoul National University
- TP1-42 17:10-18:30 Low-Thermal-Budget Microwave Annealing for Activation of Phosphorus Doped Metal-Oxide-Semiconductor Field-Effect-Transistors**
Cheol-Min Lim and Won-Ju Cho
Department of Electronic Materials Engineering, Kwangwoon University
- TP1-43 17:10-18:30 Investigation of Passivation Layer Effect on Ge Substrate using SiO₂/Al₂O₃ Bi-Layer Grown via Atomic Layer Deposition**
Dong Gun Kim¹, Jae-Ho Lee¹, Hyun Jae Lee¹, Jung-Hae Choi², and Cheol Seong Hwang¹
¹*Department of Materials Science & Engineering and Inter-university Semiconductor research Center, Seoul National University;* ²*Electronic Materials Research Center, Korea Institute of Science and Technology*
- TP1-44 17:10-18:30 시퀀셜 3차원 집적공정을 위한 고온내성이 향상된 silicide 형성 기술**
Jae Won Choi, Sol Kang, Soo Yeun Han, Dong Hwi Lee, Hyun Joon Bang, and Rino Choi
Department of material science, Inha University
- TP1-45 17:10-18:30 Study on the Ferroelectric Domain Switching Kinetics in Dielectric/Ferroelectric Capacitors**
Seung Dam Hyun, Yu Jin Kim, Min Hyuk Park, Han Joon Kim, Teahwan Moon, Keum Do Kim, Young Hwan Lee, and Cheol Seong Hwang
Department of Material Science and Engineering, Seoul National University
- TP1-46 17:10-18:30 Effects of Deposition Temperature on the Device Characteristics of Oxide Thin-Film Transistors using In-Ga-Zn-O Active Channels Prepared by Atommic-Layer Deposition**
Gi-Ho Seo¹, Nak-Jin Seong², Kyujeong Choi², Woong-Chul Shin², and Sung-Min Yoon¹
¹*Kyung Hee University;* ²*NCD Co., Ltd.*
- TP1-47 17:10-18:30 Resistive-Change Memory Thin-Film Transistor Using Al-doped ZnO**
Won-Ho Lee, Eom-Ji Kim, and Sung-Min Yoon

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Department of Advanced Materials Engineering for Information and Electronics, Kyung Hee University

- TP1-48** **17:10-18:30** **질소도핑된 ZnO를 이용한 그래핀 FET의 On-Off 특성 향상**
김소영, 김윤지, 이상경, 황현준, 허선우, 장경은, 조천흠, 이병훈
Center for Emerging Electric Devices and Systems, School of Material Science and Engineering, Gwangju Institute of Science and Technology
- TP1-49** **17:10-18:30** **Etching Mechanism of SiC, SiO₂ and Si in CF₄/CH₂F₂/N₂/Ar Inductively Coupled Plasma: Effects of Input Power and Gas Pressure**
Jongchan Lee¹, Alexander Efremov², and Kwang-Ho Kwon¹
¹Department of Control and Instrumentation Engineering, Korea University, ²Department of Electronic Devices and Materials Technology, State University of Chemistry and Technology, Russia
- TP1-50** **17:10-18:30** **ASA Simulation을 이용한 박막 결함밀도 변화에 따른 박막 실리콘 태양전지 특성 분석**
김규원
성균관대학교 정보통신대학
- TP1-51** **17:10-18:30** **Positive Bias Temperature Stress Instability for In-Ga-Zn-O Thin-Film Transistors with Variations in Oxygen Partial Pressure during The Sputtering Deposition and Active Layer Thickness**
Han-Byeol Kang and Sung-Min Yoon
Kyung Hee University
- TP1-52** **17:10-18:30** **Effect of Temperature on Silicon Thin Film Deposited by Plasma Enhanced Chemical Vapor Deposition with Disilane**
Seok Hwan Kim^{1,2}, Sungwoo Lee¹, Jongwook Kim¹, Jaeyoung Yang¹, David Lee¹, Keunoh Park¹, Gieung Hur¹, Jaeho Lee¹, Jaichan Lee², and Ki-Seok An³
¹TES Co., Ltd, ²Department of Material Science and Engineering, Sungkyunkwan University, ³Thin Film Materials Research Group, Korea Research Institute of Chemical
- TP1-53** **17:10-18:30** **Positive Bias Illumination Stress Instability in Solution Processed a-IGZO TFTs**
Jongsu Oh, Ji-Hwan Kim, Eung-Kyu Park, Sihan Wang, and Yong-Sang Kim
School of Electronic and Electrical Engineering, Sungkyunkwan University
- TP1-54** **17:10-18:30** **Growth of Semiconducting TaN_x Films by Atomic Layer Deposition and Its Electrical Transport**
Sung Yeon Ryu, Dong Ha Kim, and Byung Joon Choi
Department of Materials Science and Engineering, Seoul National University of Science and Technology

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- TP1-55 17:10-18:30 Comparative Study of AlN Films Grown by Thermal and Plasma-assisted Atomic Layer Deposition**
No Ho Lee, Min Soo Kim, Seong Yu Yoon, Dae Ho Kim, and Byung Joon Choi
Department of Materials Science and Engineering, Seoul National University of Science and Technology
- TP1-56 17:10-18:30 Electrical Property Enhancement of p-type SnO Thin Film Transistor with Al Doping**
An Hoang-Thuy Nguyen¹, Manh-Cuong Nguyen¹, Hyunjoon Bang¹, Donghwi Lee¹, Sol Kang¹, Jae-Won Choi¹, Soo-Yeun Han¹, Hoichang Yang², and Rino Choi¹
¹*Department of Material Science and Engineering, Inha University,*
²*Department of Applied Organic Materials Engineering, Inha University*
- TP1-57 17:10-18:30 Photo-response Characteristics in Polysilicon-Based MSM Photodetector**
Kyeong-Min Kim and Jae-Sung Lee
Division of Green Energy Engineering, Uiduk University
- TP1-58 17:10-18:30 이중 주파수 펄스 CCP에서의 임피던스 변화**
배인식, 장홍영, 설유빈, 이진원, 송호현, 이호형, 박기정
대한민국 한국과학기술원 물리학과
- TP1-59 17:10-18:30 EUV용 펄리클 대안구조로서 그래핀 복합구조 가능성 연구**
김정환¹, 홍성철¹, 조한구², 안진호¹
¹*한양대학교 신소재공학과, ²한양대학교 나노과학기술연구소*
- TP1-60 17:10-18:30 고투과도 SiNx EUV용 펄리클 제작을 위한 HF Thinning 공정 가능성 평가**
김지은¹, 김정환², 홍성철², 조한구³, 안진호^{1,2}
¹*한양대학교 나노융합과학과, ²한양대학교 신소재공학과, ³한양대학교 나노과학기술연구소*
- TP1-61 17:10-18:30 High-k Thin Films on Graphene Surface Using Atomic Layer Deposition**
Yong Hyun Park and Sang Woon Lee
Department of Physics and Division of Energy Systems Research, Ajou University
- TP1-62 17:10-18:30 Silicon Nitride Deposition by VHF (162 MHz)-PECVD Using a Multi Push-Pull Source**
Kiseok Kim¹, Kihyun Kim¹, Kyongnam Kim¹, and Geunyoung Yeom^{1,2}
¹*Department of Advanced Materials Science and Engineering, Sungkyunkwan University, ²Sungkyunkwan Advanced Institute of Nano Technology, Sungkyunkwan University*
- TP1-63 17:10-18:30 Electrical Properties of Sputter-deposited InGaZnO Thin Film Transistors with An Etch Stopper**
Jin Kuk Kim¹, Seong Min Shin¹, Min Taek Hong¹, Byeong Seong Bae¹, and Eui-Jung Yun²

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¹Department of Display Engineering, Hoseo University, ²Department of Information and Communication Engineering, Hoseo University

- TP1-64 17:10-18:30 Novel Fabrication of Lightly Doped-Drain for Suppressing The Leakage Current in Polycrystalline Silicon Thin-Film Transistor**
Hyung Yoon Kim, Jae Hyo Park, Ki Hwan Seok, Zohreh Kiaee, Hee Jae Chae, Sol Kyu Lee, Yong Hee Lee, and Seung Ki Joo
Research Institute of Advanced Materials and Department of Materials Science and Engineering, Seoul National University
- TP1-65 17:10-18:30 Electrical Properties Enhancement with Multi-Gate Structure Metal Induced Lateral Crystallization Poly-Si TFTs.**
Ki Hwan Seok, Jae Hyo Park, Yong Hee Lee, and Seung Ki Joo
Department of Materials Science and Engineering, Seoul National University
- TP1-66 17:10-18:30 Characteristics of IGZO Thin Film Using ICP Assisted Magnetron Sputtering**
Chul Hee Lee¹, Seung Min Lee¹, Tae Hyung Kim¹, Kyong Nam Kim¹, Jeong Oun Bae¹, and Geum Young Yeom^{1,2}
¹Department of Advanced Materials Science and Engineering, Sungkyunkwan University, ²Sungkyunkwan Advanced Institute of Nano Technology, Sungkyunkwan University
- TP1-67 17:10-18:30 Plasma Enhanced Atomic Layer Deposition of High-Mobility In₂O₃ Thin Films from Novel Heteroleptic Indium Precursor**
김효연^{1,2}, 정은애^{1,3}, 박진성², 전동주¹, 문금비⁴, 박상희⁴, 정택모¹, 한정환¹
¹한국화학연구원, ²한양대학교 신소재공학부, ³성균관대학교 화학과, ⁴한국과학기술원 신소재공학과
- TP1-68 17:10-18:30 Low Temperature Atomic Layer Deposition of SnO₂ Thin Films from Novel Sn Precursor and O₂ Plasma**
김효연^{1,2}, 남지현^{1,3}, 박진성², 전동주¹, 정택모¹, 한정환¹
¹한국화학연구원, ²한양대학교 신소재공학부, ³고려대학교 화학과
- TP1-69 17:10-18:30 Deposition of Silicon Oxide Using High Density Plasma Chemical Vapor Deposition for Gap-Filling**
Sin Keun Park¹, Chang-Su Seo¹, Sang-Yeop Jee¹, Yun-Bin Kim¹, Suk-Jin Jung¹, Jong-Seung Park¹, Kang Hyun Noh², Jang Hyun Kim¹, Jong Ho Lee¹, and Cheol Seong Hwang¹
¹Inter-University Semiconductor Research Center, Seoul National University, ²Semi-ence
- TP1-70 17:10-18:30 Fast and Slow Charging of InGaZnO Thin Film Transistor with Metal Cation Concentration**
Minho An, Kyeonggeun Park, Taeho Kim, and Sanghun Jeon
Department of Applied Physics, Korea University
- TP1-71 17:10-18:30 The Specific Contact Resistance of Interfaces ITZO and The Source/Drain Metallization Effects**
Jaewoong-Yoon and Junsin-Yi

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Sungkyunkwan University

- TP1-72 17:10-18:30 Mechanical and Thermal Stability of Organic/Inorganic Hybrid Gate Insulators with Self Assembled Nanoparticles for Flexible Thin Film Transistors**
J. H. Kim¹, J. S. Kim², D. I. Kim², and N.-E. Lee^{1,2,3}
¹Department of Advanced Materials Science and Engineering, Sungkyunkwan University, ²Sungkyunkwan Advanced Institute of Nanotechnology, Sungkyunkwan University, ³Samsung Advanced Institute for Health Sciences and Technology, Sungkyunkwan University
- TP1-73 17:10-18:30 A Flexible Magnetoelectric Field-effect Transistor with Magnetically Responsive Nanohybrid Gate Dielectric Layer**
Nguyen Minh Triet¹, Tran Quang Trung¹, Nguyen Thi Dieu Hien¹, Saqib Siddiqui¹, Do-Il Kim¹, and Nae-Eung Lee^{1,2,3}
¹School of Advanced Materials Science and Engineering, Sungkyunkwan University, ²Sungkyunkwan Advanced Institute of Nanotechnology, Sungkyunkwan University, ³ Samsung Advanced Institute for Health Sciences and Technology, Sungkyunkwan University
- TP1-74 17:10-18:30 Comparison of Performance of Tips Pentacene Based Transistor with Various Insulators**
Seunghyun Park¹, Wooseong Yang¹, Dong-Hoon Lee², and Yong-Sang Kim²
¹Gyeonggi Science High School, ²School of Electronic and Electrical Engineering, Sungkyunkwan University
- TP1-75 17:10-18:30 Characterization of GeSn Deposited on Si by Low-temperature Sputter Epitaxy**
Jeongmin Lee¹, Mina Yun², and Seongjae Cho^{1,2}
¹Graduate School of IT Convergence Engineering, Gachon University, ²Department of Electronic Engineering, Gachon University
- TP1-76 17:10-18:30 'Atomistic' Line Edge Roughness (LER) Model for Sub-10-nm CMOS Device Design: Three-Dimensional LER Profiling**
Sangheon Oh, Jaesung Jo, Hyunjae Lee, Youngtaek Lee, and Changwhan Shin
School of Electrical and Computer Engineering, University of Seoul
- TP1-77 17:10-18:30 Investigation of Current Path Variation Effect in Three Dimensional Stack NAND Flash Memory**
Daewoong Kang¹, Hyoungsoo Kim², Asif Ali³, Youngchang Yun⁴, and Il Hwan Cho³
¹Department of Electrical Engineering, University of North Texas, USA, ²Department of Electrical and Computer Engineering, California State Polytechnics University, USA, ³Department of Electronic Engineering, Myongji University, ⁴Qualcomm Technologies, US
- TP1-78 17:10-18:30 The Improvement of Inverse Narrow Width Effect by Optimizing STI Process**

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Seungyong Sung, Sungyeon Hwang, Taeho Lee, Jaegwan Kim, Sunggon Choi, and Inwook Cho
System IC Platform Technology Development, SK hynix Inc.

- TP1-79 17:10-18:30 Steep Subthreshold Swing Operation of Bendable Feedback Field-Effect Transistors with Si Nanowires**
Youngin Jeon, Minsuk Kim, Doohyeok Lim, and Sangsig Kim
Department of Electrical Engineering, Korea University
- TP1-80 17:10-18:30 Easy and Cost-effective Integration of Negative Capacitance for Low Power MOSFET**
HoSeung Jeon and Wan-Gyu Lee
Advanced Process Development, National NanoFab Center
- TP1-81 17:10-18:30 Impact of Metal Nitride on Contact Resistance in Metal-Interlayer-Semiconductor Source/Drain**
Juhan Ahn and Hyun-Yong Yu
Department of Electrical Engineering, Korea University
- TP1-82 17:10-18:30 Capacitance-Voltage Analysis of Al₂O₃/In_{0.53}Ga_{0.47}As Metal-Oxide-Semiconductor Structure**
Woo Chul Lee¹, Cho Cheol Jin¹, Jung Joon Pyeon¹, Cheol Seong Hwang², and Seong Keun Kim¹
¹Center for Electronic Materials, Korea Institute of Science and Technology, ²Department of Materials Science, Engineering and Inter-University Semiconductor Research Center, Seoul National University
- TP1-83 17:10-18:30 Tunnel FET의 고유한 열화메커니즘에 관한 연구**
김승모, 정욱진, 임성관, 강수철, 이병훈
Center for Emerging Electric Devices and Systems, School of Material Science and Engineering, Gwangju Institute of Science and Technology
- TP1-84 17:10-18:30 고전력 고효율 SIMO 직류 변환기의 스위치 on 저항 최적화**
김재윤
연세대학교 전기전자공학부
- TP1-85 17:10-18:30 FinFET LNA Design using Accurate Device RC Parasitic Models**
Seung Ik Jeong and So Young Kim
College of Information and Communication Engineering, Sungkyunkwan University
- TP1-86 17:10-18:30 Achieving Telecommunication Frequency Emission from Ge on Si by Thermal Annealing**
Chulwon Lee¹, Bugeun Ki², Yang-Seok Yoo¹, Min-Ho Jang¹, Seung-Hyuk Lim¹, Jungwoo Oh², and Yong-Hoon Cho¹
¹Department of Physics and KI for the NanoCentury, KAIST, ²School of Integrated Technology, Yonsei University
- TP1-87 17:10-18:30 The Study on Dopant Activation and Physical Properties in Si_{1-x}Gex Layers with Excimer Laser Annealing**
Youngmo Kim, Sungyeol Yoon, Jiwoo Park, Juyoung Jeong, and

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Hyunchul Sohn
Department of Materials Science and Engineering, Yonsei University

- TP1-88 17:10-18:30 Thermal Effect Modeling of Fin Field Effect Transistors**
장문용, 김소영
성균관대학교 정보통신공학부
- TP1-89 17:10-18:30 3차원 시뮬레이션을 이용한 FinFET과 Planar FET의 양전압 온도 불안정성 특성 비교 분석**
서영수, 김현수, 김종수, 신형철
Inter-University Semiconductor Research Center and School of Electrical Engineering and Computer Science, Seoul National University
- TP1-90 17:10-18:30 3D TCAD를 이용한 4층의 Nanowire-FET에서의 Sheet 저항 추출 방법**
고형우, 서영수, 김현수, 김종수, 신형철
Inter-University Semiconductor Research Center and School of Electrical Engineering and Computer Science, Seoul National University
- TP1-91 17:10-18:30 AC NBTI Modeling for Circuit Simulation**
이영곤, 조원구, 최병길, 박흥식, 김미란, 장태영, 이창렬, 이석규
Device Modeling and Reliability Division, SK hynix Inc.
- TP1-92 17:10-18:30 NBTI Turn-around 현상 메커니즘 분석 및 열화 모델링**
장태영, 박흥식, 이정현, 최형규, 이영곤, 유승원, 이창렬, 이석규
SK 하이닉스, 미래기술연구원, DMR팀
- TP1-93 17:10-18:30 A Guideline for Electron Mobility Enhancement in Uniaxially-strained (100)/<100> and (110)/<110> FinFETs**
Sujin Choi, Wookyung Sun, and Hyungsoon Shin
Department of Electronics Engineering, Ewha Womans University
- TP1-94 17:10-18:30 Effect of Different Insulating Materials and Channel Materials on The Ratio of TAT Current in DRAM Cell Transistors**
¹Hye Ran Jang, ²Sung-Won Yoo, ²Sangbin Jeon, ³Joonha Shin, ⁴Changhwan Shin, and ²Hyungcheol Shin
¹School of Physics Education, Seoul National University, ²Inter University Semiconductor Research Center and School of Electrical Engineering and Computer Science, Seoul National University, ³Seoul Science High School, ⁴School of Electrical and Computer Engineering, University of Seoul
- TP1-95 17:10-18:30 Evaluation of Pixel-to-Pixel Isolation at CMOS Image Sensor by using Electrical X-talk Simulation**
Hyungjoon Shim¹, Kwang Hwangbo², Sun-ha Hwang², Sungbo Hwang², Sang-Yong Kim¹, Seokkiu Lee¹, and Inwook Cho²
¹Device Modeling and Reliability Division, SK hynix Inc., ²System IC Platform Technology Development, SK hynix Inc.
- TP1-96 17:10-18:30 In Depth Study of Quasi-static Latch-up Phenomenon Through Geometric Effect and Optimization for High Speed I/O**

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Chang Hwi Lee, Joungcheul Choi, and Hongwook Lim
SK hynix Inc.

- TP1-97** **17:10-18:30** **Impact of Gate Shape and Thickness in 3D Vertical-gate NAND Flash**
Dasom Lee, Eunmee Kwon, and MinsooKim
SK hynix Inc.
- TP1-98** **17:10-18:30** **Analysis of EEPROM Characteristics on Tunneling Gate Doping Structure**
Hyangeun Lee, Kwangil Choi, Namyoon Kim, Sunggon Choi, and Inwook Cho
Development of System IC Platform Technology, SK hynix Inc.
- TP1-99** **17:10-18:30** **2차원 Paricle-in-cell 방법을 이용한 반도체 제조용 마그네트론 스퍼터링의 전산모사**
허민영, 이정열, 배효원, 이해준
부산대학교 전자전기컴퓨터공학과
- TP1-100** **17:10-18:30** **Self-heating Effect-induced Mobility Degradation in Various Structure Parameters of FinFET**
Taeyeom Ha, Yeon Namkoong, and Yunheub Song
Department of Electronics and Computer Engineering, Hanyang University
- TP1-101** **17:10-18:30** **Optimization of FinFET Structure for Low-standby Power(LSTP) Application in 14nm and Beyond Generation**
Taehee Kin and Gina Jeong
Department of Electronic Engineering, Ajou University
- TP1-103** **17:10-18:30** **First-principles Study on Charge Trap Level in Amorphous Si₃N₄**
Gijae Kang, Wonseok Jeong, and Seungwu Han
Department of Materials Science and Engineering, Seoul National University
- TP1-104** **17:10-18:30** **Study of Measurement Method to Judge Subthreshold Hump of MOSFET**
Sun-Ho Oh, Sung-Gon Choi, Seung-Yun Hwang, Min-ki Na, Kwang-Duk Kim, Sung-Bo Hwang, and In-Wook Cho
System IC Platform Technology Development Team, SK hynix Inc.
- TP1-105** **17:10-18:30** **New Robust Schottky Barrier Diodes of Advanced BCD Technology for Integrated Circuits Applications**
Yon-Sup Pang, Hyunchul Kim, Leeyeun Hwang, Sung-Bum Park, Jung Lee, and Taejong Lee
Technology Development Center, MagnaChip Semiconductor
- TP1-106** **17:10-18:30** **Gate Charge Measurement를 통한 Gate Capacitance Modeling**
Sunggon Cho, Pilsoo Lee, Dongjae Lee, and Seokki Lee
Device Modeling and Reliability Team, SK hynix Inc.

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- TP1-107 17:10-18:30 FinFET의 Bipolar AC Stress에 의한 Reliability 특성**
강수철, 김용훈, 정욱진, 박우진, 김승모, 이병훈
Center for Emerging Electric Devices and Systems, School of Material Science and Engineering, Gwangju Institute of Science and Technology
- TP1-108 17:10-18:30 Simulation Study of Double-Gate Tunnel Dielectric-based Tunnel FET**
Sangchun Park, Junbeom Seo, Woo Jin Jeong, and Mincheol Shin
School of Electrical Engineering, KAIST
- TP1-109 17:10-18:30 Junction Temperature Control Method for Accelerated Power Cycling Life Test of Power Semiconductor**
최성순, 이우영, 노성대, 이관훈
전자부품연구원 신뢰성연구센터
- TP1-110 17:10-18:30 Modeling of the Polysilicon Channel Process of Vertical NAND Flash Memory using Phase-field Method**
Jong-Hyuk Lee and Yongwoo Kwon
Department of Materials Science and Engineering, Hongik University
- TP1-111 17:10-18:30 The Study for A Hybrid Simulation with Ar/O₂ Gas in A Capacitively Coupled Plasmas**
Jin Seok Kim, Ho young Kim, Ho-Jun Lee, and Hae June Lee
Department of Electrical Computer Engineering, Pusan National University
- TP1-112 17:10-18:30 Defect Density Analysis of HfInZnO Thin Film Transistor**
Youngin Goh, Hyunsuk Woo, Minho Ahn, Taeho Kim, and Sanghun Jeon
Department of Applied Physics, Korea University
- TP1-113 17:10-18:30 Fade Detection Through The Luminance Transition Neighboring Monochromatic Frame**
Sangho Yoon and Young Hwan Kim
Department of Electrical Engineering, Pohang University of Science and Technology
- TP1-114 17:10-18:30 The Capacitor-Less Type LED Lighting with A CdS Cell**
Sang-Won Lee, Hye-Jung Jang, Jung-Kyu Lee, Jin-Kyo Jung, Byung-Tak Jang, and Choong-Mo Nam
Department of Electronics Engineering, Korea Polytechnic University
- TP1-115 17:10-18:30 The Characteristics of Transparent FPCB for a LED Display**
So-Young Baek, Seong-Hwa Lee, Tae-Hoon Lee, Byung-Tak Jang, and Choong-Mo Nam
Department of Electronics Engineering, Korea Polytechnic University
- TP1-116 17:10-18:30 Self-selective Coating by Surface Energy Difference for Direct Patterning**
Mu Kyeom Mun¹, Do San Kim¹, and Geun Young Yeom^{1,2}
¹*Department of Materials Science and Engineering, Sungkyunkwan*

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University, ²Sungkyunkwan Advanced Institute of Nano Technology, Sungkyunkwan University

- TP1-117 17:10-18:30 Multiple Annealing Temperature Dependency on Reliability of Multilayer MoS₂ Field Effect Transistors**
Jae Hyeon Ryu, Geun Woo Baek, Gi Taek Yu, Hyeun Woo Kim, and Sung Hun Jin
Department of Electronic Engineering, Incheon National University
- TP1-118 17:10-18:30 Amorphous Metal-based High Sensitive Pressure Sensor for Robot-skin**
Minhyun Jung¹, Taeho Kim¹, Kyungkwan Kim², and Sanghun Jeon^{1,2}
¹Department of Applied Physics, Korea University, ²Department of Display and Semiconductor Physics, Korea University
- TP1-119 17:10-18:30 Analysis and Modeling on the PH-dependent Current Drift of Si Nanowire Ion-sensitive Field Effect Transistor (ISFET)-based Biosensors**
Jungkyu Jang¹, Jungmok Kim¹, Hyun-Sun Mo¹, Jung Han Lee², Byung-Gook Park², Sung-Jin Choi¹, Dong Myung Kim¹, Dae Hwan Kim^{1,2}, and Jisun Park¹
¹School of Electrical Engineering, Kookmin University, ²Inter-University Semiconductor Research Center, Seoul National University
- TP1-120 17:10-18:30 A New Sacrificial Method using Polyimide and Copper**
H. Cheon¹, S. Hong¹, M. Lee¹, Y. Park¹, T. Kim², and D. Cho¹
¹Automation and Systems Research Institute/Inter-University Semiconductor Research Center, Department of Electrical and Computer Engineering, Seoul National University, ²Quantum Technology Lab, SK Telecom Co., Ltd.
- TP1-121 17:10-18:30 The Development of the Atmospheric Pressure Micro Plasma-jet Nozzle using SOG(Silicon on Glass) Wafer for Surface Modification**
Tae Gyu Park^{1,2}, Gwang Gyu Park², Geunyoung Kim², Ok Chan Jeong³, and Dong-Chul Han^{1,2}
¹Korea Bio-IT Foundry Center, Institute of Advanced Machines and Design, Seoul National University, ²AMED Inc., ³Biomedical Engineering, Inje University
- TP1-122 17:10-18:30 The Surface Hydrophilic Modification of Contact Lens by Atmospheric Pressure Plasma Treatment**
Tae Gyu Park^{1,2}, Gwang Gyu Park², Geunyoung Kim², Ok Chan Jeong³, and Dong-Chul Han^{1,2}
¹Korea Bio-IT Foundry Center, Institute of Advanced Machines and Design, Seoul National University, ²AMED Inc., ³Inje University Biomedical Engineering
- TP1-123 17:10-18:30 P-type Diffusion Process using Diethyl Zinc for High Sensitivity Infra-red Photodiodes**
Dong-Hwan Jun¹, Hae Yong Jeong¹, Youngjo Kim¹, Chan-Soo Shin¹, Kyungho Park¹, Won-Kyu Park¹, Min-Su Kim³, Sangin Kim², Sang Wook

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Han³, and Sung Moon³

¹Korea Advanced Nano-Fab Center, ²Ajou University, ³Korea Institute of Science and Technology

- TP1-124 17:10-18:30 Development of Self-stabilizing System for Quantum Key Distribution Network**
박병권, 이민수, 우민기, 김용수, 한상욱, 문성욱
Center for Quantum Information, Korea Institute of Science and Technology
- TP1-125 17:10-18:30 Scanning-time Optimization Based on Simulated Annealing for Confocal Microscopy**
Hyunjun Kim^{1,2}, Jiwon Yune¹, Sang-Wook Han¹, and Sung Moon¹
¹Center for Quantum Information, Korea Institute of Science and Technology, ²Department of Electrical and Computer Engineering, Ajou University
- TP1-126 17:10-18:30 Design of Safe and Miniaturized Photo-Diode Based Retinal Implant**
Jeong Hoan Park, Joonsoo Jeong, Sin Young Shim, and Sung June Kim
Department of Electrical and Computer Engineering, Seoul National University
- TP1-127 17:10-18:30 CMOS Image Sensor with Pixel-merged Pseudo Differential Comparator and Up-down DDR Counter**
Chanmin Park, Injun Park, Woojin Jo, and Youngcheol Chae
School of Electrical and Electronic Engineering, Yonsei University
- TP1-128 17:10-18:30 A 6.9-mW, 600-MHz Continuous-Time Sigma-delta Modulator with 20-MHz Signal Bandwidth and 73.1-dB SNDR**
Je-Kwang Cho, Sunsik Woo, Wooyol Lee, and Hyeong-Soo Lee
IP Technology Team, SIC Center, LG Electronics Inc.
- TP1-129 17:10-18:30 A Low-power FeedForward Continuous-time Sigma-delta Modulator without Direct Feedback DAC and Analog Summing Amplifier**
Je-Kwang Cho, Sunsik Woo, Wooyol Lee, and Hyeong-Soo Lee
IP Technology Team, SIC Center, LG Electronics Inc.
- TP1-130 17:10-18:30 A 1.5-V 2.9-mW Analog Front End with a 5-Bit PGA and a 10-Bit ADC for D-TV Analog Audio Demodulation**
Je-Kwang Cho, Jungsuk Shim, Wooyol Lee, and Hyeong-Soo Lee
IP Technology Team, SIC Center, LG Electronics Inc.
- TP1-131 17:10-18:30 Verilog Modeling of 10Gbps Half-Rate Clock and Data Recovery using Injection Locking Oscillator.**
Min-Seong Choo and Deog-Kyoon Jeong
Inter-University Semiconductor Research Center, Seoul National University
- TP1-132 17:10-18:30 High Voltage Input DC-DC Buck Converter using 1 and 2 MHz**

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- PWM Control and Zero Current Detector for Wireless Power Transfer**
Ju-Hyun Park, Joo Young Lee, Young Jun Park, and Kang-Yoon Lee
College of Information and Communication Engineering, Sungkyunkwan University
- TP1-133 17:10-18:30 DLL의 지터량에 따른 클락의 기준점 조절회로**
Sung-Woo Yoon, Xuefan Jin, and Kee-Won Kwon
College of Information and Communication Engineering, Sungkyunkwan University
- TP1-134 17:10-18:30 LVDS Clock Driver with High Precision and Improved Bandwidth**
Jahoon Jin and Jung-Hoon Chun
College of Information and Communication Engineering, Sungkyunkwan University
- TP1-135 17:10-18:30 Design of a Low Noise PLL using Injection Locked Oscillator**
Han-Gon Ko and Deog-Kyoon Jeong
Department of Electrical and Computer Engineering, Seoul National University
- TP1-136 17:10-18:30 유무선 인터페이스를 위한 기준 클록을 사용하지 않는 클록 데이터 복원**
Hyunkyoo Choi, Kiwon Kwon, Jahoon Jin, and Jung-Hoon Chun
College of Information and Communication Engineering, Sungkyunkwan University
- TP1-137 17:10-18:30 The Design of 4-bit Flash ADC with Discrete Components**
Jonghyun Oh and Deog-Kyoon Jeong
Department of Electrical and Computer Engineering, Seoul National University
- TP1-138 17:10-18:30 온도 보상 특성을 가지는 전압 조절 발진기**
Xuefan Jin, Jung-Hoon Chun, and Kee-Won Kwon
College of Information and Communication Engineering, Sungkyunkwan University
- TP1-139 17:10-18:30 A Noninverting Two-Switch Buck-Boost DC-DC Converter for Portable Applications**
Yoonjae Kim, Jongseok Bae, Sooho Cho, Sungjae Oh, Hyunjun Kim, and Youngoo Yang
School of Electronic and Electrical Engineering, Sungkyunkwan University
- TP1-140 17:10-18:30 Dynamic Supply Switching Modulator for Power Amplifier Using Single Inductor Dual Output DC-DC Buck Converter**
Sungjae Oh, Jongseok Bae, Yoonjae Kim, Sooho Cho, and Youngoo Yang
School of Electronic and Electrical Engineering, Sungkyunkwan University

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- TP1-141 17:10-18:30 Design of Band Gap Reference for Minimization of The Temperature Coefficient**
Hyunjun Kim, Sooho Cho, Jongseok Bae, Yoonjae Kim, and Youngoo Yang
School of Electronic and Electrical Engineering, Sungkyunkwan University
- TP1-142 17:10-18:30 Design of AC Directed Driving IC with PFC Function**
Kilsoo Seo and Jonghyun Kim
Power Semiconductor Research Center, Korea Electrotechnology Research Institute
- TP1-143 17:10-18:30 Design of Delay Locked Loop with Duty Cycle Correction**
Chang Soo Yoon and Deog-Kyoon Jeong
Department of Electrical and Computer Engineering, Seoul National University
- TP1-144 17:10-18:30 A Design of Low-Noise Switched-Capacitor Amplifier with Dynamic Offset Cancellation**
Min Chan Kim, Sang-Yun Kim, and Kang-Yoon Lee
College of Information and Communication Engineering, Sungkyunkwan University
- TP1-145 17:10-18:30 Single-Inductor Multiple-Output (SIMO) Switching Converter with Constant Time Control using Hysteresis Comparators**
Jimin Oh, Jung-Hee Suk, Sangkyun Lee, and Yilsuk Yang
Information and Communications Core Technology Research Laboratory, Electronics and Telecommunications Research Institute
- TP1-146 17:10-18:30 Digital Eye Shaping for Reliability in a Blind Baud-rate ADC-Based Receiver**
Jong-Moon Choi, Ho-Joon Kim, and Kee-Won Kwon
College of Information and Communication Engineering, Sungkyunkwan University
- TP1-147 17:10-18:30 A Design of Automatic Current Limit Low Drop Out Regulator with Wide Input Range and Fast Settling Time for Wireless Power Transfer Application**
Jung-Yeon Kim, Young-Jun Park, and Kang-Yoon Lee
College of Information and Communication Engineering, Sungkyunkwan University
- TP1-148 17:10-18:30 A 2.6 GHz Fully Integrated GaN-HEMT Doherty Power Amplifier Based on Compact Load Network for Small-Cell Base Stations**
Hwiseob Lee, Wonseob Lim, and Youngoo Yang
School of Electronic and Electrical Engineering, Sungkyunkwan University
- TP1-149 17:10-18:30 2.4 GHz Fully Integrated CMOS Power Amplifier using a 0.18 μ m Process for WLAN Applications**
Wonseob Lim, Hwiseob Lee, Jongseok Bae, Sooho Cho, and Youngoo

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Yang
School of Electronic and Electrical Engineering, Sungkyunkwan University

- TP1-150 17:10-18:30 Pre-Matched Two-Stage Doherty Power Amplifier Using GaN-HEMT Device for X-Band Applications**
Wooseok Lee, Hwiseob Lee, Wonseob Lim, Hyunuk Kang, Seungkuk Park, and Youngoo Yang
School of Electronic and Electrical Engineering, Sungkyunkwan University
- TP1-151 17:10-18:30 Design of Two-Stage HBT Doherty Power Amplifier for Handset Applications**
Hyunuk Kang, Hwiseob Lee, Wooseok Lee, and Youngoo Yang
School of Electronic and Electrical Engineering, Sungkyunkwan University
- TP1-152 17:10-18:30 A Design of 1.2 mW High-Speed Programmable Frequency Divider for a 30 GHz Frequency Synthesizer**
Ho-Cheol Ryu, Dong-Soo Lee, Sung-Jin Kim, and Kang-Yoon Lee
College of information and Communication Engineering, Sungkyunkwan University
- TP1-153 17:10-18:30 A PFD and Charge Pump Switching Circuit to Low Reference Spur of the PLL in 0.18 μ m CMOS**
Sung Jin Kim, Hyeon-Uk Bhin, Dong-Soo Lee, and Kang-Yoon Lee
College of information and Communication Engineering, Sungkyunkwan University
- TP1-154 17:10-18:30 A 8 Bit, Temperature-Independent Current-Steering DAC with 10 V Output Swing**
Moon-Chul Choi, Hyun-Chang Kim, and Deog-Kyoon Jeong
Department of Electrical and Computer Engineering, Seoul National University
- TP1-155 17:10-18:30 Auto Dual-axis Adjustable Lights with a Single-chip Tracking Sensor**
Yong Hwan Park, Jeong Seok Kim, and Yong Sin Kim
Electrical Engineering, Korea University
- TP1-156 17:10-18:30 A Current Sensing Completion Detection Circuit Utilizing Body Effect**
Jiheon Park, Young-Ha Hwang, and Deog-kyoon Jeong
Department of Electrical and Computer Engineering, Seoul National University
- TP1-157 17:10-18:30 An 8-Bit 20 GHz DCO with Divided-by-5 Injection-Locked Frequency Divider**
Jung Min Yoon, Chang-Soo Yoon, and Deog-Kyoon Jeong
Department of Electrical and Computer Engineering, Seoul National University

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| TP1-158 | 17:10-18:30 | Throughput을 최대화하는 MAC 프로토콜을 위한 Fragmentation과 Aggregation 제안
구은비, 강병철, 정철호, 이혁연, 김재석
<i>연세대학교 전기전자공학과</i> |
| TP1-159 | 17:10-18:30 | 이중 채널 송신기가 포함된 CMOS 이미지 센서 시스템
김상훈, 엄부용, 김종률, 전정훈
<i>College of Information and Communication Engineering, Sungkyunkwan University</i> |
| TP1-160 | 17:10-18:30 | 비 접촉 측정/검사를 위한 영상 매칭 시스템
Yunseok Jang, Junwon Mun, Jaehyuk So, Baatarbek Ryskhan, and Jaeseok Kim
<i>Department of Electrical and Electronic Engineering, Yonsei University</i> |
| TP1-161 | 17:10-18:30 | Real-Time Hardware Implementation of Noise-Robust Auditory Evoked Potential Extraction Algorithm
Wooseok Byun and Ji-Hoon Kim
<i>Department of Electronics Engineering, Chungnam National University</i> |
| TP1-162 | 17:10-18:30 | Monte Carlo Simulation of Basic Models for Quantitative Analysis of Scanning Electron Microscope Images
Myeong Chun Song and Jin Seung Kim
<i>Department of Nano-Science and Technology, Chonbuk National University</i> |
| TP1-163 | 17:10-18:30 | e-Beam Simulation for Deep Trench Monitoring Solution Development
Changhwan Lee, Gwangmin Kwon, Youngsoon Yoo, Jongtae Kim, Yeojin Yoon, and Jinsan Yoo
<i>SK hynix Inc.</i> |
| TP1-164 | 17:10-18:30 | An Efficient Test Circuit for Defect Monitoring of Standard Logic Cells
오길근, 신연중, 호민혜, 김영현, 정다래, 김형태, 이윤우, 김요정
<i>Samsung Electronics Co., Ltd.</i> |
| TP1-165 | 17:10-18:30 | Mechanical Characterization of Silver Nanowire on Silicon Pillar by Using in-situ Pico Indentation
Jaehyun Kim ^{1,2} , Changhwan Lee ¹ , Hyungwon Yoo ¹ , Yeojin Yoon ¹ , Jinsan Yoo ¹ , Jooyoung Jung ² , Qauser Naddem ² , and Seungmin Han ²
<i>¹SK hynix Inc., ²KAIST</i> |
| TP1-166 | 17:10-18:30 | Damascene공정에서의 광학 검사 장비의 검출력 향상 방법 연구
권혁만, 문대영, 송인영, 오재형
<i>SK hynix Inc.</i> |
| TP1-167 | 17:10-18:30 | DRAM Storage Node Profile 개선을 위한 OCD 계측 기술 연구
허성준, 윤원식, 신현철, 박동성
<i>SK hynix Inc.</i> |

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|---------|-------------|---|
| TP1-168 | 17:10-18:30 | Dielectric Film Thickness Monitoring Technique in 3D Flash Memory Device
YongWoo Jung
<i>SK hynix Inc.</i> |
| TP1-169 | 17:10-18:30 | SEM Imaging of High Aspect Ratio Structure BottomThrough Effects of Landing Energy and Energy Filter
Gwangmin Kwon, Jaecheol Jo, Ohjang Kwon, Gwirang Kim, and Kyuchan Shim
<i>SK hynix Inc.</i> |
| TP1-170 | 17:10-18:30 | SEM 이미지 Hot Spot Monitoring을 위한 Pixel 기반 검사 방법
권오장, 권광민, 조재철, 김귀랑, 마성민, 심규찬
<i>SK hynix Inc.</i> |
| TP1-171 | 17:10-18:30 | Morphology and Structure Analysis of Graphene by Low Voltage TEM Technique
Youngji Cho ^{1,3} , Jun-Mo Yang ¹ , Do Van Lam ² , Seung-Mo Lee ² , Jae-Hyun Kim ² , and Jiho Chang ³
¹ <i>Department of Measurement and Analysis, National Nanofab Center,</i>
² <i>Nano-Mechanical Systems Research Division, Korea Institute of Machinery and Materials,</i> ³ <i>Department of Applied Science, Korea Maritime and Ocean University</i> |
| TP1-172 | 17:10-18:30 | Wafer Geometry 측정 기술을 이용한 Defocus 개선 연구
Sangmin Kim, Keunjae Jeong, and Kyuchan Shim
<i>SK hynix Inc.</i> |
| TP1-173 | 17:10-18:30 | A Study on Through-focus Scanning Optical Microscopy (TSOM) using Wavefornt Sensor
Dong Joo Park, Joon Hyeong Park, and Jun Ho Lee
<i>Department of Optical Engineering, Kongju National University</i> |
| TP1-174 | 17:10-18:30 | Strain Measurement in SiGe/Si Layer by Dark-field Electron Holography with Medium High-resolution Magnification
Van Vuong Hoang ^{1,3} , YoungJi Cho ¹ , Jung Ho Yoo ¹ , Yong Ho Choi ² , Soon-Ku Hong ³ , and Jun-Mo Yang ¹
¹ <i>Department of Measurement and Analysis, National Nanofab Center,</i>
² <i>Department of Aero-Materials Engineering, Jungwon University,</i>
³ <i>Department of Materials Science and Engineering, Chungnam National University</i> |
| TP1-175 | 17:10-18:30 | 2Xnm 급 반도체 웨이퍼 결함검출을 위한 Ultra Hi-NA 광학시스템 설계
Woojun Han ¹ , Eunkil Jo ¹ , Seonho Lee ¹ , Jiyoun Oh ¹ , Jinhwan Kim ¹ , Seungyoung Chu ² , and Jaisoon Kim ¹ ,
¹ <i>NEMO Laboratory Department of Physics, Myongji University,</i> ² <i>AUROS Technology</i> |
| TP1-176 | 17:10-18:30 | ESLI 시스템 검증을 위한 XXnm 검사용 UV 라인 스캐닝 시스템 개발 |

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Eunkil Jo¹, Seonho Lee¹, Oh-hyung Kwon¹, Sangchul Lee¹, Seongchul Oh², Seungyong Chu², and Jaisoon Kim¹

¹NEMO Laboratory, Department of physics, Myongji University ²AUROS Technology

- TP1-177 17:10-18:30 TSV Group Architecture for Repair 3D IC**
Ingeol Lee, Minho Cheong, Jaeseok Park, and Sungho Kang
Department of Electrical and Electronic, Yonsei University
- TP1-178 17:10-18:30 Cl-기를 포함한 SiNx 공정의 인시츄 클린 조건 최적화 및 잔류 불순물 제어**
KwangSeon Jin, ByungChul Cho, DongHo Ryu, and HyoungChan Ha
Research and Development team, WONIK IPS.Co., Ltd.
- TP1-179 17:10-18:30 EUV 마스크 검사용 Ptychography 알고리즘 개발**
우동곤¹, 이승민¹, 홍성철¹, 조훈², 김희율², 조한구³, 안진호¹
¹한양대학교 신소재공학과, ²한양대학교 전자컴퓨터통신 공학과, ³한양대학교 나노과학기술연구소
- TP1-180 17:10-18:30 미세정렬장치를 갖춘 초소형 전자컬럼**
Sungwoong Choi, Youngbok Lee, Dae-Wook Kim, Seungjoon Ahn, Tae-Sik Oh, and Ho Seob Kim
Department of Nanoscience, Sun Moon University
- TP1-181 17:10-18:30 Flexible PCB를 이용한 마이크로컬럼**
Youngbok Lee, Sungwoong Choi, Hyung Woo Kim, Dae-Wook Kim, Seungjoon Ahn, Tae-Sik Oh, and Ho Seob Kim
Department of Nanoscience, Sun Moon University
- TP1-182 17:10-18:30 4중극 디플렉터를 이용한 마이크로컬럼의 특성 연구**
Hyung Woo Kim, Youngbok Lee, Sungwoong Choi, Anjli Sharma, Tae-Sik Oh, Dae-Wook Kim, Seungjoon Ahn, and Ho Seob Kim
Department of Nanoscience, Sun Moon University
- TP1-183 17:10-18:30 Preliminary Test of Ultraminiaturized Microcolumn**
Anjli Sharma, Tae-Sik Oh, Dae-Wook Kim, and Ho-Seob Kim
Department of Physics and Nanoscience, Sun Moon University

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Chip Design Contest

Room L
로비 (5층)

2016년 2월 23일(화) 08:30-18:30

[CDC] Chip Design Contest

[Panel]

CDC_201501002

멤리스터-CMOS 기술을 이용한 로직 셀 설계

주저자: 조성완

지도교수: 조경록

충북대학교

[Panel]

CDC_201501003

The Dickson Charge Pump for Tx driver with Vth Effect Reduction Technique and Adaptive Gain Control

주저자: Se-un Shin

지도교수: 조규형

KAIST

[Panel]

CDC_201501004

Core-A와 open source IP 기반의 MCU 구현

주저자: 박영민

지도교수: 조경록

충북대학교

[Panel]

CDC_201501005

Magnetic Field Noise Effects on the Jitter of CDN in a Hierarchical System of Chip-PCB

주저자: 공선규

지도교수: 김정호

KAIST

[Panel]

CDC_201501006

Application Wireless Power Transfer Interconnection Scheme on 2.5-D / 3-D IC

주저자: 송진욱

지도교수: 김정호

KAIST

[Panel]

CDC_201501007

Design of Low power 700KS/s 12bit SAR ADC

주저자: 김우섭

지도교수: 이강윤

성균관대학교

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[Demo]

CDC_201501008

A prototype 88x64 array capacitive fingerprint sensor

주저자: 여협구
지도교수: 양지운
한신대학교

[Panel]

CDC_201501009

A Low-complexity and Real-time Processor for Joint Barrel Distortion Correction and Color Demosaicking

주저자: 정희성
지도교수: 김태환
한국항공대학교

[Panel]

CDC_201501011

Biosensor based on cascoded compatible lateral bipolar transistor (C-CLBT) for detection of C-reactive protein

주저자: 정현민
지도교수: 강신원
경북대학교

[Panel]

CDC_201501016

Dual mode boost converter for energy harvesting

주저자: 박형렬
지도교수: 노정진
한양대학교

[Panel]

CDC_201501018

가변형 레지스터 클럭게이팅을 이용한 저전력 마이크로프로세서

주저자: 신제훈
지도교수: 이종열
전북대학교

[Panel]

CDC_201501019

Design of 28 GHz up-conversion mixer

주저자: 이효성
지도교수: 민병욱
연세대학교

[Panel]

CDC_201501020

A Fully-Integrated K-band Radar Transceiver in 110nm CMOS Technology

주저자: Chenglin Cui
지도교수: 김병성
성균관대학교

[Panel]

CDC_201501021

A 240/120 GHz dual-mode voltage controlled oscillator in 65 nm CMOS Technology

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주저자: 유정환
지도교수: 이재성
고려대학교

[Panel]
CDC_201501022 **900MHz 대역 수동 RFID 송수신 태그**
주저자: 서명교
지도교수: 이재성
고려대학교

[Panel]
CDC_201501023 **CMOS 기반 100 GHz 대역 전압조정발전기**
주저자: 손희강
지도교수: 이재성
고려대학교

[Panel]
CDC_201501024 **A Low-Power CMOS Neural Amplifier IC for Implantable Medical Devices**
주저자: Alfian Abdi
지도교수: 차혁규
서울과학기술대학교

[Panel]
CDC_201501025 **0.18um CMOS의 총이온화방사선 효과 영향분석**
주저자: 이민웅
지도교수: 조성익
전북대학교

[Panel]
CDC_201501027 **A High Efficiency DC-DC Converter for Low Voltage Output**
주저자: 신희암
지도교수: 김수원
고려대학교

[Panel]
CDC_201501028 **Fabrication and characteristics of low-power device inverters**
주저자: 김승규
지도교수: 최우영
서강대학교

[Panel]
CDC_201501029 **Fabrication and characteristics of low-power logic switches**
주저자: 김승규
지도교수: 최우영
서강대학교

[Panel]
CDC_201501030 **A Constant Frequency Clock Oscillator Using Bandgap Reference with PVT compensation**

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주저자: 안진홍
지도교수: 박영준
서울대학교

[Panel]

CDC_201501031 **D-band 대역 4.25-Gbps Loopback Transceiver**
주저자: 김병준
지도교수: 이재성
고려대학교

[Panel]

CDC_201501032 **SEU Cross Section Modeling of 0.35 um Shift Register**
주저자: 노영탁
지도교수: 이희철
KAIST

[Panel]

CDC_201501033 **12-bit 40kSPS SAR ADC with Unary DAC control**
주저자: 김태효
지도교수: 이희철
KAIST

[Panel]

CDC_201501034 **Less sensitive ring oscillator about VDD variation**
주저자: 최형진
지도교수: 김수원
고려대학교

[Panel]

CDC_201501035 **광센서를 위한 고감도 신호잠금증폭기 설계**
주저자: 박창인
지도교수: 최영완
중앙대학교

[Panel]

CDC_201501036 **A low-power all-digital duty-cycle and phase correction circuit for QDR I/O interface DRAM applications**
주저자: 조정
지도교수: 김수원
고려대학교

[Panel]

CDC_201501037 **다채널 광전자증배관의 채널수를 줄이기 위한 resistive network와 전하증폭기**
주저자: 전수진
지도교수: 최영완
중앙대학교

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[Panel]

CDC_201501038

Design of a Wide Range Charge Pump in a PLL for a CMOS Image Sensor

주저자: 배기경
지도교수: 천지민
금오공과대학교

[Panel]

CDC_201501039

Design of a Wide Range High Precision Charge Pump in a PLL for a CMOS Image Sensor

주저자: 권민우
지도교수: 천지민
금오공과대학교

[Panel]

CDC_201501040

POF를 위한 1-Gb/s CMOS 광수신기 설계

주저자: 윤은정
지도교수: 유종근
인천대학교

[Demo]

CDC_201501041

Power Management Unit Design for Storage-Less and Converter-Less Energy Harvesting Applications

주저자: 백돈규
지도교수: 장래혁
KAIST

[Panel]

CDC_201501042

A 60 GHz CMOS Low Noise Amplifier with Cascode stage for WPAN Applications

주저자: Kwangseok Choi
지도교수: 권영우
서울대학교

[Panel]

CDC_201501043

새로운 MPPT 제어 기능을 갖는 빛 에너지 하베스팅 시스템

주저자: 윤은정
지도교수: 유종근
인천대학교

[Panel]

CDC_201501044

빛에너지 하베스팅을 이용한 온도센서 회로

주저자: 윤은정
지도교수: 유종근
인천대학교

[Panel]

CDC_201501045

Low power GD-Colpitts VCO

주저자: 임창우

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지도교수: 윤태열
한양대학교

[Panel]

CDC_201501046

진동에너지 하베스팅을 위한 CMOS 인터페이스 회로

주저자: 윤은정
지도교수: 유종근
인천대학교

[Panel]

CDC_201501047

자기결합을 이용한 3-D 무선 전력 전송기술

주저자: 문동우
지도교수: 박창근
숭실대학교

[Panel]

CDC_201501048

A 900-MHz linear mode CMOS Power Amplifier Using a Symmetrical Layout of Inter-stage Inductor

주저자: 손민오
지도교수: 박창근
숭실대학교

[Panel]

CDC_201501050

65-nm CMOS 300 GHz 영상 검출기

주저자: 송기룡
지도교수: 이재성
고려대학교

[Panel]

CDC_201501051

A Low Power 10-bit Monotonic Switching SAR ADC with Comparator Offset Calibration

주저자: 박다솜
지도교수: 이종욱
경희대학교

[Panel]

CDC_201501052

Low Power Memory Design For Memory-based FFT With Optimized Addressing Scheme

주저자: 강규성
지도교수: 박종선
고려대학교

[Demo]

CDC_201501053

24GHz와 77GHz 차량용 레이더 주파수 합성기와 광대역 믹서의 연구

주저자: 이종석
지도교수: 문용
숭실대학교

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[Panel]

CDC_201501054

주파수 체배기가 집적된 CMOS 기반 G-band 신호원

주저자: 김정수

지도교수: 이재성

고려대학교

[Panel]

CDC_201501055

5-GHz Phase-Locked Loop Using Pseudo-Differential Delay Cell With Linear VCO Gain

주저자: 김민규

지도교수: 최우영

연세대학교

[Panel]

CDC_201501056

Multi-channel neural recording system

주저자: 장정우

지도교수: 송윤규

서울대학교

[Panel]

CDC_201501057

Application of the Common-Centroid Layout Method for High Randomness of PUF

주저자: 최강운

지도교수: 홍종필

충북대학교

[Panel]

CDC_201501058

High gain and low noise switched capacitor TIA for sensor readout circuits

주저자: 정훈주

지도교수: 정훈주

금오공과대학교

[Panel]

CDC_201501059

Cross Coupled VCO의 구조에 따른 FoM 분석

주저자: 고가연

지도교수: 박창근

숭실대학교

[Panel]

CDC_201501060

0.3-V Supply Charge pump circuit for 65 nm CMOS

주저자: Heesauk Jhon

지도교수: 최우영

서강대학교

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[기타 참여팀]

[Panel]

CDC_201501012 **A 77-GHz FMCW Radar System Using On-Chip Waveguide Feeders in 65-nm CMOS**

주저자: Chenglin Cui

지도교수: 김병성

성균관대학교

[Panel]

CDC_201501013 **Clock-Less 8-bit Pipeline-Like Novel A/D Converter**

주저자: 이상훈

지도교수: 최평

경북대학교

[Panel]

CDC_201501014 **Modified Single-slope A/D Converter with Improving Conversion Time for CIS System**

주저자: 이상훈

지도교수: 최평

경북대학교

[Panel]

CDC_201501017 **Delta Readout Scheme for Image-Dependent Power Savings in a CMOS Image Sensor with Multi-Column-Parallel SAR ADCs**

주저자: 김현준

지도교수: 류승탁

KAIST

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A. Interconnect & Package 분과

Room A
태백 I (5층)

2016년 2월 24일(수) 08:30-10:00

[WA1-A] A1: Contact and Thin Film Technologies for High Performance Interconnect

좌장 : 이원준(세종대학교)

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- | | | |
|---------|-------------|--|
| WA1-A-1 | 08:30-08:45 | Self-limiting Growth with High Throughput of Thin Film Deposition by Pulsed PE-CVD
Hanearl Jung and Hyungjun Kim
<i>School of Electrical and Electronic Engineering, Yonsei University</i> |
| WA1-A-2 | 08:45-09:00 | The Effects on The Microstructure Evolution and Electrical Properties of Yb Alloyed with Mo for Silcication
Sekwon Na ¹ , Seok-Hee Lee ² , Hoo-Jeong Lee ³ , and Young-Chang Joo ^{1,4}
<i>¹Research Institute of Advanced Materials, Seoul National University, ²Department of Electrical Engineering, KAIST, ³School of Advanced Materials Science and Engineering, Sungkyunkwan University, ⁴Department of Materials Science and Engineering, Seoul National University</i> |
| WA1-A-3 | 09:00-09:15 | WC_x Thin Films Prepared by Atomic Layer Deposition as A Metal Gate and Diffusion Barrier for Cu Metallization
Jun Beom Kim ¹ , Won Seok Han ² , Tae Eun Hong ³ , and Soo-Hyun Kim ¹
<i>¹School of Materials Science and Engineering, Yeungnam University, ²UP Chemical, ³Busan Center, Korea Basic Science Institute</i> |
| WA1-A-4 | 09:15-09:30 | Consideration for Effective NMOS Contact Resistivity Reduction Via INDA(Interface N-type Dopant Accumulation) Using TiSi₂ with Titanium/Selenium Double Layer on in-Situ Doped Si:P Film.
Jeongmin Choi, Enjung Ko, Mijin Jung, Seran Park, Hyunsu Shin, and Dae-Hong Ko
<i>Department of Materials Science and Engineering, Yonsei University</i> |
| WA1-A-5 | 09:30-09:45 | Atomic Layer Deposition of Ru Thin Films using A New Ru Precursor and Various Reactants for A Cu Seed Layer Application
Hyun-Jung Lee ¹ , Min-Young Lee, Soon-Young Jung, Tae Eun Hong ² , Ryosuke Harada ³ , Shunichi Nabeya ⁴ , and Soo-Hyun Kim ¹
<i>¹School of Materials Science and Engineering, Yeungnam University, ²Busan Center, Korea Basic Science Institute, ⁴Tanaka Precious Metals, Japan</i> |

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D. Thin Film Process Technology 분과

Room B

태백II+III(5층)

2016년 2월 24일(수) 08:30-10:00

[WB1-D] Thin Films for Emerging Devices I

좌장 : 박태주(한양대학교), 윤성민(경희대학교)

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- | | | |
|---------|-------------|--|
| WB1-D-1 | 08:30-08:45 | Comparison of Switching Characteristics of ALD Al₂O₃, HfO₂, HfAlO_x-based ReRAM Devices Under DC Voltage Sweep
Andrey Sokolov, Seokki Son, and Changhwan Choi
<i>Division of Materials Science and Engineering, Hanyang University</i> |
| WB1-D-2 | 08:45-09:00 | Hybrid Complementary Inverter for Solution-Processed Single-walled Carbon Nanotube and A-IGZO Thin-Film Transistors
Yongwoo Lee, Jinsu Yoon, Bongsik Choi, Juhee Lee, Minsu Jeon, Jungmin Han, Jieun Lee, Dong Myong Kim, Dae Hwan Kim, and Sung-Jin Choi
<i>School of Electrical Engineering, Kookmin University</i> |
| WB1-D-3 | 09:00-09:15 | Transparent Synapse Thin-Film Transistors Using IGZO Active Channel and PVP-SBA Electrolytic Gate Insulator
Yeo-Myeong Kim, Eom-Ji Kim, Won-Ho Lee, and Sung-Min Yoon
<i>Kyung Hee University</i> |
| WB1-D-4 | 09:15-09:30 | Nano-Scale Cross Array Neuromorphic Devices with Al-Doped HfAlO_x Laminated Oxide Switching Layer and Its Synaptic Characterization
Seokki Son, Andrey Sokolov, and Changhwan Choi
<i>Division of Material Science and Engineering, Hanyang University</i> |
| WB1-D-5 | 09:30-09:45 | Filament-Shape Dependent Reset Behavior in Cu/TiO₂/Pt Resistance Switching Device
Hae Jin Kim, Kyung Jean Yoon, Young Jae Kwon, Han Joon Kim, Xing Long Shao, and Cheol Seong Hwang
<i>Department of Materials Science and Engineering and Inter-University Semiconductor Research Center, Seoul National University</i> |
| WB1-D-6 | 09:45-10:00 | Trilayer Tunnel Selector for Memristor Memory Cell
Sung Yeon Ryu, Do Yeon Lee, You Rim Kwon, Vladimir Kornijcuk, and Byung Joon Choi
<i>Department of Materials Science and Engineering, Seoul National University of Science and Technology</i> |

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C. Material Growth & Characterization 분과

Room C

함백 I (5층)

2016년 2월 24일(수) 08:30-10:00

[WC1-C] Materials Growth & Characterization : Emerging New Electrical Materials

좌장 : 박일규(서울과학기술대학교), 박진섭(한양대학교)

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- | | | |
|---------|-------------|---|
| WC1-C-1 | 08:30-09:00 | [초청] Merging-angle Dependent Boundary Transport and Type Control Via Thickness and Contact-metal Engineering in 2D Van Der Waals Materials
David J Perello, Seunghyun Song, Sang Hoon Chae, and Young Hee Lee
<i>IBS Center for Integrated Nanostructure Physics, Sungkyunkwan University</i> |
| WC1-C-2 | 09:00-09:15 | Synthesis and Characterization of Novel CuO/CeO₂ Nanocomposites by Facile Wet Impregnation Method
K. Mageshwari and Jinsub Park
<i>Department of Electronics and Computer Engineering, Hanyang University</i> |
| WC1-C-3 | 09:15-09:30 | Highly Bending Durable All-Carbon Composite Electrodes Containing Uniform Carbon Nanotube Networks
Hyung Duk Yun ¹ , Jinsung Kwak ¹ , Se-Yang Kim ¹ , Han Seo ² , In Cheol Bang ² , Sung Youb Kim ² , Seoktae Kang ³ , and Soon-Yong Kwon ^{1,2}
<i>¹School of Materials Science and Engineering, Ulsan National Institute of Science and Technology, ²School of Mechanical and Nuclear Engineering, Ulsan National Institute of Science and Technology, ³Department of Civil and Environmental Engineering, KAIST</i> |
| WC1-C-4 | 09:30-09:45 | Crystallographic Control of Piezoelectric Thin Films and Its First Principle Calculation Approach for Flexible Energy Harvesters
Chang Kyu Jeong ¹ , Jae Hyun Han ¹ , Sung Beom Cho ² , and Keon Jae Lee ¹
<i>¹Department of Materials Science and Engineering, KAIST, ²Division of Materials Science and Engineering, Hanyang University</i> |
| WC1-C-5 | 09:45:10:00 | Atomic Layer Deposited High-K Tetragonal ZrO₂ Doped with Ge Using A Azeotropic Mixture of Zr and Ge-precursor
Jong-Ki An ^{1,2} , Seob Shim ^{1,3} , Go-Ru Kang ¹ , Nam-Khen Oh ¹ , Minwoo Nam ¹ , Bogeum Lee ¹ , Jin-Tae Kim ^{1,3} , Nak-Kwan Chung ¹ , Sung-Ho Hahm ² , and Ju-Young Yun ^{1,3}
<i>¹Center for Vacuum Center, Korea Research Institute of Standards and Science, ²School of Electronics Engineering, College of IT Engineering, Kyungpook National University, ³Department of Nanomaterials Science and Engineering, University of Science and Technology</i> |

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G. Device & Process Modeling, Simulation and Reliability 분과

Room D

함백II+III(5층)

2016년 2월 24일(수) 08:30-10:00

[WD1-G] Device Physics and Characterization 2 : Memory Devices

좌장 : 이석규(SK 하이닉스), 이재규(삼성전자)

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|---------|-------------|--|
| WD1-G-1 | 08:30-08:45 | Data Retention of Select Gate Lateral Coupling eNVM Array
Yong-Seop Lee, Kwang-Il Choi, Do-Hee Kim, Nam-Yoon Kim, and Sung-Kun Park
<i>System IC Platform Technology Development Team, SK hynix Inc.</i> |
| WD1-G-2 | 08:45-09:00 | Charge Trapping Characteristics of FG NAND Flash Tunneling Oxide under Program and Erase Operation
Sangu Park ^{1,2} , Myung-Hyun Baek ¹ , and Byung-Gook Park ¹
¹ <i>Inter-university Semiconductor Research Center and Department of Electrical and Computer Engineering, Seoul National University,</i>
² <i>Samsung Electronics Co., Ltd.</i> |
| WD1-G-3 | 09:00-09:15 | Effect of Trap in Hysteresis Phenomenon of Floating-Gate NAND Flash Memory Cells
Nagyong Choi ¹ , Ho-Jung Kang ¹ , Sung-Min Joe ² , Byung-Gook Park ¹ , and Jong-Ho Lee ¹
¹ <i>Department of Electrical Engineering and Computer Science and Inter-University Semiconductor Research Center, Seoul National University,</i> ² <i>Flash Design Team, Memory Division, Samsung Electronics Co., Ltd.</i> |
| WD1-G-4 | 09:15-09:30 | An Analysis of AC-gm Dispersions due to Traps in Nitride Storage Layer in 3-D NAND Flash Memory
Ho-Jung Kang, Nagyong Choi, Byung-Gook Park, and Jong-Ho Lee
<i>Department of Electrical Engineering and Computer Science and Inter-University Semiconductor Research Center, Seoul National University</i> |
| WD1-G-5 | 09:30-09:45 | Nanowire Width-Dependent Low-Frequency Noise Characteristics in SiNW-Based GAA JL Flash Memory with Extremely Small Dimension
Tewook Bang ¹ , Ui-Sik Jeong ² , Choong-Ki Kim ¹ , Hagyoul Bae ¹ , Gun-Hee Kim ¹ , Da-Jin Kim ¹ , and Yang-Kyu Choi ¹
¹ <i>School of Electrical Engineering, KAIST,</i> ² <i>Samsung Electronics Co., Ltd.</i> |
| WD1-G-6 | 09:45-10:00 | Verilog-A Model of Phase Change Memory for Cell Distribution
Sung-Su Kim, Hye-Jung Choi, Dong-Jae Lee, and Seok-Kiu Lee
<i>DMR. Research and Development Division, SK hynix Inc.</i> |

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

Room F
봉래 I (6층)

2016년 2월 24일(수) 08:30-10:00

[WF1-Q] Metrology and Inspection II

좌장 : 김재현(SK 하이닉스), 김진승(전북대학교)

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- | | | |
|---------|-------------|---|
| WF1-Q-1 | 08:30-08:45 | Guide Line of Optimizing Wafer Position Map of High Order Overlay Models
Seung Hyun Jeong
<i>Department of NM Process Photo Team Research and Development Division, SK hynix Inc.</i> |
| WF1-Q-2 | 08:45-09:00 | Development of A Field Emission Nano-Focus X-ray Source with Electrostatic and Magnetic Lenses for Semiconductor Inspections
Yoon-Ho Song ^{1,2} , Sora Park ¹ , Jae-Woo Kim ¹ , Jun-Tae Kang ¹ , Jin-Woo Jeong ¹ , Ji-Hwan Yeon ¹ , Min-Sik Shin ^{1,2} , Sunghee Kim ¹ , Eunsol Go ^{1,2} , Hyojin Jeon ^{1,2} , and Young Chul Choi ¹
<i>¹Nano Electron-Source Creative Research Center, Electronics and Telecommunications Research Institute, ²School of Advanced Device Engineering, University of Science and Technology</i> |
| WF1-Q-3 | 09:00-09:15 | Deep Learning을 이용한 TSOM 이미지 계측
Heechul Choi, Hyeongbok Kim, and Joonghwee Cho
<i>Department of Embedded Systems Engineering, Incheon National University</i> |
| WF1-Q-4 | 09:15-09:30 | Individual Multiwall Carbon Nanotube Field Emitter As Electron Source for Scanning Electron Microscope
Sanjeev Kumar Kanth ^{1,2} , Anjali Sharma ² , Byong Chon Park ¹ , and Ho Seob Kim ²
<i>¹Center for Nanometrology, Korea Research Institute of Standards and Science, ²Department of Nanoscience, Sun Moon University</i> |
| WF1-Q-5 | 09:30-09:45 | A Methodology for Test Macro Generation based on Classification of Unique Patterns
¹ MinSoo Kang, ¹ Jong-hyun Lee, ¹ Chin Kim, ² Mohammed Harb, and ¹ Sun-Hom Steve Paak
<i>¹Samsung Electronics Co., Ltd., ²Mentor Graphics Corporation, Egypt</i> |
| WF1-Q-6 | 09:45-10:00 | Image Processing 기술을 활용한 불량 검출력 향상 연구
Kyu-Young Kim, Sungjin Kwon, Seong-Min Ma, Deok-In Kim, and Kyu-Chan Shim
<i>SK hynix Inc.</i> |

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

Room G

봉래Ⅱ+Ⅲ(6층)

2016년 2월 24일(수) 08:30-10:00

[WG1-F] Materials and Processing Technologies

좌장

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- | | | |
|---------|-------------|---|
| WG1-F-1 | 08:30-08:45 | High Density and Low Stress Titanium Nitride Metal Hard Mask (TiN MHM) by Physical Vapor Deposition (PVD) for 10nm Node and Beyond
Chang-Min Jeong, Eun-Kyoung Ma, Jouji Hiroishi, Shin Kim, Hyun-Ji Cho, Min-Soo Kim, Yong-Seok Jang, Byeong-Hwa Jeong, Ki-Young Yun, Seung-Su Choi, and In Sang Jeon
<i>Korea Institute for Super Materials, ULVAC Korea, Ltd.</i> |
| WG1-F-2 | 08:45-09:00 | Reverse Current Improvement of Metal/n-Ge Contact with TiO₂ Interlayer and Plasma Pre-Oxidation
Gwang-Sik Kim and Hyun-Yong Yu
<i>School of Electrical Engineering, Korea University</i> |
| WG1-F-3 | 09:00-09:15 | First-principle Study of GeSn Alloys for Electrical and Optical Characterizations
Yongbeom Cho ¹ , Oleg Rubel ² , and Seongjae Cho ^{1,3}
¹ Department of Electronic Engineering, Gachon University,
² Department of Materials Science and Engineering, McMaster University, ³ Graduate School of IT Convergence Engineering, Gachon University |
| WG1-F-4 | 09:15-09:30 | Improved Electrical Characteristics of FD-SOI Tunneling FET (TFET) Processed with Direct and Remote Interfacial Layer Scavenging Approaches
Donghwan Lim, Hoon Hee Han, Young Jin Kim, and Changhwan Choi
<i>Division of Materials Science and Engineering, Hanyang University</i> |
| WG1-F-5 | 09:30-09:45 | 고성능 트랜지스터를 위한 실리콘 나노멤브레인의 밸리 엔지니어링
김승윤 ¹ , 최성윤 ¹ , 황완식 ² , 조병진 ¹
¹ 한국과학기술원 전기및전자공학과, ² 한국 항공대학교 항공재료공학과 |
| WG1-F-6 | 09:45:10:00 | Growth of Polycrystalline Ge on Si by using Low-temperature Processes
Jeongmin Lee ¹ , Jungmin Lee ² , Mina Yun ³ , Yong-Hee Lee ² , and Seongjae Cho ^{1,3}
¹ Graduate School of IT Convergence Engineering, Gachon University,
² Department of Physics, KAIST, ³ Department of Electronic Engineering, Gachon University |

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2016년 2월 22일(월)-24일(수), 강원도 하이원리조트

J. Nano-Science & Technology 분과

Room H
육백 I (6층)

2016년 2월 24일(수) 08:30-10:00

[WH1-J] Two-Dimensional Materials beyond Graphene

좌장 : 조상현(SAIT)

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|---------|-------------|---|
| WH1-J-1 | 08:30-09:00 | [초청] Observation of A Widely Tunable Band Gap in Black Phosphorus
Keun Su Kim
<i>Department of Physics, Pohang University of Science and Technology</i> |
| WH1-J-2 | 09:00-09:15 | Electrical and Optical Properties of MoS₂ with Sulfur Vacancy Control by Alkanethiol Molecules Treatment
Kyungjune Cho, Tae-Young Kim, Jinsu Pak, Jae-Keun Kim, Barbara Yuri Choi, and Takhee Lee
<i>Department of Physics and Astronomy, Seoul National University</i> |
| WH1-J-3 | 09:15-09:30 | Plasma Doping Strategy for Few-layer Transition Metal Dichalcogenides by Self-assembled Protective Nanostructures
Soonmin Yim, Dong Min Sim, and Yeon Sik Jung
<i>Department of Materials Science and Engineering, KAIST</i> |
| WH1-J-4 | 09:30-09:45 | Size Tunable Growth of Monolayer MoS₂ Nano-Particles and Its Potential Application for Charge Trapping Layer of Memory Device
Jaeho Jeon ¹ , Seung Hyuk Choi ¹ , Gwangwe Yoo ² , Sung Kyu Jang ¹ , Jin-Hong Park ² , and Sungjoo Lee ^{1,2,3}
<i>¹SKKU Advanced Institute of Nanotechnology, Sungkyunkwan University, ²School of Electronics and Electrical Engineering, Sungkyunkwan University, ³Center for Human Interface Nanotechnology, Sungkyunkwan University</i> |
| WH1-J-5 | 09:45:10:00 | Angle-resolved Photoemission Spectroscopy on in-situ Surface-doped Black Phosphorus
Jimin Kim, Sae Hee Ryu, Yeongsup Sohn, and Keun Su Kim
<i>Department of Physics, Pohang University of Science and Technology</i> |

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N. VLSI CAD 분과

Room I
육백II(6층)

2016년 2월 24일(수) 08:30-10:00

[WI1-N] Architecture-Level Design Techniques

좌장 : 이종은(UNIST), 정재용(인천대학교)

WI1-N-1	08:30-08:45	Power-Optimized Design of N:1 Serializer in 65-nm CMOS Tongsung Kim and Woo-Young Choi <i>Department of Electrical and Electronic Engineering, Yonsei University</i>
WI1-N-2	08:45-09:00	CAM Structure of Built-in Redundancy Analysis Hardware Jooyoung Kim, Keewon Cho, Woosung Lee, Soyeon Kang, and Sungho Kang <i>Department of Electrical and Electronic Engineering, Yonsei University</i>
WI1-N-3	09:00-09:15	Cascaded Propagation Technique for Fault Binary Decision Diagram in Single-Event Transient Analysis Jong Kang Park, Myoungha Kim, and Jong Tae Kim <i>School of Electronic and Electrical Engineering, Sungkyunkwan University</i>
WI1-N-4	09:15-09:30	The Techniques for Exploiting The Plane-level Parallelism in NAND Flash Based Storage Device Wontaek Jung ^{1,2} and Eui-Young Chung ¹ ¹ <i>School of Electrical and Electronic Engineering, Yonsei University,</i> ² <i>Samsung Electronics Co., Ltd.</i>
WI1-N-5	09:30-09:45	Exploring Synchronous/Asynchronous Communication and Computation for Mapping Streaming Applications onto CGRA-based System Hongsik Lee, Sangyun Oh, and Jongeun Lee <i>Department of Computer Science Ulsan National Institute of Science and Technology</i>
WI1-N-6	09:45-10:00	Toward Neuromorphic Execution of Deep Learning Models Taehwan Shin, Yongshin Kang, Seungho Yang, Seban Kim, and Jaeyong Chung <i>Department of Electronic Engineering, Incheon National University</i>

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K. Memory (Design & Process Technology) 분과

Room J

청옥 I (6층)

2016년 2월 24일(수) 08:30-10:00

[WJ1-K] Unconventional Approaches in Memory Research

좌장 : 권용우(홍익대학교), 백인규(삼성전자)

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| WJ1-K-1 | 08:30-08:45 | Investigation of A-IGZO TFT Based 1T-1R Resistive Switching Memory for System on Panel Application
Il-Jin Baek and Won-Ju Cho
<i>Department of Electronic Materials Engineering, Kwangwoon University</i> |
| WJ1-K-2 | 08:45-09:00 | Hybrid Resistive Switching Memory Based on Solution-Processed Organic-Inorganic Blended Thin Film
Jae-Won Lee and Won-Ju Cho
<i>Department of Electronic Materials Engineering, Kwangwoon University</i> |
| WJ1-K-3 | 09:00-09:15 | Resistive Switching Property of TiN/SiN_x/Pt Device
Dae Eun Kwon, Jung Ho Yoon, Seul Ji Song, Jun Yeong Seok, Kyung Jean Yoon, Tae Hyung Park, Hae Jin Kim, Xinglong Shao, Yoo Min Kim, Young Jae Kwon, and Cheol Seong Hwang
<i>Department of Materials Science and Engineering and Inter-university Semiconductor Research Center, Seoul National University</i> |
| WJ1-K-4 | 09:15-09:30 | Effects of Ambient and Photo-illumination on Electrical Characteristics in The γ-Fe₂O₃ Nanoparticle Assembly-Based Memristors
Daehyun Ko ¹ , Jun Tae Jang ¹ , Yoon-Jae Baek ² , Sung-Jin Choi ¹ , Dong Myong Kim ¹ , Chi Jung Kang ³ , Tae-Sik Yoon ² , Hyun-Sun Mo ¹ , and Dae Hwan Kim ¹
<i>¹School of Electrical Engineering, Kookmin University, ²Department of Materials Science and Engineering, Myongji University, ³Department of Physics, Myongji University</i> |
| WJ1-K-5 | 09:30-09:45 | A Capacitorless 1T-DRAM Cell on Independent Double-gate FinFET
Jungmin Han, Bongsik Choi, Jinsu Yoon, Juhee Lee, Minsu Jeon, Yongwoo Lee, Jieun Lee, Dong Myong Kim, Dae Hwan Kim, and Sung-Jin Choi
<i>Electrical Engineering, Kookmin University</i> |
| WJ1-K-6 | 09:45-10:00 | The NiO Based Flexible Nanoscale ReRAM by The Direct Nanoimprint
Soo-Jung Kim ¹ , Sung-Hoon Hong ² , and Heon Lee ¹
<i>¹Department of Materials Science and Engineering, Korea University,</i> |

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*²Energy Harvesting Devices Research Section, Electronics and
Telecommunications Research Institute*

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E. Compound Semiconductors 분과

Room K

청옥Ⅱ+Ⅲ(6층)

2016년 2월 24일(수) 08:30-10:00

[WK1-E] GaN Power Device

좌장 : 문재경(한국전자통신연구원), 장태훈(전북대학교)

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| WK1-E-2 | 08:45-09:00 | Improvement of Off-state Performance of AlGaIn/GaN HFET with TMAH Surface Treatment
Won-Sang Park, Do-Kywn Kim, Dong-Hyeok Son, Ryun-Hwi Kim, Jun-Hyeok Lee, Quan Dai, Dae-Hyun Kim, In Man Kang, and Jung-Hee Lee
<i>School of Electrical Engineering, Kyungpook National University</i> |
| WK1-E-3 | 09:00-09:15 | Study on Temperature Dependent Dynamic On-resistance and Switching Loss of Clamped AlGaIn/GaN MOS-HFETs
Sang-Woo Han, Sung-Hoon Park, Hyun-Seop Kim, and Ho-Young Cha
<i>School of Electronic and Electrical Engineering, Hongik University</i> |
| WK1-E-4 | 09:15-09:30 | Improvement of Output Power Performance in AlGaIn/GaN HFETs with Multi-level Metallization
SeungKyu Oh ¹ , Taehoon Jang ² , In Yeol Hong ¹ , Gil Jun Lee ¹ , and Joon Seop Kwak ¹
¹ <i>Department of Printed Electronics Engineering, Sunchon National University,</i> ² <i>Semiconductor Physics Research Center, Department of Semiconductor Science and Technology, Chonbuk National University</i> |
| WK1-E-5 | 09:30-09:45 | Suppressed Charge Trapping Behaviors of ALD HfAlO_x GaN MOS Device with Sulfur Passivation
Hoonhee Han, Donghwan Lim, Youngjin Kim, and Changhwan Choi
<i>Division of Materials Science and Engineering, Hanyang University</i> |
| WK1-E-6 | 09:45:10:00 | AlGaIn/GaN-on-Si Device with Monolithic Gate Driver
Sung-Hoon Park, Sang-Woo Han, Hyun-Seop Kim, and Ho-Young Cha
<i>School of Electrical and Electronic Engineering, Hongik University</i> |

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A. Interconnect & Package 분과

Room A
태백 I (5층)

2016년 2월 24일(수) 10:00-11:40

[WA2-A] A3: Novel Interconnect and Packaging Technologies for Emerging Electronics

좌장 : 권오중(인천대학교), 조태제(삼성전자)

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| WA2-A-1 | 10:10-10:25 | Enhancing Fatigue Resistance of Screen-Printed Silver Nanocomposite Circuits for Stretchable Electronics
Kwang-Seok Kim ¹ , Dae Up Kim ¹ , and Seung-Boo Jung ²
<i>¹Convergence Components and Agricultural Machinery Application Group, Korea Institute of Industrial Technology, ²School of Advanced Materials Science and Engineering, Sungkyunkwan University</i> |
| WA2-A-2 | 10:25-10:40 | Stretchable Electronic Conductors of PEDOT:PSS Organogel for Stretchable Electronics
Yoo-Yong Lee, Ho-Young Kang, Seok Hyeon Gwon, Gwang Mook Choi, Seung-Min Lim, Jeong-Yun Sun, and Young-Chang Joo
<i>Department of Materials Science and Engineering, Seoul National University</i> |
| WA2-A-3 | 10:40-10:55 | Performance Enhancement for Ag Nanowire-Based Transparent Conductor Using TiO₂:Cs Sol-gel
Sunho Kim ¹ , Jun-gu Kang ¹ , Tae-yil Eom ² , and Hoo-Jeong Lee ^{1,2}
<i>¹School of Advanced Materials Science and Engineering, SungkyunKwan University, ²Sungkyunkwan Advanced Institute of Nano Technology, Sungkyunkwan University</i> |
| WA2-A-4 | 10:55-11:10 | Scaling Issues in Fatigue Behavior of Cu Interconnects on Flexible Substrate
Young-Joo Lee, Hae-A-Seul Shin, Han-Wool Yeon, Dae-Hyun Nam, Jung-Kwon Yang, and Young-Chang Joo
<i>Department of Materials Science and Engineering, Seoul National University</i> |
| WA2-A-5 | 11:10-11:25 | Fully-Packaged Ultrathin Si-based Flexible NAND Flash Memory
Do Hyun Kim, Hyeon Gyun Yoo, and Keon Jae Lee
<i>Department of Materials Science and Engineering, KAIST</i> |
| WA2-A-6 | 11:25-11:40 | Photoluminescence Characteristics After Phosphorous Implantation into Tensile Strained Ge-on-Si for CMOS-compatible Optical Lasers
Jiwoong Baek ^{1,2} , Bugeun Ki ^{1,2} , Chulwon Lee ³ , Yong-Hoon Cho ³ , Donguk Nam ⁴ , and Jungwoo Oh ^{1,2}
<i>¹School of Integrated Technology, Yonsei University, ²Yonsei Institute of Convergence Technology, ³Department of Physics, KI for the NanoCentury, KAIST, ⁴Silicon Photonics Research Laboratory, Inha</i> |

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University

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D. Thin Film Process Technology 분과

Room B

태백II+III(5층)

2016년 2월 24일(수) 10:10-11:40

[WB2-D] Thin Films for Emerging Devices II

좌장 : 전상훈(고려대학교), 최창환(한양대학교)

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| WB2-D-1 | 10:10-10:25 | Low-Temperature P-Type Poly-Ge Thin-Film Transistor Fabricated by Metal-Induced Lateral Crystallization for High Hole Mobility
Jae Hyo Park ¹ , Yoonyoung Bae ² , Seung Ki Joo ¹ , and Donghwan Ahn ²
<i>¹Department of Material Science and Engineering, Research Institute of Advanced Materials, Seoul National University; ²Department of Advanced Materials Engineering, Kookmin University</i> |
| WB2-D-2 | 10:25-10:40 | Wearable Transparent Oxide Thin-Film Transistor Via Inorganic-Based Laser Lift-Off
Han Eol Lee and Keon Jae Lee
<i>Department of Materials Science and Engineering, KAIST</i> |
| WB2-D-3 | 10:40-10:55 | Atomic Layer Deposition of GeTe and GexSbyTez Alloys Using Ge(N((CH₃)₃Si)₂)₂ Precursor
Taehong Gwon ¹ , Taeyong Eom ¹ , Sijung Yoo ¹ , Eui-sang Park ¹ , Sanggyun Kim ¹ , Moo-sung Kim ² , Iain Buchanan ³ , Manchao Xiao ³ , Sergei Ivanov ³ , and Cheol Seong Hwang ¹
<i>¹Department of Materials Science and Engineering and Inter-University Semiconductor Research Center, ²Air Products Korea, ³Air Products and Chemicals, Inc.</i> |
| WB2-D-4 | 10:55-11:10 | Decreasing Interfacial Layers of The Ferroelectric Hf_{0.5}Zr_{0.5}O₂ Film Capacitors by Wake-Up Effect
Han Joon Kim, Min Hyuk Park, Yu Jin Kim, Taehwan Moon, Keum Do Kim, Young Hwan Lee, Seung Dam Hyun, and Cheol Seong Hwang
<i>Department of Materials Science and Engineering and Inter-university Semiconductor Research Center, Seoul National University</i> |
| WB2-D-5 | 11:10-11:25 | Transparent Poly-Si Gate Thin-Film Transistors by NiSi₂ Seed-Induced Lateral Crystallization for Display Applications.
Ji Su Han, Jae Hyo Park, Hyung Yoon Kim, Ki Hwan Seok, Zohreh Kiaee, and Seung Ki Joo
<i>Department of Material Science and Engineering, Research Institute of Advanced Materials, Seoul National University</i> |
| WB2-D-6 | 11:25-11:40 | A New Method To Form NiGeSn Layer To Reduce Contact Resistance in Source/Drain Region for Future Ge CMOSFET
Jeyoung Kim ¹ , Meng Li ¹ , Jungwoo Oh ² , and Hi-Deok Lee ¹
<i>¹Department of Electronics Engineering, Chungnam National University, ²School of Integrated Technology, Yonsei University</i> |

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C. Material Growth & Characterization 분과

Room C
함백 I (5층)

2016년 2월 24일(수) 10:10-11:40

[WC2-C] Materials Growth & Characterization : III-Nitrides and Si

좌장 : 송진동(KIST)

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|---------|-------------|---|
| WC2-C-1 | 10:10-10:25 | 3차원 구조체의 질화물반도체를 이용한 무형광체 백색 발광다이오드 제작 및 분석
임승혁, 고영호, Christophe Rodriguez, 공수현, 조용훈
<i>한국과학기술원 물리학과</i> |
| WC2-C-2 | 10:25-10:40 | Statistical Analysis of GaN-based Light-Emitting Diodes Using Near-field Scanning Optical Microscopy and Cathodoluminescence
Minkwan Kim, Sunghan Choi, Joo-Hyung Lee, Chung-Hyun Park, and Yong-Hoon Cho
<i>Department of Physics and Graduate School of Nanoscience and Technology, KAIST</i> |
| WC2-C-3 | 10:40-10:55 | Enhanced Internal Quantum Efficiency of UVC $Al_xGa_{1-x}N/Al_yGa_{1-y}N$ Multiple Quantum Wells Grown on Polarization Free Nanostructure by HT-MOCVD
Jinwan Kim, Jaedo Pyeon, and Okyun Nam
<i>Convergence Center for Advanced Nano Semiconductor, Department of Nano-Optical Engineering Korea Polytechnic University</i> |
| WC2-C-4 | 10:55-11:10 | Annihilation Behavior of Planar Defects on Phosphorus-doped Silicon at Low Temperature
Dong-Hyun Im ^{1,2} , Yong In Kim ² , Myoung Ho Jeong ² , Kwang Wuk Park ² , Sung Kyu Kim ² , Jong Min Yuk ² , Woo Hyun Nam ² , Sang Yun Kim ² , Kong-Soo Lee ¹ , Ki-Vin Im ¹ , Han Jin Lim ¹ , and Jeong Yong Lee ²
<i>¹Process Development 2Team, Semiconductor Research and Development Center, Samsung Electronics Co. Ltd., ²Department of Materials Science and Engineering, KAIST</i> |
| WC2-C-5 | 11:10-11:25 | Characterization of The Strain Relaxation Behavior of SiGe Epitaxial Layer by Dry Oxidation
Hyunchul Jang, Byongju Kim, Sangmo Koo, Seran Park, and Dae-hong Ko
<i>Department of Materials Science and Engineering, Yonsei University</i> |
| WC2-C-6 | 11:25-11:40 | Estimation of Electrically Active Phosphorus Concentration by using The Impurity Distribution Function of Heavily Phosphorus-Doped Silicon
Minhyeong Lee, Sun-Wook Kim, Eunjung Ko, Hyunchul Jang, Sangmo Koo, and Dae-Hong Ko |

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Department of Materials Science and Engineering, Yonsei University

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G. Device & Process Modeling, Simulation and Reliability 분과

Room D

합백II+III(5층)

2016년 2월 24일(수) 10:10-11:40

[WD2-G] Device Modeling and Simulation 2 : Ab-Initio and Theoretical Study

좌장 : 이정수(포항공과대학교), 최성진(국민대학교)

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| WD2-G-1 | 10:10-10:25 | First-Principles-based Quantum Transport Calculations of 2D Material Field-Effect Transistors
Yongsoo Ahn, Sangchun Park, and Mincheol Shin
<i>School of Electrical Engineering, KAIST</i> |
| WD2-G-2 | 10:25-10:40 | Ab-initio Study on The Passivation of Ge/GeO₂ Interface by Density Functional Calculations
Kai Liu ^{1,2} , Cheol Seong Hwang ^{2,3} , and Jung-Hae Choi ¹
<i>¹Center for Electronic Materials, Korea Institute of Science and Technology, ²Department of Materials Science and Engineering, Seoul National University, ³Inter-University Semiconductor Research Center, Seoul National University</i> |
| WD2-G-3 | 10:40-10:55 | Influence of Cross Section Geometry and Channel Orientation on Electron Subband Energy in Elliptical Silicon Nanowires
Junsung Park and Sung-Min Hong
<i>School of Information and Communications, Gwangju Institute of Science and Technology</i> |
| WD2-G-4 | 10:55-11:10 | MoS₂ Metal Insulator Transition Based Memcapacitor Modeling and Simulation
Abdul Karim Khan, Jinwoo Noh, Chang-Hoo Sim, Yun Ji Kim, So-Young Kim, and Byoung Hun Lee
<i>Exel Lab, School of Material Science and Engineering, Gwangju Institute of Science and Technology</i> |
| WD2-G-5 | 11:10-11:25 | Ab-initio Study on The Effects of Doping in Mono and Bilayer MoS₂
Jaehong Park ^{1,2} , Cheol Seong Hwang ^{2,3} , and Jung-Hae Choi ¹
<i>¹Center for Electronic Materials, Korea Institute of Science and Technology, ²Department of Materials Science and Engineering, Seoul National University, ³Inter-University Semiconductor Research Center, Seoul National University</i> |
| WD2-G-6 | 11:25-11:40 | Atomistic Simulation of InAs Tunnel FETs based on TB-NEGF Method
Woo Jin Jeong and Mincheol Shin
<i>School of Electrical Engineering, KAIST</i> |

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O. System LSI Design 분과

Room F
봉래 I (6층)

2016년 2월 24일(수) 10:10-11:40

[WF2-O] VLSI System Design and Applications

좌장 : 김경기(대구대학교), 김지훈(서울과학기술대학교)

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| WF2-O-1 | 10:10-10:25 | Advanced ZigBee Baseband Processor for Internet-of-Things Applications
Jeonghyun Cheon, Hyunsu Hwang, and Yunho Jung
<i>School of Electronics and Information Engineering, Korea Aerospace University</i> |
| WF2-O-2 | 10:25-10:40 | Influence of Parasitic Power/Ground Resistance in Low Voltage Device under CDM ESD Stress
Dongsin Kim, Hyunjin Shin, Youngchul Kim, Kiwon Seo, and Doyoon Kim
<i>LDS Design, Standard Product Group, Magnachip Semiconductor</i> |
| WF2-O-3 | 10:40-10:55 | Diagonally-reinforced Lane Detection Scheme for High-performance ADAS
Mingu Park, Kyoungho Yoo, and Youngjoo Lee
<i>Department of Electronics Engineering, Kwangwoon University</i> |
| WF2-O-4 | 10:55-11:10 | Vivado HLS를 사용한 Image Fusion의 Xilinx FPGA 구현
Sangeun Ahn, Jeonghwan An, and Joonghwee Cho
<i>Department of Embedded System Engineering, Incheon National University</i> |
| WF2-O-5 | 11:10-11:25 | Two Step Forward Backward Architecture for Non-Binary LDPC Decoder
Injun Choi and Ji-Hoon Kim
<i>Department of Electronics Engineering, Chungnam National University</i> |
| WF2-O-6 | 11:25-11:40 | Retention-Time Aware Reconfigurable eDRAM-based FIFO Memory for Refresh-free DSP Design
Byeonggil Park, Gyuseong Kang, and Jongsun Park
<i>School of Electrical Engineering, Korea University</i> |

제23회 한국반도체학술대회

2016년 2월 22일(월)-24일(수), 강원도 하이원리조트

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

Room G

봉래표+Ⅲ(6층)

2016년 2월 24일(수) 10:10-11:40

[WG2-F] Si and Group-IV Photonics

좌장 : 조성재(가천대학교)

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| WG2-F-1 | 10:10-10:25 | Strained Ge Light Emitter on Ge-on-Dual Insulators for Improved Thermal Conduction and Optical Insulation
Youngmin Kim, Sungdae Woo, Daeik Kim, and Donguk Nam
<i>Department of Electronic Engineering, Inha University</i> |
| WG2-F-2 | 10:25-10:40 | Strained Ge MSM Nanowire Photodetectors
Sungdae Woo, Daeik Kim, Youngmin Kim, and Donguk Nam
<i>Department of Electronic Engineering, Inha University</i> |
| WG2-F-3 | 10:40-10:55 | Enhanced Photoluminescence of Phosphorus Doped Germanium with Phosphosilicate Glass
Chan-Hyuck Park ¹ , Han Pan ² , Kazumi Wada ² , and Donghwan Ahn ¹
¹ <i>School of Advanced Materials Engineering, Kookmin University,</i>
² <i>Department of Materials Engineering, University of Tokyo, Japan</i> |
| WG2-F-4 | 10:55-11:10 | Strain Orientation Dependence of Light Emission from Ge
Daeik Kim, Youngmin Kim, Sungdae Woo, and Donguk Nam
<i>Department of Electronic Engineering, Inha University</i> |
| WG2-F-5 | 11:10-11:25 | Germanium Microdisk with Lithographically-Tunable Strain
Donguk Nam
<i>Department of Electronic Engineering, Inha University</i> |
| WG2-F-6 | 11:25-11:40 | Ge-on-Si Microdisk Resonator with Enhanced Optical Confinement by SiN_x Stressor for Si Electronic and Photonic Integrated System
Xiaochi Chen ¹ , Seongjae Cho ² , James S. Harris ¹ , and Byung-Gook Park ³
¹ <i>Department of Electrical Engineering, Stanford University, USA,</i>
² <i>Department of Electronic Engineering, Gachon University,</i> ³ <i>Inter-University Semiconductor Research Center and Department of Electrical and Computer Engineering, Seoul National University</i> |

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J. Nano-Science & Technology 분과

Room H
육백 I (6층)

2016년 2월 24일(수) 10:10-11:40

[WH2-J] Two-Dimensional Materials / Spintronics

좌장 : 김근수(포항공과대학교)

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|---------|-------------|--|
| WH2-J-1 | 10:10-10:40 | [초청] Ionic Liquid Gated Field Effect Transistors based on Atomically Thin Transition Metal Dichalcogenides Crystals
Sanghyun Jo, Davide Costanzo, Helmuth Berger, and Alberto F. Morpurgo
<i>Department of Quantum Matter Physics and Group of Applied Physics, University of Geneva, Switzerland</i> |
| WH2-J-2 | 10:40-10:55 | Method To Eliminate Gate and Drain Bias Stress in WSe₂ Field Effect Transistors with Single Channel Pulsed <i>I-V</i> Measurement
Jun-Mo Park, In-Tak Cho, Won-Mook Kang, Byung-Gook Park, and Jong-Ho Lee
<i>Department of Electrical and Computer Engineering, Seoul National University</i> |
| WH2-J-3 | 10:55-11:10 | 그래핀 RF 소자의 Drain-gate Coupling에 의한 다중 신호 공진 현상
이상경 ^{1,2} , 조천흠 ^{1,3} , 유태진 ^{1,2} , 이호인 ^{1,2} , A. N. R. Reza ^{1,2} , 이병훈 ^{1,2,3}
¹ 미래전자소자 연구센터, ² 광주과학기술원 신소재공학부, ³ 광주과학기술원 나노바이오재료전자공학과 |
| WH2-J-4 | 11:10-11:25 | Low Current Switching Induced by Large Spin Orbit Torque of Tungsten
Seung-heon Chris Baek ^{1,2} , Kyung-Woong Park ¹ , and Byong-Guk Park ¹
¹ Department of Materials Science and Engineering, KAIST,
² Department of Electrical Engineering, KAIST |
| WH2-J-5 | 11:25-11:40 | Electric Field Induced Magnetic Anisotropy Control with Magnetic Tunnel Junction Structures
Kyung-Woong Park ^{1,2} , Seung-Heon Chris Baek ¹ , Dae-Hoon Kim ¹ , Soo-Man Seo ² , Sung-Woong Chung ² , and Byong-Guk Park ¹
¹ Department of Materials and Science and Engineering, KAIST,
² Research and Development Division, SK hynix Inc. |

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B. Patterning 분과

Room I
육백II(6층)

2016년 2월 24일(수) 10:00-11:40

[WI2-B] Patterning

좌장 : 김현우(한양대학교)

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|---------|-------------|---|
| WI2-B-1 | 10:10-10:25 | Effect of Etching Gas on Magnetic Tunnel Junction Stacks Etching using Inductively Coupled Plasma Reactive Ion Etching
Su Min Hwang, Jae Yong Lee, Adrian Adalberto Garay, Ji Hyun Choi, and Chee Won Chung
<i>Department of Chemistry and Chemical Engineering, Center for Design and Applications of Molecular Catalysts, Inha University</i> |
| WI2-B-2 | 10:25-10:40 | Impact of Process Parameters on RLS in EUV Resist Simulation for 10-nm Pattern Formation
Sang-Kon Kim ^{1,2}
¹ <i>Department of Applied Physics, Hanyang University;</i> ² <i>Department of Science, Hongik University</i> |
| WI2-B-3 | 10:40-10:55 | OPC Optimization Techniques for Reducing The Mismatch Between Overlay Metrology and Device Pattern Cell
Jae-hee Hwang, Shinyoung Kim, Chanha Park, Hyunjo Yang, and Donggyu Yim
<i>Research and Development Division, SK hynix Inc.</i> |
| WI2-B-4 | 10:55-11:10 | Investigation on Overlay Analysis using Design Based Metrology Tool
Sangwoo Kim, Gyoyeon Jo, Sunkeun Ji, Shinyoung Kim, Hyunwoo Kang, Minwoo Park, Jungchan Kim, Chanha Park, Hyunjo Yang, and Donggyu Yim
<i>Research and Development Division, SK hynix Inc.</i> |
| WI2-B-5 | 11:10-11:25 | Improving Same Colors Space Distribution in Multi Patternd Layers for Hotspots Reduction.
Dong-Gyun Kim ¹ , Sung-Keun Park ¹ , Young-Gook Park ¹ , Jae-Seok Yang ¹ , Jong-Hyun Lee ¹ , Mostafa Shadoufa ² , and Mohammed Harb ²
¹ <i>Samsung Electronics Co., Ltd.,</i> ² <i>Mentor Graphics Corporation, Egypt</i> |
| WI2-B-6 | 11:25-11:40 | High Scan Speed ArF Immersion Scanner 에서 Topcoat-less Resist 가 가져야 할 특성에 관한 연구
손민석, 류윤정, 오창일, 반근도, 김겸, 박은주, 복철규, 김영식, 곽노정
<i>Research and Development Division, DRAM Process Group, SK hynix Inc.</i> |

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

Room J

청옥 I (6층)

2016년 2월 24일(수) 10:10-11:40

[WJ2-P] Device for Energy (Solar Cell, Power Device, Battery, etc.)

좌장 : 명재민(연세대학교), 김윤기(삼성SDI)

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|---------|-------------|---|
| WJ2-P-1 | 10:10-10:40 | [초청] Self-Powered Flexible Inorganic Electronic Systems
Keon Jae Lee
<i>Department of Materials Science and Engineering, KAIST</i> |
| WJ2-P-2 | 10:40-10:55 | Simple Mixture Cathode Materials for Lithium Rechargeable Batteries
Sung-Kyun Jung and Kisuk Kang
<i>Department of Material Science and Engineering, Seoul National University</i> |
| WJ2-P-3 | 10:55-11:10 | Fabrication and Modeling of Photoconductive Switch based on p-i-n Structure
Cho Hee Lee, Junsung Park, Jae-Hyung Jang, and Sung-Min Hong
<i>Gwangju Institute of Science and Technology</i> |
| WJ2-P-4 | 11:10-11:25 | A Reconfigurable Rectified Flexible Energy Harvester Via Solid-State Single Crystal Grown PMN-PZT
Dong Hyun Kim, Geon-tae Hwang, and Keon jae Lee
<i>Department of Material Science and Engineering, KAIST</i> |
| WJ2-P-5 | 11:25-11:40 | Flexible Energy Harvesting Devices Based on High Piezoelectric Perovskite-structured Materials
Kwi-Il Park
<i>Department of Energy Engineering, Gyeongnam National University of Science and Technology</i> |

제23회 한국반도체학술대회

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E. Compound Semiconductors 분과

Room K

청옥Ⅱ+Ⅲ(6층)

2016년 2월 24일(수) 10:10-11:40

[WK2-E] III-V Device

좌장 : 민병규(한국전자통신연구원), 김해천(한국전자통신연구원)

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|---------|-------------|---|
| WK2-E-1 | 10:10-10:25 | High Performance In_{0.7}Ga_{0.3}As MOSFETs with Al₂O₃/HfO₂
Seung Woo Son, Jin Su Kim, Hwal Kim, Jung Ho Park, Do-Kywn Kim, Jung-Hee Lee, and Dae-Hyun Kim
<i>School of Electronics Engineering, Kyungpook National University</i> |
| WK2-E-2 | 10:25-10:40 | Oxidation Study on The (100), (110) and (111) Surfaces of InAs by ab-initio Calculations
In Won Yeu ^{1,2} , Cheol Seong Hwang ^{2,3} , and Jung-Hae Choi ¹
<i>¹Center for Electronic Materials, Korea Institute of Science and Technology, ²Department of Materials Science and Engineering, Seoul National University, ³Inter-University Semiconductor Research Center, Seoul National University</i> |
| WK2-E-3 | 10:40-10:55 | Improvement of Thermal Stability of Ni-InGaAs on Source and Drain by Using Pd Interlayer for High Performance N-InGaAs MOSFET
Meng Li ¹ , Jeyoung Kim ¹ , Jungwoo Oh ² , and Hi-Deok Lee ¹
<i>¹Department of Electronics Engineering, Chungnam National University, ²School of Integrated Technology, Yonsei University</i> |
| WK2-E-4 | 10:55-11:10 | Universal Mobility Behavior in In_{0.7}Ga_{0.3}As QW-MOSFETs
Jung Ho Park, Hwal Kim, Do-Kywn Kim, Jin Su Kim, Seung Woo Son, Jung-Hee Lee, and Dae-Hyun Kim
<i>School of Electronics Engineering, Kyungpook National University</i> |
| WK2-E-5 | 11:10-11:25 | The Fabrication of InGaAs MOSFET with Y₂O₃ Gate Insulator
Seong Kwang Kim ^{1,2} , Dae-Myeong Geum ^{2,3} , Jungmin Lee ¹ , Min-Su Park ² , Jae-Phil Shim ² , Chang Zoo Kim ⁴ , Hyung-jun Kim ² , Jin-Dong Song ² , Won Jun Choi ² , Sung-Jin Choi ¹ , Dae Hwan Kim ¹ , SangHyeon Kim ² , and Dong Myong Kim ¹
<i>¹School of Electrical Engineering, Kookmin University, ²Korea Institute of Science and Technology, ³Department of Materials Science and Engineering, Seoul National University, ⁴Korea Advanced Nano Fab Center</i> |
| WK2-E-6 | 11:25-11:40 | Improvement of Interfacial-state Density (D_{it}) in High-k/In_{0.53}Ga_{0.47}As MOSCAPs by D₂ High-Pressure Annealing (HPA)
Jin Su Kim ¹ , Seung Heon Shin ² , Do-Kywn Kim ¹ , Young Dae Cho ³ , Chan-Soo Shin ³ , Won-Kyu Park ³ , Manny Rivera ⁴ , Jae Ik Lew ⁴ , Jung- |

The 23rd Korean Conference on Semiconductors (KCS 2016)

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Hee Lee¹, S. K. Banerjee², Tae-Woo Kim⁵, and Dae-Hyun Kim¹

¹*School of Electrical Engineering, Kyungpook National University*, ²*UT-Austin, USA*, ³*Korea Advanced Nano Fab Center*, ⁴*PoongSan, USA*,
⁵*sematech, USA*

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Room E

컨벤션홀 L(5층)

2016년 2월 24일(수) 11:40-13:00

[WP1] PosterII

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|-------|-------------|---|
| WP1-1 | 11:40-13:00 | One-Dimensional Electrical Contact To Molybdenum Disulfide
Zheng Yang ¹ , Changho Ra ¹ , Faisal Ahmed ² , Daeyeong Lee ¹ , Minsup Choi ¹ , Xiaochi Liu ¹ , Deshun Qu ¹ , and Wonjong Yoo ¹
<i>¹SKKU Advanced Institute of Nano Technology, Sungkyunkwan University, ²Department of Mechanical Engineering, Sungkyunkwan University</i> |
| WP1-2 | 11:40-13:00 | Sensitivity Analysis and Fault Detection of Plasma Monitoring Signals with Multivariate Analysis
Kyongbeom Koh ¹ , Hakseung Lee ¹ , Haegyung Jang ² , Honyoung Lee ³ , and Heeyeop Chae ^{1,2}
<i>¹School of Chemical Engineering, Sungkyunkwan University, ²SKKU Advanced Institute of Nano Technology, Sungkyunkwan University, ³School of Semiconductor and Display Engineering, Sungkyunkwan University</i> |
| WP1-3 | 11:40-13:00 | Plasma-assisted Decoration of Metal Nanoparticles onto Carbon Nanotubes for Sensing Enhancement
Hyouon Woo Kim, Han Gil Na, Yong Jung Kwon, and Sung Yong Kang
<i>Department of Materials Science and Engineering, Hanyang University</i> |
| WP1-4 | 11:40-13:00 | Plasma-sputtering of Pt Nanoparticles on ZnO-Branched SnO₂ Nanowires and Their Sensing Characteristics
Hyouon Woo Kim, Han Gil Na, Yong Jung Kwon, and Sung Yong Kang
<i>Department of Materials Science and Engineering, Hanyang University</i> |
| WP1-5 | 11:40-13:00 | Thickness Control and Surface Potential Changes of MoS₂ by using O₂ Plasma.
Suh Hyun Kim, Deshun Qu, Chang Ho Ra, Min Sup Choi, Xiaochi Liu, and Won Jong Yoo
<i>SKKU Advanced Institute of Nano Technology, Sungkyunkwan University</i> |
| WP1-6 | 11:40-13:00 | Multi-Level of Directed Self-Assembly
Young Joo Choi and Sang Ouk Kim
<i>Department of Materials and Science, KAIST</i> |
| WP1-7 | 11:40-13:00 | High Density Plasma Etching of Palladium Thin Films
Jae Yong Lee, Su Min Hwang, Adrian Adalberto Garay, Ji Hyun Choi, and Chee Won Chung
<i>Department of Chemistry and Chemical Engineering, Center for Design and Applications of Molecular Catalysts, Inha University</i> |

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- WP1-8 11:40-13:00 Effect of Non-Corrosive Gas Mixture on Etching of CoPt Alloys using Inductively Coupled Plasma Reactive Ion Etching**
Su Min Hwang, Adrian Adalberto Garay, Ji Hyun Choi, Jae Yong Lee, and Chee Won Chun
Department of Chemistry and Chemical Engineering, Center for Design and Applications of Molecular Catalysts, Inha University
- WP1-9 11:40-13:00 Etching Characteristics of Ta Thin Films using Inductively Coupled Plasma of Chlorine Gas**
Ji Hyun Choi, Adrian Adalberto Garay, Su Min Hwang, Jae Yong Lee, and Chee Won Chung
Department of Chemistry and Chemical Engineering, Center for Design and Applications of Molecular Catalysts, Inha University
- WP1-10 11:40-13:00 Inductively Coupled Plasma Reactive Ion Etching of CoFeB Magnetic Thin Films and Nanometer-size Patterned Magnetic Tunnel Junction Stacks Using C₂H₅OH/Ar Plasma Chemistries**
Adrian Adalberto Garay, Ji Hyun Choi, Su Min Hwang, Jae Yong Lee, and Chee Won Chung
Department of Chemistry and Chemical Engineering, Center for Design and Applications of Molecular Catalysts, Inha University
- WP1-11 11:40-13:00 Au@Ag Core-Shell Nanoparticle Array by Block Copolymer Self-Assembly for Tunable Plasmonic Properties**
Seung Keun Cha, Jeong Ho Mun, and Sang Ouk Kim
Department of Materials Science and Engineering, KAIST
- WP1-12 11:40-13:00 SOD Thermal Stress로 인한 Wafer Distortion이 Overlay Error에 미치는 영향**
이지은
Research and Development Division, SK hynix Inc.
- WP1-13 11:40-13:00 Etching Characteristics and Mechanisms of Ar addition in Halogen-Based Inductively Coupled Plasmas for Dry Etching TiO₂ Thin Films**
Junmyung Lee¹, ByungJun Lee¹, Alexander Efremov², and Kwang-Ho Kwon¹
¹Department of Control and Instrumentation Engineering, Korea University, ²Department of Electronic Devices and Materials Technology, State University of Chemistry and Technology, Russia
- WP1-14 11:40-13:00 Magnetic Field-Induced Assemblies of Magnetic Nanoparticles into Well-Ordered Lattice Structures**
Myunghwan Byun
Department of Advanced Materials Engineering, Keimyung University
- WP1-15 11:40-13:00 Spatially-Defined Wrinkles in Gradient Stripe-Patterned Polymer Thin Films**
Myunghwan Byun
Department of Advanced Materials Engineering, Keimyung University

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| WP1-16 | 11:40-13:00 | Study on The Improvement of The Hole Pattern Profile with Fluorocarbon Etching Gas
Boung Jun Lee ¹ , Byung Jun Lee ² , Ji Woon Yang ¹ , and Kwang Ho Kwon ²
<i>¹Department of Electronics and Information Engineering, Korea University, ²Department of Control and Instrumentation Engineering, Korea University</i> |
| WP1-17 | 11:40-13:00 | The Fabrication of Low-loss Si-Photonic Devices by Reducing The Side-wall Roughness at The Dry Etching Process
Dong-Eun Yoo and Dong-Wook Lee
<i>National Nano Fab Center</i> |
| WP1-18 | 11:40-13:00 | 고차조화파 생성 기반의 Coherent EUV 광원 개발 및 출력 특성
박한용 ^{1,2} , 김용수 ^{1,2} , 김영희 ¹ , 성하민 ³ , 김점술 ³ , 이주한 ² , 박민철 ¹ , 전영민 ¹
<i>¹한국과학기술연구원 센서시스템연구센터, ²서울시립대학교 전자전기 컴퓨터공학과, ³레이저 스펙트라</i> |
| WP1-19 | 11:40-13:00 | Fabrication of Contact-hole Pattern in 193-nm Immersion Lithography
Sunhee Lim, Byoungsub Nam, Dongjin Lee, Sangjin Oh, Dongwon Lee, Daesung Kim, Seyoung Oh, Hyunjo Yang, and Donggyu Yim
<i>Research and Development Division, SK hynix Inc.</i> |
| WP1-20 | 11:40-13:00 | EUV 리소그래피 시뮬레이션을 통한 SRAF 적용 마스크의 공정 허용도 최적화
장용주 ¹ , 김정식 ¹ , 홍성철 ² , 조한구 ³ , 안진호 ^{1, 2}
<i>¹한양대학교 나노반도체공학과, ²한양대학교 신소재공학과, ³한양대학교 나노과학기술연구소</i> |
| WP1-21 | 11:40-13:00 | EUV용 PSM을 통한 SRAF 적용 마진 및 노광공정 마진 향상 연구
김정식 ¹ , 홍성철 ² , 장용주 ¹ , 조한구 ³ , 안진호 ^{1,2}
<i>¹한양대학교 나노반도체공학과, ²한양대학교 신소재공학과, ³한양대학교 나노과학기술연구소</i> |
| WP1-22 | 11:40-13:00 | Controlled MoS₂ Layer Etching and Plasma Treatment
Kyung Chae Yang, Sung Woo Park, Min Hwan Jeon, Kyong Nam Kim, and Geun Young Yeom
<i>Department of Advanced Materials Science and Engineering, Sungkyunkwan University</i> |
| WP1-23 | 11:40-13:00 | Plasma Properties of Ferrite Superimposed Dual Frequency Inductively Coupled Plasma Source
S. M. Lee ¹ , T. H. Kim ¹ , C. H. Lee ¹ , J. W. Bae ¹ , K. N. Kim ¹ , and G. Y. Yeom ^{1,2}
<i>¹Department of Advanced Materials Science and Engineering, Sungkyunkwan University, ²Sungkyunkwan Advanced Institute of Nano Technology, Sungkyunkwan University</i> |

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- WP1-24** **11:40-13:00** **Effects of Etch Gases on The Etching of STT-MRAM**
Sung Woo Park, Kyung Chae Yang, Min Hwan Jeon, Kyong Nam Kim,
and Geun Young Yeom
*Department of Advanced Materials Science and Engineering,
Sungkyunkwan University*
- WP1-25** **11:40-13:00** **Optimizing Process Condition of Inductively Coupled Plasma
Etching for Bulk Aluminum**
Yun-Bin Kim, Chang-Su Seo, Sang-Yeop Jee, Suk-Jin Jung, Sin Keun
Park, Jong-Seung Park, Jong Ho Lee, and Cheol Seong Hwang
*Inter-University Semiconductor Research Center, Seoul National
University*
- WP1-26** **11:40-13:00** **Aspect Ratio Dependent Etching in DRAM Metal Contact Process**
황원재, 장경태, 엄정환, 이효창, 이승형
Etch Technology Team, Samsung Electronics Co., Ltd.
- WP1-27** **11:40-13:00** **Mechanism of CD Drift in Flash Memory DPT Process**
양채영, 방진영, 이효창, 김영주
Etch Technology Team, Samsung Electronics Co., Ltd.
- WP1-28** **11:40-13:00** **Growth of Free-standing M-Plane GaN using Hydride Vapor Phase
Epitaxy**
Seohwi Woo¹, Sangil Lee¹, Uiho Choi¹, Hyunjae Lee², Minho Kim²,
Jaiyong Han², and Okhyun Nam¹
*¹Convergence Center for Advanced Nano Semiconductor, Department
of Nano-Optical Engineering, Korea Polytechnic University, ²Lumistal
Co., Ltd., Business Incubation Center, Korea Polytechnic University*
- WP1-29** **11:40-13:00** **Effect of Selenium Doping on The Crystallization Properties of
GeSb for Phase Change Memory Applications**
Jeong-Hoon Kim¹, Jeong-Hee Park², and Dae-Hong Ko¹
*¹Department of Materials Science and Engineering, Yonsei University,
²Process Development Team, Semiconductor Research and
Development Division, Samsung Electronics Co., Ltd.*
- WP1-30** **11:40-13:00** **Growth Enhancement and Nitrogen Loss in ZnOxNy Atomic Layer
Deposition with NH₃**
Soo Hyun Kim¹, Jung Joon Pyeon^{1,2}, Woo Cheol Lee^{1,3}, Jin-Sang Kim¹,
and Seong Keun Kim¹
*¹Center for Electronic Materials, Korea Institute of Science and
Technology, ²Korea University-Korea Institute of Science and
Technology, ³Department of Materials Science and Engineering, Seoul
National University*
- WP1-31** **11:40-13:00** **Selective Epitaxial Growth of GaAs on In-situ Profile Formed Si
(001) Surface by Metal-Organic Chemical Vapor Deposition**
Young-Dae Cho^{1,2}, In-Geun Lee^{1,2}, Mi-Jin Jung¹, Hyunsu Shin¹, Dong-
Hwan Jun², Chan-Soo Shin², Kyung-Ho Park², Won-Kyu Park², Dae-
Hyun Kim³, and Dae-Hong Ko¹
¹Department of Materials Science and Engineering, Yonsei University,

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²Korea Advanced Nano Fab Center, ³School of Electronics Engineering,
Kyungpook National University

- WP1-32** **11:40-13:00** **Formation and Characterization of GaN:TiO₂ PN Junction**
Taeyoung Yang¹ and Jinsub Park²
¹Department of Electronics and Computer Engineering, Hanyang University, ²Department of Electronic Engineering, Hanyang University
- WP1-33** **11:40-13:00** **A Simple Sonochemical Approach of Mn²⁺ Doped ZnO Nanopowder: Structural, Optical and Magnetic Studies**
B. Babu, Dong Su Shin, and Jinsub Park
Department of Electronics and Computer Engineering, Hanyang University
- WP1-34** **11:40-13:00** **Low Temperature Growth of Polycrystalline Gallium Arsenide on SiO₂**
Il-Pyo Roh and Jin-Dong Song
Center for Opto-Electronic Materials and Devices, Korea Institute of Science and Technology
- WP1-35** **11:40-13:00** **Growth of High-Quality Thin InSb on (001) GaAs Substrate Using InAlSb Continuously Graded Buffer Layer**
Sooseok Kang, Sanghoon shin, and Jindong Song
Center for Opto-Electronic Materials and Devices, Korea institute of Science and Technology
- WP1-36** **11:40-13:00** **Formation of InGaAs Nanowires on (111) Si for Antireflection**
H. K. Kang^{1,2} E. H. Lee¹, J. D. Song¹, J. J. Yoon¹, M. H. Bae¹, I. K. Han¹, W. J. Choi¹, S. K. Chang², M. H. Cho², and Y. D. Kim³
¹Center for Opto-Electronic Convergence Systems, Korea Institute of Science and Technology, ²Department of Physics, Yonsei University, ³Nano-Optical Property Laboratory and Department of Physics, Kyung Hee University
- WP1-37** **11:40-13:00** **Fabrication of Photodetector Using CuO-In₂O₃ Arrays**
Inje Cho¹, K. Mageshwari¹, and JinsubPark^{1,2}
¹Department of Electronics and Computer Engineering, Hanyang University, ²Department of Electronic Engineering, Hanyang University
- WP1-38** **11:40-13:00** **Effect of Inter SiO_x Layer Quality on CV Curve of TiN/ HfO₂/ SiO_x/ Si Stack for Backside Illuminated CMOS Image Sensor**
Heedo Na, Jimin Lee, Juyoung Jeong, Jiwon Choi, and Hyunchul Sohn
Department of Materials Science and Engineering, Yonsei University
- WP1-39** **11:40-13:00** **Position Controlled Growth of Quantum Dots and Nanowires**
Suk In Park and Jin Dong Song
Center of Opto-Electronic Material and Devices, Korea Institute of Science and Technology
- WP1-40** **11:40-13:00** **Surface Morphology Control of GaN/AlGaIn Heterostructures for Ultraviolet Light Emitting Diodes**

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Dohyun Kim^{1,2}, Keunman Song², Jehyuk Choi², and Jinsub Park¹
¹Department of Electronics and Computer Engineering, Hanyang University, ²Korea Advanced Nano Fab Center

- WP1-41 11:40-13:00 Single Photon Emission of InAs QD with GaAs/Air-Gap Based Distributed Bragg Reflector**
J. H. Kyhm, I. P. Rho, and J. D. Song
Center for Opto-Electronic Materials and Devices Research Post-Si Semiconductor, Korea Institute of Science and Technology
- WP1-42 11:40-13:00 Epitaxial Growth of The Si_{1-x}Ge_x Fin Structure and Its Strain Relaxation**
Sangmo Koo, Hyunchul Jang, and Dae-Hong Ko
Department of Materials Science and Engineering, Yonsei University
- WP1-43 11:40-13:00 The Effect of The Tellurium Doping on The Surface Roughness of InP Buffer on Si Substrate**
Dong-Hwan Jun, Hae Yong Jeong, and Won-Kyu Park
Korea Advanced Nano-Fab Center
- WP1-44 11:40-13:00 GaN Growth on Poly-crystalline Diamond/Si Substrate by Metal Organic Chemical Vapor Deposition**
Byeongchan So¹, Taemyung Kwak¹, Kyungjae Lee¹, Kwangse Ko¹, Daehong Min¹, Donghwy Park¹, Wookseong Lee², Ilki Han³, Joonyeon Chang², and Okhyun Nam¹
¹Convergence Center for Advanced Nano Semiconductor, Department of Nano-Optical Engineering Korea Polytechnic University, ²Post-Silicon Semiconductor Institute, Korea Institute of Science and Technology, ³Center for Opto-Electronic Materials and Devices, Korea Institute of Science and Technology
- WP1-45 11:40-13:00 Bottom-up Synthesis of Self-Aligned Graphene Nanoribbons on Single-crystal Germanium Surface**
Seog-Gyun Kang¹, Min-Sung Kim², Yong-Seung Shin², Yu-Hwan Hyeon², and Dongmok Whang^{1,2}
¹School of Advanced Materials Science and Engineering, Sungkyunkwan University, ²SKKU Advanced Institute of Nanotechnology, Sungkyunkwan University
- WP1-46 11:40-13:00 Growth of InAs on Patterned Si**
Sooseok Kang, Ilpyo Rho, and Jindong Song
Center for Opto-Electronic Materials and Devices, Korea institute of Science and Technology
- WP1-47 11:40-13:00 Atmospheric Pressure Plasma-Enhance Chemical Vapor Deposition Process for High Throughput and High Quality Si Epitaxy**
Sanghyeon Lee¹, Gwi Hyun Kim¹, Seungwoo Hong¹, Sangmo Koo², Seran Park², Hyunsoo Shin², Hoon-Jung Oh³, Dae-Hong Ko^{2,3}, and Seung Jae Baik¹
¹Department of Electrical, Electronic, and Control Engineering, Hankyong National University, ²Department of Materials Science and

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Engineering, Yonsei University, ³BIOIT Micro Fab Center, Yonsei University

- WP1-48** **11:40-13:00** **Accurate Process Temperature Monitoring in Narrow Gap Plasma-Enhance Chemical Vapor Deposition System**
Gwi Hyun Kim, Sanghyeon Lee, Seungwoo Hong, and Seung Jae Baik
Department of Electrical, Electronic, and Control Engineering, Hankyong National University
- WP1-49** **11:40-13:00** **Solution-Free Synthesis of Low-Dimensional Graphene Encapsulated Nanocomposites in Near-Room Temperature**
Se-Yang Kim¹, Jinsung Kwak¹, Jae Hwan Chu¹, Jeong Beom Kim², Sung Youb Kim³, Kibog Park⁴, and Soon-Yong Kwon^{1,3}
¹School of Materials Science and Engineering, Low Dimensional Carbon Materials Center, Ulsan National Institute of Science and Technology, ²School of Life Science, Max Planck Partner Group-Molecular Biomedicine Laboratory(MPPG-MBL), Ulsan National Institute of Science and Technology, ³School of Mechanical and Nuclear Engineering, Ulsan National Institute of Science and Technology, ⁴Department of Physics, Ulsan National Institute of Science and Technology
- WP1-50** **11:40-13:00** **High Performance Flexible UV Phototransistor using Hybrid Channel of Vertical ZnO Nanorods and Graphene**
Vinh Quang Dang, Tran Quang Trung, Le Thai Duy, Bo-Yeong Kim, Saqib Siddiqui, Wonil Lee, and Nae-Eung Lee
School of Advanced Materials Science and Engineering, Sungkyunkwan University
- WP1-51** **11:40-13:00** **Investigating Gate Metal Induced Reduction of Surface Donor Density in AlGaIn/GaN Heterostructure by Electroreflectance Spectroscopy**
Kyu-Sang Kim¹, Jong-Hoon Shin², and Kwang-Choong Kim²
¹Department of Applied Physics and Electronics, Sangji University, ²IGBT part, System IC Research and Development Laboratory, LG Electronics Inc.
- WP1-52** **11:40-13:00** **AlGaIn/GaN Power HEMTs for Next Generation Radar Systems**
강동민, 김해천, 이종민, 김성일, 안호균, 민병규, 윤형섭, 김동영, 이상흥, 임종원
한국전자통신연구원 RF융합부품연구실
- WP1-53** **11:40-13:00** **Soluble-Processed SiO₂ Gate Dielectrics Fabrication Via UV Photo Annealing Process for Flexible Oxide Transistors**
Hyeonju Seol, Nuri On, Azida Azmi, and Jaekyeong Jeong
Department of Electronic and Computer Engineering, Hanyang University
- WP1-54** **11:40-13:00** **Improvement in High Mobility of Top Gate Zinc Tin Oxide Transistor by Metal Capping Method**
Sang Tae Kim¹, Hyuk Ji², and Jae Kyeong Jeong¹

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¹Department of Electronics and Computer Engineering, Hanyang University, ²Department of Materials Science and Engineering, Inha University

- WP1-55** **11:40-13:00** **Capping Layer Effects on P-GaN Gate HEMT**
Myeong-Kyu Eo, Chan-Yong Jeong, Sang-Hun Song, and Hyuck-In Kwon
School of Electrical and Electronics Engineering, Chung-Ang University
- WP1-56** **11:40-13:00** **Fabrication of Rectangular GaN Schottky Barrier Diode with Low On-State Resistance than Circular GaN Schottky Barrier Diode**
Jihyun Yu¹, Yeji Lee¹, Changju Youn¹, Cheoljong Choi¹, Taehoon Jang¹, and Kyuhwan Shim^{1,2}
¹Department of Semiconductor and Chemical Engineering, Semiconductor Physics Research Center, Chonbuk National University, ²Research and Development Division, Sigetronics, Inc.
- WP1-57** **11:40-13:00** **Crystallographic Study on The Lateral GaN Nanowire by Using Two-Step TMAH Wet Etching and HfO₂ Sidewall Spacer**
Ki-Sik Im, Sindhuri Vodapally, Dong-Hyeok Son, Young-Woo Jo, and Jung-Hee Lee
School of Electronics Engineering, Kyungpook National University
- WP1-58** **11:40-13:00** **Temperature Dependence of Current-Voltage Characteristics of Packaged AlGaIn/GaN HEMT on SiC Substrate**
Jong-Min Lee, Cheol-Won Ju, Byoung-Gue Min, Hyung Sup Yoon, Ho-Kyun Ahn, Seong Il Kim, Dong Min Kang, Hae Cheon Kim, Sang-Heung Lee, Dong-Young Kim, Kyu-Jun Jo, Jae-Won Do, Hyun- Uk Jung, Min-Jung Shin, and Jong-Won Lim
RF Convergence Components Research Section, IT Materials and Components Laboratory, Electronics and Telecommunications Research Institute
- WP1-59** **11:40-13:00** **Effect of P-GaN Back Barrier in 2DEG of AlGaIn/GaN HEMTs on SiC Substrate**
Kwangse Ko¹, Kyungjae Lee¹, Byeongchan So¹, Cheon Heo¹, Kyungbae Lee¹ and Okyun Nam¹, Sang-woo Han², and Ho-Young Cha²
¹Convergence Center for Advanced Nano Semiconductor, Department of Nano-Optical Engineering, Korea Polytechnic University, ²School of Electronic and Electrical Engineering, Hongik University
- WP1-60** **11:40-13:00** **Suppression of Current Collapse in AlGaIn/GaN MISHFET with Al₂O₃/AlN Passivation Layer**
Hee-Sung Kang, Chul-Ho Won, Jae-Hong Lee, Jeong-Gil Kim, Do-Kywn Kim, Quan Dai, Yan Dong, Jun-Hyeok Lee, Young Jun Yoon, Vodapally Sindhuri, In Man Kang, and Jung-Hee Lee
School of Electronics Engineering, Kyungpook National University
- WP1-61** **11:40-13:00** **X-band 5W AlGaIn/GaN HEMT Power MMICs**
김성일, 안호균, 이상홍, 이종민, 강동민, 민병규, 임종원
한국전자통신연구원 RF융합부품연구실

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- WP1-62** **11:40-13:00** **A Study of Stress and Its Effect on Electrical Properties of AlGaIn/GaN HEMT**
Hyun-Wook Jung¹, Sung-Jin An², Min-Jeong Sin¹, Jae-Won Do¹,
Byoung-Gue Min¹, Haecheon Kim¹, Hyung Sup Yoon¹, Ho-Kyun Ahn¹,
Kyu-Jun Cho¹, Mun Seok Jeong², Jong-Won Lim¹, Yong Hwan Kwon¹,
and Eun Soo Nam¹
*¹RF Convergence Component Research Section, Electronics and
Telecommunication Research Institute, ²Department of Energy Science,
Sungkyunkwan University*
- WP1-63** **11:40-13:00** **Advanced Backend Processing for GaN HEMT Devices: Wafer Thinning, Dicing, and Cleaning**
Jae-Won Do, Min Jeong Shin, Hyun-Wook Jung, Haecheon Kim,
Byoung-Gue Min, Ho-Kyun Ahn, Hyung Sup Yoon, Kyu-Jun Cho,
Jong-Won Lim, Yong Hwan Kwon, and Eun Soo Nam
*RF Convergence Components Research Sector, Electronics and
Telecommunication Research Institute*
- WP1-64** **11:40-13:00** **Low-Frequency Noise Characteristics of InGaIn-based Light-emitting Diodes Under Photoexcitation**
Chan Hyoung Oh¹, Dong-Soo Shin^{2,3}, and Jong-In Shim¹
*¹Department of Electronics and Communication Engineering,
Hanyang University, ²Department of Applied Physics, Hanyang
University, and ³Department of Bionanotechnology, Hanyang
University*
- WP1-65** **11:40-13:00** **Improved Pulse Response of AlGaIn/GaN Heterostructure Diode Using N₂ Plasma Treatment and Post Anode Annealing**
Ra-Seong Ki¹, Jun-Seok Jeong¹, Ho-Young Cha², and Kwang-Seok Seo¹
*¹Department of Electrical Engineering and Computer Science, Seoul
National University, ²Department of Electronic and Electrical
Engineering, Hongik University*
- WP1-66** **11:40-13:00** **고압 수소 열처리 압력에 따른 n-/p-type In_{0.53}Ga_{0.47}As 상의 HfO₂/Al₂O₃ 게이트 유전체 특성**
최성호¹, 송정근¹, 안영서¹, 이창민¹, 방현준², 최리노², 김형섭¹
¹성균관대학교 신소재공학과, ²인하대학교 신소재공학과
- WP1-67** **11:40-13:00** **Effect of AlN Nucleation Layer on Leakage Current in AlGaIn/GaN HEMTs Grown on 4H-SiC by MOCVD**
Kyeongjae Lee, Kwangse Ko, Cheon Heo, Byeongchan So, and
Okhyun Nam
Department of Nano-Optical Engineering Korea Polytechnic University
- WP1-68** **11:40-13:00** **Improvement in Transconductance and Hysteresis of E-mode AlGaIn/GaN MIS-HEMTs with Cat-CVD SiNx as Gate Insulator**
Myoung-Jin Kang¹, Gwang-Ho Choi¹, Su-Keun Eom¹, Ho-Young Cha²,
and Kwang-Seok Seo¹
¹Department of Electrical and Computer Engineering and Inter-

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*University Semiconductor Research Center, Seoul National University,
2Department of Electronic and Electrical Engineering, Hongik
University*

- WP1-69** **11:40-13:00** **Improvement of the LEE of the AlGaInP-based VI-LEDs with Wafer-Bonded Si Conductive Substrates using the n-AlGaInP Nanopillars**
Ho-Soung Ryu^{1,2}, Seung Kyu Oh¹, Yu-Jung Cha¹, Yu Lim Lee¹, Hwa-Sub Oh², Jong-Hyeob Baek², and Joon Seop Kwak¹
¹Department of Printed Electronics Engineering, Suncheon National University, ²LED Device Research Center, Korea Photonics Technology Institute
- WP1-70** **11:40-13:00** **Multilayer-Graphene/ITO 투명전극을 적용한 GaN 계 발광다이오드의 특성분석에 관한 연구**
김태경, 이동규, 박현정, 오승규, 곽준섭
순천대학교 인쇄전자공학과
- WP1-71** **11:40-13:00** **Methylammonium Lead Iodide Perovskite-Graphene Hybrid Channels in Flexible Broadband Phototransistors**
Vinh Quang Dang, Gill-Sang Han, Tran Quang Trung, Le Thai Duy, Young-Un Jin, Byeong-Ung Hwang, Hyun-Suk Jung, and Nae-Eung Lee
School of Advanced Materials Science and Engineering, Sungkyunkwan University
- WP1-72** **11:40-13:00** **Effect of Gate Recess Damage to Transconductance and Mobility of AlGaIn/GaN HEMTs**
Gwang-Ho Choi¹, Myoung-Jin Kang¹, Ho-Young Cha², and Kwang-Seok Seo¹
¹Department of Electrical and Computer Engineering and Inter-University Semiconductor Research Center, Seoul National University, ²Department of Electronic and Electrical Engineering, Hongik University
- WP1-73** **11:40-13:00** **The Formation of GaAs Solar Cells Array on Si Substrate Realized by Metal-assisted Wafer Bonding and Epitaxial Lift-off**
Dae-Myeong Geum^{1,2}, Min-Su Park², Chang Zoo Kim³, Sang Hyeon Kim², Won Jun Choi², and Euijoon Yoon¹
¹Department of Materials Science and Engineering, Seoul National University, ² Center for Opto-Electronic Materials and Devices, Korea Institute of Science and Technology, ³Korea Advanced Nano Fab Center
- WP1-74** **11:40-13:00** **Electrical Biomolecular Detection with Silicon Nanomesh via Block Copolymer Nanolithography**
Hyeong Min Jin, Ju Young Kim, Jeong Ho Mun, Seung Keun Cha, Jea Eun Lee, Jun Soo Kim, Sang Ouk Kim
Department of Materials Science and Engineering, KAIST

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- WP1-75** **11:40-13:00** **Influence of O₃ treatment on carrier density of two-dimensional electron gas at a-Al₂O₃/SrTiO₃ interface**
Taehwan Moon¹, Hae Jun Jung², Min Hyuk Park¹, Yu Jin Kim¹, Han Joon Kim¹, Keum Do Kim¹, Young Hwan Lee¹, Seung Dam Hyun¹, Sang Woon Lee², and Cheol Seong Hwang¹
¹*Department of Materials Science and Engineering and Inter-university Semiconductor Research Center, Seoul National University,*
²*Department of Physics and Division of Energy Systems Research, Ajou University*
- WP1-77** **11:40-13:00** **Percolating Behavior in Rrganic Nanocomposite Resistive Memory via Noise Scaling Analysis**
Younggul Song¹, Hyunhak Jeong¹, Jingon Jang¹, Tae-Young Kim¹, Daekyoung Yoo¹, Youngrok Kim¹, Heejun Jeong², and Takhee Lee¹
¹*Department of Physics and Astronomy, Seoul National University,*
²*Department of Applied Physics, Hanyang University*
- WP1-78** **11:40-13:00** **A Block Copolymer with a Huge Block-to-Block Interaction for the Significant Reduction of Line-Edge Fluctuations in Self-Assembled Patterns**
Jong Min Kim, Yoon Hyung Hur, and Yeon Sik Jung
Department of Material Science and Engineering, KAIST
- WP1-79** **11:40-13:00** **Asymmetric Modulation of Electronic Transport Characteristics in the Pentacene Vertical Transistors with Graphene Electrodes**
Wang-Taek Hwang, Hyunhak Jeong, Dongku Kim, Yeonsik Jang, Jun-Woo Kim, and Takhee Lee
Department of Physics and Astronomy, Seoul National University
- WP1-80** **11:40-13:00** **Flexible One Diode-One Phase Change Memory Array Enabled by Block Copolymer Self-Assembly on Plastic Substrates**
Beom Ho Mun, Byoung Kuk You, Se Ryeun Yang, Hyeon Gyun Yoo, Tae Jin Kim, Myunghwan Byun, Yeon Sik Jung, and Keon Jae Lee
Department of Materials Science and Engineering, KAIST
- WP1-81** **11:40-13:00** **Titania Nanosheet with Atomic Thickness Coupled into Graphene as 2D Heterostructures for Enhanced Photocatalytic Activity and Fast Lithium Storage**
Dongjun Li and Sang Ouk Kim
National Creative Research Initiative Center for Multi-Dimensional Directed Nanoscale Assembly Department of Materials Science and Engineering, KAIST
- WP1-82** **11:40-13:00** **Extraction of Schottky Barrier Parameters for Pd/WSe₂/Au Vertical Diode**
Won-Mook Kang, In-Tak Cho, and Jong-Ho Lee
Department of Electrical and Computer Engineering, Seoul National University

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- WP1-83** **11:40-13:00** **Novel Synthesis of PANI-CNT Nanocomposites via N-Doped Sites of Carbon Nanotubes**
Hojin Lee, Atta UI Haq, Joonwon Lim, and Sang Ouk Kim
Department of Material Science and Engineering, KAIST
- WP1-84** **11:40-13:00** **Block Copolymer Lithography Integrated with Inorganic Spacer layer for Sub-10 Nanometer Pattern**
Jun Soo Kim¹, Hyung-Seok Moon², and Sang Ouk Kim¹
¹*Department of Materials Science and Engineering, KAIST,* ²*Korea Institute of Industrial Technology*
- WP1-85** **11:40-13:00** **CVD-Synthesized Monolayer Large-Area MoS₂ Field Effect Transistors with Ink-Jet Printed Source and Drain Contacts**
Tae-Young Kim¹, Seungjun Chung², and Takhee Lee¹
¹*Department of Physics and Astronomy, Seoul National University,* ²*Department of Electrical Engineering and Computer Sciences, University of California, USA*
- WP1-86** **11:40-13:00** **Various Metal Nano-Patterning by Solvent-Annealed Block Copolymer**
Changyun Moon, Jeong Ho Mun, and Sang Ouk Kim
Department of Materials Science and Engineering, KAIST
- WP1-88** **11:40-13:00** **Performance Enhancement in Organic Solar Cells with Gold Nanoparticle Clusters**
Hyung Il Park¹, Seunghoon Lee², Sang Woo Han², and Sang Ouk Kim¹
¹*Department of Materials Science and Engineering, KAIST,* ²*Department of Chemistry and KI for the NanoCentury, KAIST*
- WP1-89** **11:40-13:00** **Liquid Crystal Behavior Induced Large Graphene Oxide in Polydimethylsiloxane Matrix**
Sung Hwan Koo, Kyung Eun Lee, and Sang Ouk Kim
Department of Materials Science and Engineering, KAIST
- WP1-90** **11:40-13:00** **Fermi Level Pinning Between 2D TMDCs and Metal Contact**
김창식¹, 문인용¹, 남승걸², 조연주², 신현진², 박성준², 유원종¹
¹*Samsung-SKKU Graphene Center (SSGC), SKKU Advanced Institute of Nano-Technology (SAINT), Sungkyunkwan University,* ²*Device and System Research Center, Samsung Advanced Institute of Technology*
- WP1-91** **11:40-13:00** **Three-Dimensional, Porous Reduced Graphene Oxide Hydrogel via Unique Interfacial Gelation Principle**
Joonwon Lim, Uday Narayan Maiti, and Sang Ouk Kim
Department of Materials Science and Engineering, KAIST
- WP1-92** **11:40-13:00** **3D Reduced Graphene Oxide Aerogels with High Electrical Conductivity**
In Kyu Moon¹, Seonno Yoon², Kyung Hwan Kim², and Jungwoo Oh²
¹*Yonsei Institute of Convergence Technology, Yonsei University,* ²*School of Integrated Technology and Yonsei Institute of Convergence*

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- Technology, Yonsei University*
- WP1-93** **11:40-13:00** **Fe-Porphyrin Like Carbon Nanotube for Oxygen Reduction Catalysis**
Gil Yong Lee and Sang Ouk Kim
Department of Materials Science and Engineering, KAIST
- WP1-94** **11:40-13:00** **Visible Light Photocatalytic Properties of N-Doped CNT/TiO₂ Nanowires**
Dong Sung Choi and Sang Ouk Kim
Department of Materials Science and Engineering, KAIST
- WP1-95** **11:40-13:00** **Hydrogen Gas Sensor Fabricated by Palladium Decorated Graphene Mesh**
Su Han Kim, Jae Hyung Lee, and Won Il Park
Division of Materials Science Engineering, Hanyang University
- WP1-96** **11:40-13:00** **Interfacial Fast Self-Assembly of Graphene Film on Liquid-Air Interface**
Taeyeong Yun, Jongwon Shim, and Sang Ouk Kim
Department of Material Science, KAIST
- WP1-97** **11:40-13:00** **Anchoring of Cobalt Oxide Nanoparticles on TiO₂ Nanorod/FTO as a Photoanode for Solar Hydrogen Evolution**
Vivek Ramakrishnan, Kim Hyun, and Beelyong Yang
School of Advanced Materials and System Engineering, Kumoh National Institute of Technology
- WP1-98** **11:40-13:00** **Growth mechanism and Characterization of Hexagonal Boron Nitride**
Sung Kyu Jang, Jiyoun Youn, Young Jae Song, and Sungjoo Lee
SKKU Advanced Institute of Nano Technology(SAINT), Sungkyunkwan University
- WP1-99** **11:40-13:00** **Size Separation of Graphene Oxide and Selective Heteroatom Doping for Catalysis**
Kyung Eun Lee and Sang Ouk Kim
Department of Materials Science and Technology, KAIST
- WP1-100** **11:40-13:00** **Schottky Barrier Height Modulation of Ferroelectric Polymer Gated Graphene/ZnO:N Barristor using Electrostatic Force Microscopy**
서광하, 황현준, 양진호, 유지애, 이병훈
School of Material Science and Engineering, Gwangju Institute of Science and Technology
- WP1-101** **11:40-13:00** **고압수소열처리 조건에 따른 그래핀 전계효과소자의 특성 최적화**
김윤지, 김소영, 정육진, 박우진, 이상경, 이병훈
School of Materials Science and Engineering, Gwangju Institute of Science and Technology
- WP1-102** **11:40-13:00** **Transparent Polymer Semiconductor for Fully Transparent and**

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- Flexible Non-Volatile Ferroelectric Polymer Memory**
Kang Lib Kim, Taehyun Park, and Cheolmin Park
Department of Materials Science and Engineering, Yonsei University
- WP1-103 11:40-13:00 Multilevel Resistive Switching Memory based on Two-Dimensional Nanomaterials**
Gwang Hyuk Shin, Byung Chul Jang, Myung Hun Woo, and Sung-Yool Choi
School of Electrical Engineering, KAIST
- WP1-104 11:40-13:00 Highly bright Alternating Current Driven Polymer Electroluminescence Device using Field-Induced Hole Generation Layer**
Ju Han Lee, Eui Hyuk Kim, and Cheolmin Park
Department of Materials Science and Engineering, Yonsei University
- WP1-105 11:40-13:00 Fabrication and Analysis of Black Phosphorus-based Field-Effect Transistor**
Woo-Young Choi and Jin-Hong Park
School of Electronics and Electrical Engineering, Sungkyunkwan University
- WP1-106 11:40-13:00 Composite Transparent Conductive Thin Film using ZnO and Cu Nanowires**
Chansu Moon, Wonki Cho, and Seung Jae Baik
Department of Electrical, Electronic, and Control Engineering, Hankyong National University
- WP1-107 11:40-13:00 Morphology Evolution in P3HT and its Impact on Thin Film Transistor Characteristics**
Yongho Cho, Wonki Cho, Gwihyun Kim, and Seung Jae Baik
Department of Electrical, Electronic, and Control Engineering, Hankyong National University
- WP1-109 11:40-13:00 Transition Metal Dichalcogenide (TMD)-based High Performance Photodetector with Organolead Trihalide Perovskite (MAPbX₃)**
Se-Yong Oh, Dong-Ho Kang, and Jin-Hong Park
School of Electronics and Electrical Engineering, Sungkyunkwan University
- WP1-110 11:40-13:00 Metal Nanoparticle Embedded Floating Gate Memory based on MoS₂ with Polymer Tunneling Dielectric Layer**
Myung Hun Woo¹, Byung Chul Jang¹, Junhwan Choi², Gwang Hyuk Shin¹, Hyejeong Seong², Sung Gap Im², and Sung-Yool Choi¹
¹*School of Electrical Engineering, Graphene Research Center, KAIST,*
²*Department of Chemical and Biomolecular Engineering and KI for NanoCentury, KAIST*
- WP1-111 11:40-13:00 Highly Uniform, Low Power Polymer Memory via Interface Engineering using Multilayer Graphene Barrier Electrode**
Byung Chul Jang¹, Hyejeong Seong², Jong Yun Kim¹, Beom Jun Koo¹,

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Sung Kyu Kim³, Sang Yoon Yang¹, Sung Gap Im², and Sung-Yool Choi¹

¹ School of Electrical Engineering, Graphene Research Center, KAIST, ² Department of Chemical and Biomolecular Engineering, Graphene Research Center, KAIST, ³ Department of Materials Science and Engineering, KAIST

- WP1-112 11:40-13:00 Development of Flexible Wire Grid Polarizer Realized by Nanoscale Polymeric Thin Film Replication**
Jung Hye Lee and Yeon Sik Jung
Department of Materials and Science, KAIST
- WP1-113 11:40-13:00 Solution Processed Self-Assembled Growth of Transition Metal Dichalcogenide Wires and their Electrical Properties**
Seoung-Ki Lee, Jae-Bok Lee, Jyoti Singh, Kuldeep Rana, and Jong-Hyun Ahn
Department of Electrical and Electronic Engineering, Yonsei University
- WP1-114 11:40-13:00 Highly Conformal Graphene Devices and their Performance on Irregular Structure for Wearable Electronics**
Yong Ju Park, Seoung-Ki Lee, Jong-Hyun Ahn
School of Electrical and Electronic Engineering, Yonsei University
- WP1-116 11:40-13:00 PVDF-TrFE의 압전 특성을 이용한 그래핀 Barristor 응용 압전소자**
양진호, 유원범, 심창후, 장경은, 이병훈
School of Material Science and Engineering, Gwangju Institute of Science and Technology
- WP1-117 11:40-13:00 Scalable Growth of Single-Crystal Graphene on Poly-Crystalline Platinum**
Hyeon-Sik Jang¹, Jae-Young Lim², Seong-Soo Lee², Mansu Kim¹, Wonseok Jang¹, and Dongmok Whang^{1,2}
¹School of Advanced Materials Science and Engineering, Sungkyunkwan University, ²SKKU Advanced Institute of Nanotechnology, Sungkyunkwan University
- WP1-118 11:40-13:00 N-Doped Graphene Oxide/Graphene Bilayer for Transparent Conducting Electrodes**
Young-Min Seo¹, Yamujin Jang¹, Seh-Yoon Lim¹, Junyi Wang¹, Hye-Jin Cho¹, and Dongmok Whang^{1,2}
¹School of Advanced Materials Science and Engineering, Sungkyunkwan University, ²SKKU Advanced Institute of Nanotechnology, Sungkyunkwan University
- WP1-119 11:40-13:00 Phonon Transport Suppression of SiGe Alloy Nanowires by Thermally Oxidation**
Su-Ho Jung¹, Jong Woon Lee¹, Eun Kyung Lee², Byoung Lyong Choi³, and Dongmok Whang⁴
¹SKKU Advanced Institute of Nanotechnology, Sungkyunkwan University, ²Samsung Advanced Institute of Technology, Computer Aided Engineering Group, Samsung Electronics Co., Ltd., ³ Samsung

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Advanced Institute of Technology, Nano Electronics Lab, Samsung Electronics Co., Ltd., ⁴School of Advanced Materials Science and Engineering, Sungkyunkwan University

- WP1-120 11:40-13:00 Crystallization of CH₃NH₃PbI₃ Perovskite Semiconductor under Humidified Air and its Effect on Photovoltaic Performance**
Beomjin Jeong and Cheolmin Park
Department of Materials Science and Engineering, Yonsei University
- WP1-121 11:40-13:00 Surface Enhanced Raman Scattering on Pt Nanostructures Fabricated by using Self-Aligned Block Copolymer Processing**
Jongsik Oh¹, Ji Soo Oh¹, Dain Sung¹, Jaehee Shin¹, Kyongnam Kim¹, and Geunyoung Yeom^{1,2}
¹Department of Advanced Materials Science and Engineering, Sungkyunkwan University, ²SKKU Advanced Institute of Nano Technology (SAINT), Sungkyunkwan University
- WP1-122 11:40-13:00 Ultraviolet- Assisted Chemical Vapor Deposition of ZnO for Controlled Morphology and Low Temperature Fabrication of Nanostructures**
Bo Soek Kim¹, Hyun Soo Jo¹, and Seung Jae Baik¹
¹Department of Electrical, Electronic and Control Engineering, Hankyong National University
- WP1-123 11:40-13:00 Block Copolymer Hardening Process through Plasma Treatment**
Dain Sung¹, Jongsik Oh¹, Jaehee Shin¹, Kyongnam Kim¹, and Geunyoung Yeom^{1,2}
¹Department of Advanced Materials Science and Engineering, Sungkyunkwan University, ²SKKU Advanced Institute of Nano Technology (SAINT), Sungkyunkwan University
- WP1-124 11:40-13:00 Effective Optical Properties of Multi Pitch Patterned Y₂O₃:Eu³⁺ Thin-Film Phosphors**
Hyojun Kim¹, In Sung Park¹, Ki-Young Ko², and Jinho Ahn¹
¹Department of Materials Science and Engineering, Hanyang University, ²Korea Invention Promotion Association
- WP1-125 11:40-13:00 그래핀/금속 산화물 이종접합 트랜지스터의 이론적 전류 분석 모델**
Jeonghoon Kim and Jin-Hong Park
School of Electronics and Electrical Engineering, Sungkyunkwan University
- WP1-126 11:40-13:00 Fabrication and Characteristics of rGO/Fe₃O₄ Hollow Structure based on Layer-by-Layer Assembly**
Byeong Seok Lim, Bong Kyun Kang, and Dae Ho Yoon
School of Advanced Materials Science and Engineering, Sungkyunkwan University
- WP1-127 11:40-13:00 Synthesis and Characteristics of Spinel NiCo₂O₄ Nanocube via Decomposition of Coordination Polymer with Core-Shell Structure**
Sung Ryul Mang¹, Bong Kyun Kang², Moo Hyun Woo², and Dae Ho

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Yoon^{1,2}

¹SKKU Advanced Institute of Nanotechnology (SAINT), Sungkyunkwan University, ²Department of Advanced Material Science and Engineering, Sungkyunkwan University

- WP1-128 11:40-13:00 Controlling the Shape and Size of Self-Assembled Prussian Blue Analogue(PBA) Ni₃[Co(CN)₆]₂ Nanocubes**
Moo Hyun Woo¹, Bong Kyun Kang¹, Sungryul Mang², and Dae Ho Yoon^{1,2}
¹Department of Advanced Material Science and Engineering, Sungkyunkwan University, ²Sungkyunkwan Advanced Institute of Nanotechnology (SAINT), Sungkyunkwan University
- WP1-129 11:40-13:00 Encapsulation Technique of Transition Metal Dichalcogenides (TMDs) Applications with Self-Assembled Monolayer (SAM) Doping**
Hyeong-Jun Kim and Jin-Hong Park
School of electrical and electronic engineering, Sungkyunkwan University
- WP1-130 11:40-13:00 Defect-Mediated Irreversible Response of Graphene-based pH Sensors**
Sun Sang Kwon, Jae Hyeok Shin, Fan Xia, and Won Il Park
Division of Materials Science Engineering, Hanyang University
- WP1-131 11:40-13:00 Characteristics of Organic/Inorganic Nanocomposite Gate Insulators with Self Assembled Layer of Nanoparticles for Organic Thin Film Transistors**
J. S. Kim¹, J. H. Kim², D. I. Kim², and N.-E. Lee^{1,2,3}
¹SKKU Advanced Institute of Nanotechnology(SAINT), Sungkyunkwan University, ²Department of Advanced Materials Science and Engineering, Sungkyunkwan University, ³Samsung Advanced Institute for Health Sciences and Technology(SAIHST), Sungkyunkwan University
- WP1-132 11:40-13:00 Stretchable Layers on Mogul-Patterned Elastomeric Substrate**
Han-Byeol Lee¹, Chan-Wool Bae¹, Le Thai Duy¹, Il-Yung Sohn¹, Do-Il Kim¹, and Nae-Eung Lee^{1,2,3}
¹School of Advanced Materials Science and Engineering, Sungkyunkwan University, ²SKKU Advanced Institute of Nanotechnology (SAINT), Sungkyunkwan University, ³Samsung Advanced Institute for Health Sciences and Technology (SAIHST), Sungkyunkwan University
- WP1-133 11:40-13:00 Bidirectional Threshold Switching in Ag:Cu₂O-based Multilayer Stack for Cross-Point Selector Application**
Jeonghwan Song, Amit Prakash, Jiyong Woo, Euijun Cha, Sangheon Lee, and Hyunsang Hwang
Department of Materials Science and Engineering, Pohang University of Science and Technology

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- WP1-134 11:40-13:00 Demonstration of Bi-Directional Selector in 8 inch Wafer Process with Fully CMOS Compatibility for ReRAM Cross-Point Array**
Sangheon Lee, Jeonghwan Song, Jiyong Woo, Changhyuk Sung, and Hyunsang Hwang
Department of Materials Science and Engineering, Pohang University of Science and Technology
- WP1-135 11:40-13:00 A Sensing Scheme of STT-MRAM with Cancellation Threshold Voltage Mismatch**
Il-Young Im, Dong-Gi Lee, Ji-su Lee, Saemin Im, and Sang-Gyu Park
Department of Electronic and Computer Engineering, Hanyang University
- WP1-136 11:40-13:00 Phase Change Memory Devices based on Gr-In₂Se₃ Heterostructure**
Min Sup Choi, Chenxi Yang, Chang Ho Ra, and Won Jong Yoo
SKKU Advanced Institute of Nano-Technology, Sungkyunkwan University
- WP1-137 11:40-13:00 Thickness Effect of Ultra-Thin Ta₂O₅ Resistance Switching Layer in 28 nm-Diameter Memory Cell**
Tae Hyung Park¹, Seul Ji Song¹, Hae Jin Kim¹, Soo Gil Kim², Suock Chung², Beom Yong Kim², Kee Jeung Lee², Kyung Min Kim³, Byung Joon Choi⁴, and Cheol Seong Hwang¹
¹*Department of Materials Science and Engineering and Inter-university Semiconductor Research Center, Seoul National University,* ²*SK hynix Inc.,*
³*Hewlett-Packard Laboratories, Hewlett-Packard Company, USA,*
⁴*Department of Materials Science and Engineering, Seoul National University of Science and Technology*
- WP1-138 11:40-13:00 Resistance Controllability and Variability Improvement in a TaO_x-based Resistive Memory for Multilevel Storage Application**
A. Prakash¹, D. Deleruyelle², J. Song¹, and H. Hwang¹
¹*Department of Materials Science and Engineering, Pohang University of Science and Technology,* ²*Im2np, UMR CNRS 7334, Aix-Marseille Université, France*
- WP1-139 11:40-13:00 Characterization of Switching Voltage Dependent Crystallization Time from Various Tuned Amorphous State in Ge₂Sb₂Te₅ Phase Change Memory**
Jun Hyeok Sun, Sanghyeon Lee, and Seung Jae Baik
Department of Electrical, Electronic and Control Engineering, Hankyong National University
- WP1-140 11:40-13:00 Analysis of Read Condition in 1S1R ReRAM Array**
Wen-Liang Ma, Hyunsuk Kang, and Kee-Won Kwon
College of Information and Communication Engineering, Sungkyunkwan University
- WP1-141 11:40-13:00 3x3 멤리스터 시냅스 어레이의 학습을 위한 뉴런 회로의 구현 및**

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검증

양원선, Son Ngoc Truong, Khoa Van Pham, 송재상, 모현선, 민경식
국민대학교 전자공학부

- WP1-142 11:40-13:00 Relation between Resistance and Capacitance in Atomically Dispersed Pt-SiO₂ Thin Films for Multilevel Resistance Switching Memory**
Yoo Rim Kwon, Dong Ha Kim, and Byung Joon Choi
Department of Materials Science and Engineering, Seoul National University of Science and Technology
- WP1-143 11:40-13:00 Influence of Forming Gas Annealing to Pt/HfO₂/Pt Resistors on Resistive Switching Characteristics**
Yong Chan Jung, Sejong Seong, Taehoon Lee, In-Sung Park, and Jinho Ahn
Department of Materials Science and Engineering, Hanyang University
- WP1-144 11:40-13:00 The Resistive Switching Characteristics of Transparent Al/ZnO/ITO/PET Resistor with IPL Treatment**
Taehoon Lee, Yong Chan Jung, Sejong Seong, In-Sung Park, and Jinho Ahn
Department of Materials Science and Engineering, Hanyang University
- WP1-145 11:40-13:00 Effect of Ge Concentration in Ge-As-Te Chalcogenide Glass on the Characteristics of Ovonic Threshold Switching (OTS) Devices**
Taeho Kim, Youngjae Kim, and Hyunchul Sohn
Department of Materials Science and Engineering, Yonsei University
- WP1-146 11:40-13:00 The Reliability and AC Characteristics of Ovonic Threshold Switching Selector based on Chalcogenide ZnTe**
Youngjae Kim, Taeho Kim, Jimin Lee, Daewoo Kim, and Hyunchul Sohn
Department of Materials Science and engineering, Yonsei University
- WP1-147 11:40-13:00 Memory System Architecture using Hardware-based Page Replacement**
Hanjae Lee, Hyeokjun Seo, and Eui-Young Chung
School of Electrical and Electronic Engineering, Yonsei University
- WP1-148 11:40-13:00 Install-time Binary Translation for Reconfigurable Accelerators**
Hongsik Lee, Toan X. Mai, Sangyun Oh, and Jongeun Lee
Department of Computer Science Ulsan National Institute of Science and Technology
- WP1-149 11:40-13:00 오픈 소스 FPGA 검증 툴 기반 Embedded FPGA의 설계 및 프로그래밍**
백승헌, 김재하
서울대학교 전기정보공학부
- WP1-150 11:40-13:00 Test Structure for Measurement of Unit Cell Delay and Delay Mismatch using Modified Ring Oscillator**
신연중, 호민혜, 김영현, 정다래, 오길근, 이준협, 김형태, 이윤우, 김요정

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Samsung Electronics Co., Ltd.

- WP1-151 11:40-13:00** 고성능 리튬 이온 이차전지의 음극 적용을 위한 Co_3O_4 /그래핀 나노복합체의 ex-situ 합성
장경훈, 장재원, 기한길, 오병윤, 함문호
School of Materials Science and Engineering, Gwangju Institute of Science and Technology
- WP1-152 11:40-13:00** Effects of Triple Layer Reflector on Performances of Amorphous Silicon Oxide Thin Film Solar Cells
Jun-Young Jeon¹, Tae-Jun Ha¹, and Dong-Won Kang²
¹Department of Electronic Materials Engineering, Kwangwoon University, ²Department of Solar and Energy Engineering, Cheongju University
- WP1-153 11:40-13:00** Enhancing Organic Solar Cells with Gold Nanoparticle-Carbon Nanotube Hybrid Nanocomposite
Taewoo Jeon, Ju Min Lee, Joonwon Lim, Hyung Il Park, Kyung Eun Lee, and Sang Ouk Kim
Department of Material Science and Engineering, KAIST
- WP1-154 11:40-13:00** 2차원 실리콘 소자에서 도핑과 채널 크기에 따른 Seebeck Effect
조관현¹, 김동현¹, 김수현¹, 오주승¹, 장호균³, 김규태³, 박종혁², 이재우¹
¹ICT Convergence Technology for Health and Safety and Department of Electronics and Information Engineering, Korea University, ²Electronics and Information Engineering, Korea University, ³School of Electrical Engineering, Korea University
- WP1-155 11:40-13:00** Enhanced Optical Pumping of InAs/GaAs Quantum Dot Solar Cell using Distributed Bragg Reflector
HoSung Kim^{1,2}, MinSu Park¹, SangHyeon Kim¹, JinDong Song¹, SangHyuck Kim¹, WonJun Choi¹, and JungHo Park²
¹Center for Opto-Electronic Materials and Devices Research, Korea Institute Science and Technology, ²School of Electrical Engineering, Korea University
- WP1-156 11:40-13:00** ASA Simulation Software를 이용한 태양전지 광 산란 효과 분석
Dongjoo Shin
Department of Electric and Electronic Engineering, Sungkyunkwan University
- WP1-157 11:40-13:00** 고효율 결정질 태양전지를 위한 패시베이션의 특성에 관한 연구
이재홍, 이준신
성균관대학교 정보통신공학부
- WP1-158 11:40-13:00** Nano-Structured Ge Solar Cells Fabricated by Metal-Assisted Chemical Etching
Sunhong Jung, Youngjo Kim, Kangho Kim, and Jaejin Lee
Department of Electrical and computer Engineering, Ajou University
- WP1-159 11:40-13:00** 태양전지 Emitter층의 Doping Profile Model에 관한 연구

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김중휘, 이준신
성균관대학교 정보통신대학 전자전기공학부

- WP1-160 11:40-13:00 ASA Simulation Software를 이용한 Multi-Band Single Junction cell 개발**
최병렬
성균관대학교
- WP1-161 11:40-13:00 얇은 AlGaIn 배리어를 이용한 AlGaIn/GaN MOSHFETs 소자의 비휘발성 메모리 효과에 관한 연구**
금동민, 조강호, 조근호, 조희형, 김형탁
Department of Electronics and Electrical Engineering, Hongik University
- WP1-162 11:40-13:00 마찰 대전소자에서의 SnO₂ 반도체 마찰층의 두께 효과에 관한 연구**
No Ho Lee, Dong Ha Kim, Min Soo Kim, and Byung Joon Choi
Department of Materials Science and Engineering, Seoul National University of Science and Technology
- WP1-163 11:40-13:00 Factors Affecting Voltage of Organic Electrode Materials in Lithium/Sodium Rechargeable Batteries**
Sechan Lee, Jihyun Hong, Ji Eon Kwon, Soo Young Park, and Kisuk Kang
Department of materials science and engineering, Seoul National University
- WP1-164 11:40-13:00 Nanocomposite based Flexible Thin Film Piezoelectric Nanogenerator for Energy Harvesting and Storage**
Saqib Siddiqui¹ and Nae-Eung Lee^{1,2,3}
¹*School of Advanced Materials Science and Engineering, Sungkyunkwan University,* ²*SKKU Advanced Institute of Nanotechnology (SAINT), Sungkyunkwan University,* ³*Samsung Advanced Institute for Health Sciences and Technology, Sungkyunkwan University*
- WP1-165 11:40-13:00 Synthesis of Co-Ni(OH)₂/Reduced Graphene Oxide Composites for Supercapacitors: Effect of Crystallinity on Capacitance**
Sintayehu Nibret Tiruneh, Bong Kyun Kang, Quang Tran Ngoc, and Dae Ho Yoon
Department of Advanced Material Science and Engineering, Sungkyunkwan University
- WP1-166 11:40-13:00 Phosphorus Diffusion Layer Profile Modification by Surface Concentration and Junction Depth using Diffusion Processing Sequence Optimization**
Gyeongbae Shim¹, Cheolmin Park², Minhan Jeon¹, Jiyeon Kang¹, Donghyun Oh³, and Junsin Yi¹
¹*School of Information and Communication Engineering, Sungkyunkwan University,* ²*Department of Energy Science,*

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*Sungkyunkwan University, ³Department of Energy System,
Sungkyunkwan University*

- WP1-167 11:40-13:00** **Optimized Boron Diffused Layer by Oxygen Treatment and Change of Nitrogen/Oxygen Duration Time in Diffusion Process for n-type c-Si Solar Cell Applications**
Gyeongbae Shim¹, Cheolmin Park², Minhan Jeon¹, Jiyeon Kang¹, Donghyun Oh³, and Junsin Yi¹
¹School of Information and Communication Engineering, Sungkyunkwan University, ²Department of Energy Science, Sungkyunkwan University, ³Department of Energy System, Sungkyunkwan University
- WP1-168 11:40-13:00** **Gate Leakage Current Reduction in Normally Off AlGaIn/GaN Gate Recessed MISHEMT by Work-Function Tuning**
Il-Hwan Hwang and Kwang-Seok Seo
Electrical Engineering and Computer Science, Seoul National University
- WP1-169 11:40-13:00** **Ge₂Sb₂Te₅ Based Nano Scale Phase Change Memory for the Power Reduction**
Soo-Jung Kim¹, Jung-Hye Lee², Sung-Hoon Hong³, Yeon-Sik Jung², and Heon Lee¹
¹Department of Materials Science and Engineering, Korea University, ²Department of Materials Science and Engineering, Korea Advanced Institute of Science and Technology