

M. RF Design 분과

Room A
창의관 (106)

일 시 : 2월 16일(목) 09:30-11:00

세션명 : [TA1-M] Si-Based mm-Wave and Optoelectronic Circuits

좌 장 : 왕성호(RadioPulse), 이재성(고려대학교)

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| TA1-M-1 | 09:30-10:00 | [Invited] A BiCMOS T/R Module for Phased Array Applications
저자: Byung-Wook Min
소속: School of Electrical and Electronic Engineering, Yonsei University |
| TA1-M-2 | 10:00-10:30 | [Invited] Phased-array Transceiver Chipsets for 60-GHz Communications
저자: Dong Gun Kam
소속: Department of Electronics Engineering, Ajou University |
| TA1-M-3 | 10:30-10:45 | 애벌런치 광 검출기를 사용한 10 Gb/s CMOS 집적 광 수신기
저자: 윤진성, 이명재, 박강엽, 최우영
소속: 연세대학교 전기전자공학과 |
| TA1-M-4 | 10:45-11:00 | 60GHz 광섬유-무선 다운링크를 위한 SiGe BiCMOS 집적화된 광-밀리미터파 변환기
저자: 고민수, 이정민, 윤진성, 이명재, 최우영
소속: 연세대학교 전기전자공학과 |

P. Device for Energy 분과

Room B

창의관 (110)

일 시 : 2월 16일(목) 09:30-11:00

세션명 : [TB1-P] Photovoltaics

좌 장 : 명재민(연세대학교), 인수강(삼성전자)

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- TB1-P-1 09:30-10:00 **[Invited]** Novel Interdigitated Front Contact Architecture to Overcome the Theoretical Efficiency Limit of Crystalline Si Solar Cells
저자: Yun Gi Kim and Hyuk Chang
소속: Energy Lab, Samsung Advanced Institute of Technology, Samsung Electronics Co., Ltd.
- TB1-P-2 10:00-10:15 **Nanoscale Photovoltaics in Small Band Gap Oxides**
저자: Won-Mo Lee, Ji Ho Sung, Kanghyun Chu, Young-Jun Cho, Cheol-Joo Kim, C.-H. Yang, and Moon-Ho Jo
소속: Department of Materials Science and Engineering, Pohang University of Science and Technology
- TB1-P-3 10:15-10:30 **Development of Light Induced Degradation Free Nano Crystal Embedded Amorphous Silicon Thin Film by Neutral Beam Assisted CVD Process at Room Temperature**
저자: Jin Nyoung Jang¹, Dong Hyeok Lee¹, Hyun Wook So¹, Suk Jae Yoo², Bonju Lee², and MunPyo Hong¹
소속: ¹Deptment of Display and Semiconductor Physics, Korea University, ²National Fusion Research Institute
- TB1-P-4 10:30-10:45 **MgO Coated TiO₂ Binding with (CdSe)ZnS Quantum Dot for High Efficiency Solar Cells**
저자: M.-H. Jung¹, M. G. Kang¹, and Moo-Jung Chu²
소속: ¹Thin Film Solar Cell Technology Research Team, Electronics and Telecommunications Research Institute, ²Package Research Team, Advanced Solar Technology Research Department, Convergence Components and Materials Research Laboratory, Electronics and Telecommunications Research Institute

- TB1-P-5 10:45-11:00 마이크로 블라스터와 RIE 공정을 이용한 태양전지용 재생 웨이퍼 제작
저자: 전성찬¹, 오정화¹, 정동건¹, 공대영¹, 조찬섭², 김봉환³, 이종현¹
소속: ¹경북대학교 전자전기컴퓨터학부,
 ²경북대학교 산업전자전기공학부,
 ³대구카톨릭대학교 전자공학과

L. Analog Design 분과

Room C
창의관 (116)

일 시 : 2월 16일(목) 09:30-11:00

세션명 : [TC1-L] Analog-to-Digital Converter

좌 장 : 송민규(동국대학교), 문 용(숭실대학교)

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| TC1-L-1 | 09:30-10:00 | [Invited] 45nm CMOS 공정기술에 최적화된 회로설계기반의 12비트 100MS/s 0.43mm ² 저전력 파이프라인 ADC
저자: 황동현, 구병우, 안태지, 박준상, 이승훈
소속: 서강대학교 전자공학과 |
| TC1-L-2 | 10:00-10:15 | A 6-bit 1.25 GS/s Subranging ADC with Self-calibration
저자: Bong Chan Kim, Yi-Gyeong Kim, Min-Hyung Cho, Tae Moon Roh, and Jong-Kee Kwon
소속: Electronics and Telecommunications Research Institute |
| TC1-L-3 | 10:15-10:30 | Two-step Single-slope ADC를 이용한 고속 CMOS 이미지센서의 설계
저자: 김경태, 김대운, 송민규
소속: 동국대학교 반도체 학과 |
| TC1-L-4 | 10:30-10:45 | 100MHz-1.6GHz Wide Lock Range를 위한 Fully Self-biased Phase Locked Loop
저자: 심종주, 김용주, 김재현, 최준기, 강종호
소속: Hynix Semiconductor Inc., 선행설계팀 |
| TC1-L-5 | 10:45-11:00 | A MPPT Control for Energy Harvesting with Adaptive DC-DC Conversion
저자: 허세완, 양일석, 이상균, 권종기, 김종대
소속: 한국전자통신연구원 |

H. Display and Imaging Technologies 분과

Room D

창의관 (117)

일 시 : 2월 16일(목) 09:30-11:00

세션명 : [TD1-H] Organic TFT

좌 장 : 홍문표(고려대학교)

TD1-H-1 09:30-10:00 **[Invited]** Low Temperature Fabricated Solution-processed Transistors and Circuits for Flexible Electronics

저자: Sung Kyu Park

소속: School of Electrical and Electronics Engineering, College of Engineering, Chung-Ang University

TD1-H-2 10:00-10:30 **[Invited]** Polymer-coupled Oxide Dielectrics for Multipurpose Organic Electronic Applications

저자: M. Jang and H. Yang

소속: Department of Advanced Fiber Engineering, Inha University

TD1-H-3 10:30-10:45 Characterization of Density-of-states in Polymer-based Organic Thin Film Transistors and Implementation into TCAD Simulator

저자: Jaehyeong Kim, Jaeman Jang, Minkyung Bae, Woojoon Kim, Inseok Hur, Yongsik Kim, Hyunkwang Jeong, Dongsik Kong, Jaewook Lee, Yun Hyeok Kim, Sungwoo Jun, Choon Hyeong Jo, Dong Myong Kim, and Dae Hwan Kim

소속: School of Electrical Engineering, Kookmin University

TD1-H-4 10:45-11:00 Role of High Vacuum Seasoning in All Solution-processed Organic Thin-film Transistors with Poly 4-vinyl Phenol (PVP) as Organic Gate Dielectric

저자: DongWoo Kim¹, HyoungJin Kim¹, Yong Uk Lee², and MunPyo Hong¹

소속: ¹Department of Display and Semiconductor Physics, Korea University, ²The Printable Electronics Technology Centre, NETPark

E. Compound Semiconductors 분과

Room E

창의관 (B113)

일 시 : 2월 16일(목) 09:30-11:00

세션명 : [TE1-E] Various Compound Semiconductors I

좌 장 : 심규환(전북대학교)

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- TE1-E-1 09:30-10:00 **[Invited]** Nanostructures for Enhanced Light Extraction Efficiency in Vertical InGaN/GaN Light-emitting Diodes
저자: Jun Ho Son¹, Jeong Min Baik², and Jong-Lam Lee¹
소속: ¹Department of Materials Science and Engineering, Division of Advance Materials Science, Pohang University of Science and Technology, ²School of Mechanical and Advanced Materials Engineering, Ulsan National Institute of Science and Technology
- TE1-E-2 10:00-10:30 **[Invited]** 고효율 초격자 양자계단레이저의 소자특성 및 열적 분석
저자: 유재수
소속: 경희대학교 전자전파공학과
- TE1-E-3 10:30-10:45 Fabrication of Near Infrared Planar Geiger-mode Avalanche Photodiodes using a Single Diffusion Process
저자: Kiwon Lee and Kyunghoon Yang
소속: Department of Electrical Engineering, KAIST
- TE1-E-4 10:45-11:00 Properties of Nonpolar Si-doped a-plane (11-20)GaN Structures Inserted SiN_x Interlayer with Different Deposition Conditions
저자: Ji Hoon Kim¹, Jung Ho Park¹, Kwang Hyeon Baik², Yong Gon Seo², and Sung-Min Hwang²
소속: ¹Department of Electronics and Electrical Engineering, Korea University, ²Compound Semiconductor Devices Research Center, Korea Electronics Technology Institute

D. Thin Film Process Technology 분과

Room F
창의관 (B114)

일 시 : 2월 16일(목) 09:30-11:00

세션명 : [TF1-D] Thin Film Transistor

좌 장 : 최창환(한양대학교)

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- TF1-D-1 09:30-10:00 **[Invited]**Development of Organic Field Effect Transistors for Nonvolatile Flexible Memory
저자: Kang-Jun Baeg and Yong-Young Noh
소속: Department of Chemical Engineering, Hanbat National University
- TF1-D-2 10:00-10:15 **Property Analysis of Zinc Tin Oxide Thin Film Grown by Atomic Layer Deposition Process**
저자: Un Ki Kim, Yoon Jang Chung, Byoung Keon Park, Eric Hwang, Min Hyuk Park, Taeyong Eom, and Cheol Seong Hwang
소속: WCU Hybrid Materials Program, Department of Materials Science and Engineering and Inter-University Semiconductor Research Center, Seoul National University
- TF1-D-3 10:15-10:30 **Amorphous Indium Gallium Zinc Oxide Thin Film Transistors on the Polyethersulfone Substrate Employing the Parylene-C**
저자: Seongpil Chang, Jung Ho Park, Shin Woo Jeong, Tae-Yeon Oh, Jong Woo Kim, and Byeong-Kwon Ju
소속: Department of Electrical Engineering, Korea University
- TF1-D-4 10:30-10:45 **Fabrication of Organic Thin Film Transistor using Inkjet-printed Silver Gate Electrode on Substrate with Different Temperature**
저자: Jon-Ho Jeun¹, Jung-Min Kim¹, Dong-Hoon Lee¹, and Yong-Sang Kim^{1,2}
소속: ¹Department of Nano Science & Engineering, Myongji University, ²Department of Electrical Engineering, Myongji University

TF1-D-5 10:45-11:00 **Degradation Mechanism of Poly-Si TFT under Hot-carrier Stress and Positive Bias Stress**

저자: Jun-Suk Chang¹, Tae-Young Jang¹, Dong-Hyoub Kim¹, Jung-woo Kim¹, Musarrat Hasan¹, Cuong Nguyen Manh¹, Hoi-chang Yang¹, Jae-Kyeong Jeong¹, Bio Kim², Jae-young Ahn², Ki-hyun Hwang², and Rino Choi¹

소속: ¹Inha University, ²Process Development P/J2, Semiconductor R&D Center, Samsung Electronics Co., Ltd.

F. Silicon Device and Integration Technology 분과

Room G

하나스퀘어 (B112)

일 시 : 2월 16일(목) 09:30-11:00

세션명 : [TG1-F] Device Technology for Advanced Materials and Devices

좌 장 : 양지운(고려대학교), 이충호(삼성전자)

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| TG1-F-1 | 09:30-09:45 | Investigation of Logic Circuit with Vertical Type Single-electron Transistor
저자: Kyung-Wan Kim, Jung Han Lee, Kwon-Chil Kang, and Byung-Gook Park
소속: Inter-University Semiconductor Research Center (ISRC), and School of Electrical Engineering and Computer Science, Seoul National University |
| TG1-F-2 | 09:45-10:00 | Study of PMOS Poly Depletion Effect at Metal/Poly-SiGe Gate
저자: 김태윤, 조흥재, 백건훈, 황의성, 김춘환, 홍권, 강효상
소속: Memory R&D Division, Hynix Semiconductor Inc. |
| TG1-F-3 | 10:00-10:15 | A 600 V Trench Gate MOSFET with Charge Sheet Super Junction (CSSJ)
저자: 백상원 ¹ , 조동환 ¹ , 최보식 ² , 이호준 ¹ , 이준영 ¹ , 박현진 ² , 이정수 ^{1,2}
소속: ¹ Pohang University of Science and Technology 전자전기공학과, ² Pohang University of Science and Technology 정보전자융합공학부 |
| TG1-F-4 | 10:15-10:30 | A Fully Digital On-chip Process Variation Sensor using Time-to-digital Converter
저자: 오름 ¹ , 성만영 ²
소속: ¹ 삼성전자 DRAM 설계팀, ² 고려대학교 전기전자전파공학과 |
| TG1-F-5 | 10:30-10:45 | A Simple and accurate Modeling of Non-rectilinear Gate Shape with Trapezoidal Approximation
저자: M. H. Ryu and Y. M. Kim
소속: School of Electrical and Computer Engineering, UNIST |

A. Interconnect & Package 분과

Room H

하나스퀘어 (B115)

일 시 : 2월 16일(목) 09:30-11:00

세션명 : [TH1-A] 구리 배선 기술

좌 장 : 김형준(연세대학교), 박주상(연세대학교)

TH1-A-1 09:30-10:00 **[Invited]**Development of a Diffusion Barrier Layer for Advanced Technology Node of Silicon Devices

저자: J. Koike

소속: Department of Materials Science, Tohoku University

TH1-A-2 10:00-10:15 Conformal Cu Seed Layer Formation by Electroless Deposition in High Aspect Ratio of Non-bosch Through Silicon Vias

저자: Kyung Ju Park, Myung Jun Kim, Taeho Lim, Hyo-Chol Koo, and Jae Jeong Kim

소속: School of Chemical and Biological Engineering, Seoul National University

TH1-A-3 10:15-10:45 **[Invited]**Development of Ceria-based Slurries at Neutral pH for Cu CMP

저자: Jae Jeong Kim

소속: School of Chemical and Biological Engineering, College of Engineering, Seoul National University

M. RF Design 분과

Room A
창의관 (106)

일 시 : 2월 16일(목) 11:20-12:35

세션명 : [TA2-M] CMOS RF Device and Circuit Solutions

좌 장 : 박준배(GCT 세미컨덕터), 남일구(부산대학교)

TA2-M-1 11:20-11:50 **[Invited]** Ultra-wideband Design Methodology of CMOS Phase-locked Loops and Voltage-controlled Oscillators

저자: Jae Joon Kim

소속: School of Electrical & Computer Engineering, Ulsan Institute of Science and Technology

TA2-M-2 11:50-12:05 A Capacitive Loaded Low Noise Amplifier for Simultaneous Input Impedance and Minimum Noise Matching

저자: Bum-Kyum Kim¹, Donggu Im¹, and Kwyro Lee^{1,2}

소속: ¹Department of Electrical Engineering, KAIST, ²National NanoFab Center

TA2-M-3 12:05-12:20 DC SOI MOSFET Device Characterization and Optimization Method for Rapid Evaluation of RF Switch Power Handling Capability

저자: Donggu Im¹, Ilhyun Choi², Bum-Kyum Kim¹, Hee-Kyung Bae², Byong-Joo Lee², and Kwyro Lee^{1,2}

소속: ¹Department of Electrical Engineering and Computer Science, KAIST, ²National NanoFab Center

TA2-M-4 12:20-12:35 MOSFET Device Originated Harmonic Distortion Analysis and Optimum Design Methodology for SOI SPDT RF Switch

저자: Donggu Im¹, Bum-Kyum Kim¹, Jaeyoung Choi¹, Youngho Cho², Bonkee Kim², and Kwyro Lee¹

소속: ¹Department of Electrical Engineering and Computer Science, KAIST, ²HiDeep Inc.

P. Device for Energy 분과

Room B

창의관 (110)

일 시 : 2월 16일(목) 11:20-12:35

세션명 : [TB2-P] Device Characteristics

좌 장 : 김윤기(삼성전자), 강달영(연세대학교)

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- TB2-P-1 11:20-11:35 **Closed-loop Control for Adaptive Wireless Power Transfer and Charging Applications**
저자: Phi-Thuc Duong and Jong-Wook Lee
소속: Department of Electronics and Radio Engineering, Kyung Hee University
- TB2-P-2 11:35-11:50 **Increasing Interfacial Fixed Charge at Al₂O₃/Si using High Pressure Oxygen Annealing for Solar Cell Application**
저자: Sakeb Hasan Choudhury¹, Sharif Md. Sadaf², and Hyunsang Hwang^{1,2}
소속: ¹Department of Nano-bio Materials and Electronics, Gwangju Institute of Science and Technology, ²School of Materials Science and Engineering, Gwangju Institute of Science and Technology
- TB2-P-3 11:50-12:05 **Organic-inorganic Hybrid Multilayer Transparent Cathode for P3HT:PCBM Solar Cells**
저자: Gwan Ho Jung, Kihyon Hong, Wan Jae Dong, Juyoung Ham, and Jong Lam-Lee
소속: Division of Advanced Materials Science and Department of Materials Science and Engineering, Pohang University of Science and Technology
- TB2-P-4 12:05-12:20 **Measurement of Seebeck Coefficients in Silicon Nanowire Thermoelectric Device with CMOS Top-down Process**
저자: Jaehyeon Kim^{1,2}, Younghoon Hyun¹, Youngsam Park¹, Wonchul Choi^{1,3}, Taehyoung Zyung¹, and Moongyu Jang^{1,2}
소속: ¹NT Research division, Electronics and Telecommunications Research Institute, ²Department of Advanced Device Technology, UST, ³Department of Electrical Engineering, KAIST

TB2-P-5 12:20-12:35 P3HT 나노 섬유 구조를 이용한 이층 박막 유기 태양전지
저자: 송지연, 이동구, 김준영, 송형준, 고영준, 이창희
소속: 서울대학교 전기정보공학부, 반도체공동연구소

L. Analog Design 분과

Room C
창의관 (116)

일 시 : 2월 16일(목) 11:20-12:35

세션명 : [TC2-L] Advanced Analog Techniques

좌 장 : 인해정(한양대학교), 안길초(서강대학교)

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- TC2-L-1 11:20-11:35 LED 구동을 위해 전류감지회로를 이용하여 출력전류가 정의되는 전류-모드 전하펌프 회로
저자: 안영국, 남현석, 이희영, 노정진
소속: 한양대학교 전자통신공학과
- TC2-L-2 11:35-11:50 An Integration-based, Spread-spectrum-clocking Tracking Aid for Digital Clock and Data Recovery Loops
저자: Sigang Ryu and Jaeha Kim
소속: School of Electrical Engineering, Inter-university Semiconductor Research Center, Seoul National University
- TC2-L-3 11:50-12:05 A 0.009% THD+N, 100 dB SNR Class-G Capacitor-Less Headphone Amplifier for an Audio Subsystem
저자: Sanghyub Kang, Taeho Hwang, Sunwoo Kwon, Sangheon Lee, Shinyoung Yi, Byoungkwon Moon, Hosung Sung, and Jinseok Koh
소속: Advanced Product Development Center, Dongbu HiTeck Co., Ltd.
- TC2-L-4 12:05-12:20 New High-sensitivity Logarithmic Response CMOS Active Pixel Sensor using a GIDL Mechanism
저자: Inkyu Baek, Jiwon Lee, and Kyoungsoon Yang
소속: Department of Electrical Engineering, KAIST
- TC2-L-5 12:20-12:35 A Photovoltaic Power Management System using a Luminance-controlled Oscillator and Charge Pump for MPPT
저자: Jun-Han Bae¹, Ji-Eun Jeong¹, Kwang-Su Kim², Caroline Sunyong Lee², Jung-Hoon Chun¹, and Kee-Won Kwon¹
소속: ¹College of Information & Communication, Sungkyunkwan University, ²Division

of Metallurgy and Materials Engineering, Hanyang University

H. Display and Imaging Technologies 분과

Room D

창의관 (117)

일 시 : 2월 16일(목) 11:20-12:35

세션명 : [TD2-H] OLED

좌 장 : 진병두(단국대학교)

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- TD2-H-1 11:20-11:50 **[Invited] Highly Efficient Phosphorescent Organic Light-emitting Diodes**
저자: Jang Hyuk Kwon
소속: Department of Information Display, Kyung Hee University
- TD2-H-2 11:50-12:05 **기판에 따른 유기 다이오드의 전력 전달 능력 연구**
저자: 강찬모, 정승준, 홍용택, 이창희
소속: 서울대학교 전기정보공학부, 서울대학교 반도체공동연구소
- TD2-H-3 12:05-12:20 **Optical Properties of Metal/dielectric Multilayer for Wavelength Tunable Transparent Cathode in Top-emission Organic Light Emitting Diodes**
저자: Bonhyeong Koo², Kihyon Hong¹, Sungjun Kim¹, Kisoo Kim¹,
Illhwan Lee¹, Juyoung Ham¹, and Jong-Lam Lee^{1,2}
소속: ¹Department of Advanced Materials Science, Pohang University of Science and Technology, ²Division of Materials Science and Engineering, Pohang University of Science and Technology
- TD2-H-4 12:20-12:35 **유기발광다이오드에서의 알칼리 금속 도핑 메커니즘 연구**
저자: 김기수, 홍기현, 이종람
소속: 포항공과대학교 신소재공학과
- TD2-H-5 12:35-12:50 **Highly Efficient Flexible Organic Light-emitting Devices using Modified Graphene Anodes**
저자: T.-H. Han¹, Y. Lee^{2,3}, M.-R. Choi¹, S.-H. Woo¹, S.-H. Bae^{2,3},
B. H. Hong⁴, J.-H. Ahn^{2,3}, and T.-W. Lee¹
소속: ¹Department of Materials Science and Engineering, Pohang University of Science and Technology, ²SKKU Advanced Institute of Nanotechnology and Center for Human Interface Nano Technology, ³School of Advanced Materials Science and

Engineering, Sungkyunkwan University, ⁴Department of
Chemistry, Seoul National University

E. Compound Semiconductors 분과

Room E
창의관 (B113)

일 시 : 2월 16일(목) 11:20-12:35

세션명 : [TE2-E] Various Compound Semiconductors II

좌 장 : 이종람(포항공과대학교), 김제원(삼성LED)

TE2-E-1 11:20-11:50 **[Invited]** Two-step Germanium Epitaxial Growth on (100) Silicon Substrate using Rapid Thermal Chemical Vapor Deposition (RTCVD)

저자: Chel-Jong Choi^{1,2}, Yeon-Ho Gil¹, and Kyu-Hwan Sim¹
소속: ¹School of Semiconductor and Chemical Engineering, Semiconductor Physics Research Center, Chonbuk National University, ²Department of BIN Fusion Technology, Chonbuk National University

TE2-E-2 11:50-12:05 **Effects of Double-side Patterned Sapphire Substrate on Light Extraction Efficiency in GaN-based LEDs**

저자: Hwan Keon Lee, Jun Ho Son, Yang Hee Song, Buem Joon Kim, and Jong-Lam Lee
소속: Division of Advanced Materials Science and Department of Materials Science and Engineering, Pohang University of Science and Technology

TE2-E-3 12:05-12:20 **유도결합 플라즈마를 이용한 SiC 비아홀의 식각 특성 연구**

저자: 최일환^{1,2}, 장경욱¹, 민병규², 윤형섭², 안호균², 임종원², 김정진², 문재경²
소속: ¹한서대학교 신소재공학과, ²한국전자통신연구원 RF융합부품연구팀

TE2-E-4 12:20-12:35 **Nanopatterning through Anodic Aluminum Oxide Template on GaN Substrate**

저자: Chul Jong Yoo, Jun Ho Son, and Jong Lam Lee
소속: Division of Advanced Materials Science and Department of Materials Science and Engineering, Pohang University of Science and Technology

D. Thin Film Process Technology **분과**

Room F
창의관 (B114)

일 시 : 2월 16일(목) 11:20-12:35

세션명 : [TF2-D] Resistive Memory

좌 장 : 황기현(삼성전자), 박태주(한양대학교)

TF2-D-1 11:20-11:50 **[Invited] Emerging Memories: Resistive Switching Mechanisms and Current Status**

저자: Doo Seok Jeong

소속: Electronic Materials Research Centre, Korea Institute of Science and Technology

TF2-D-2 11:50-12:05 **Memristive Tri-stable Resistive Switching at Ruptured Conducting Filaments of a Pt/TiO₂/Pt Cell**

저자: Kyung Jean Yoon, Min Hwan Lee, Gun Hwan Kim, Seul Ji Song, Jun Yeong Seok, Jung Ho Yoon, and Cheol Seong Hwang

소속: WCU Hybrid Materials Program, Department of Materials Science and Engineering and Inter-university Semiconductor Research Center, Seoul National University

TF2-D-3 12:05-12:20 **Plasma-enhanced Atomic Layer Deposition of NiO Thin Films for Resistive Switching Memory Applications**

저자: Seul Ji Song¹, Gun Hwan Kim¹, Jun Yeong Seok¹, Kyung Jean Yoon¹, Julien Gatineau², and Cheol Seong Hwang¹

소속: ¹WCU Hybrid Materials Program, Department of Materials Science and Engineering and Inter-university Semiconductor Research Center, Seoul National University, ²Air Liquide

TF2-D-4 12:20-12:35 **Effect of TaOx Composition and HfO₂ Physical Property on Bipolar Resistive Switching Behavior of Pt/HfO₂/TaOx/Pt Device**

저자: 김종기¹, 이성훈^{1,2}, 김영재¹, 나희도¹, 이규민¹, 박성훈¹, 손현철¹

소속: ¹연세대학교 신소재공학과, ²㈜하이닉스반도체

F. Silicon Device and Integration Technology **분과**

Room G

하나스퀘어 (B112)

일 시 : 2월 16일(목) 11:20-12:35

세션명 : [TG2-F] Integration Technology for Advance Materials and Devices

좌 장 : 이석희(KAIST), 이병훈(광주과학기술원)

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- TG2-F-1 11:20-11:35 Effect of SC1 Cleaning on the Performance of Graphene FET**
저자: 박은지¹, 강창구², 이상경², 조천흠¹, 이영곤², 정현종³,
서순애⁴, 이병훈^{1,2}
소속: ¹광주과학기술원 나노바이오 전자재료공학과, ²광주과학기술원
신소재공학부, ³삼성종합기술원, ⁴세종대학교 물리학과
- TG2-F-2 11:35-11:50 Wafer-scale Graphene Nanoribbons for Tunnel FET Applications**
저자: W. S. Hwang¹, K. Tahy¹, P. Zhao¹, R. L. Myers-Ward², P. M.
Campbell², C. R Eddy², Jr., D. K. Gaskill², H. Xing¹, A. C.
Seabaugh¹, and D. Jena¹
소속: ¹Department of Electrical Engineering, University of Notre Dame,
²U. S. Naval Research Laboratory
- TG2-F-3 11:50-12:05 The Improvement of Device Characteristic in HK/MG Logic Device by Newly Developed CESL**
저자: Hyunkwan Yu, Yong-kuk Jeong, Pankwi Park, Ki-Eun Kim,
Sang-Uk Park, Dong Suk Shin, Moon Han Park, Ja-Hm Ku,
and Nae-In Lee
소속: Advanced Process Development / TD, System LSI Division,
Samsung Electronics Co., Ltd.
- TG2-F-4 12:05-12:20 The Effect of Thermal Budget on the Insulating Properties of HfO₂ on Ge Substrate**
저자: Hyung-Suk Jung¹, Il-Hyuk Yu¹, Hyo Kyeom Kim¹, Sang Young
Lee¹, Tae Joo Park², Nae-In Lee³, and Cheol Seong Hwang¹
소속: ¹WCU Hybrid Materials Program, Department of Materials
Science and Engineering and Inter-university Semiconductor
Research Center, Seoul National University, ²Hanyang University,
³SYS LSI division, Samsung Electronics Co., Ltd.

- TG2-F-5 12:20-12:35 **Ground-plane Doping for V_T -modulation of Planar Tunnel Field-effect Transistors on Ultra-thin-body and BOX (UTBB) SOI Substrate**
저자: M.-C. Sun^{1,2}, H. Kim¹, S. W. Kim¹, G. Kim¹, H. W. Kim¹, J.-H. Lee¹, H. Shin¹, and B.-G. Park¹
소속: ¹Inter-university Semiconductor Research Center and School of Electrical Engineering and Computer Science, Seoul National University, ²TD (S. LSI), Semiconductor Business Group, Samsung Electronics Co., Ltd.

A. Interconnect & Package 분과

Room H

하나스퀘어 (B115)

일 시 : 2월 16일(목) 11:20-12:35

세션명 : [TH2-A] 탄소 배선 및 TSV

좌 장 : 이원준(세종대학교), 이태윤(연세대학교)

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- TH2-A-1 11:20-11:50 **[Invited]** Graphene Interconnects as Next Candidate for Replacing Cu Interconnects
저자: Taeyoon Lee
소속: Nanobio Device Laboratory, School of Electrical and Electronic Engineering, Yonsei University
- TH2-A-2 11:50-12:05 Growth of Multilayer Graphene by Chemical Vapor Deposition using Tetrabromomethane for Nanoscale Device Metallization
저자: 최태진, 강혜민, 정한얼, 이현익, 홍주리, 이상근, 이태윤, 김형준
소속: 연세대학교 전기전자공학부
- TH2-A-3 12:05-12:20 Influence of Hydrogen Gases and Metal Induced Catalytic Effect for Graphene Etching
저자: Hyonik Lee¹, Juree Hong¹, Jungmok Seo¹, Sang Geun Lee¹, Jae-Hong Lee¹, Taejin Choi², Hyemin Kang², Jaehong Yoon², Hanearl Jung², Hyungjun Kim², and Taeyoon Lee¹
소속: ¹Nanobio Device Laboratory, School of Electrical and Electronic Engineering, Yonsei University, ²Nanodevice Laboratory, School of Electrical and Electronic Engineering, Yonsei University
- TH2-A-4 12:20-12:35 Cu Contamination under Thermal and Electric Field Stress and its Effect on the Pn⁺ Diode Performances of the nMOSFET of a 3-D Integrated Circuit with through Silicon Vias
저자: 연한울¹, 정성엽¹, 임정열¹, 편정우², 김형욱², 백도현², 주영창¹
소속: ¹서울대학교 재료공학부, ²삼성전자 메모리사업부, 개발 QA팀

Room I

하나스퀘어 (아프리움)

일 시 : 2월 16일(목) 09:30-12:35

세션명 : [TP1] Poster I

A. Interconnect & Package 분과

- TP1-01 09:30-12:35 Silicidation of Plasma Enhanced Atomic Layer Deposition of Ni for Nanoscale Contact Application
저자: 윤재홍, 송정규, 최원식, 김형준
소속: 연세대학교 전기전자공학부
- TP1-02 09:30-12:35 The Effects of Surface Modification on the Electrical Properties of Silicon Nanowire Field Effect Transistor Grown by an Aqueous Electroless Etching Method
저자: Hyukho Kwon, Seulah Lee, and Taeyoon Lee
소속: Nanobio Device Laboratory, School of Electrical and Electronic Engineering, Yonsei University
- TP1-03 09:30-12:35 Cu/SAMs bilayer구조의 확산방지 및 낮은 접촉저항 특성을 이용한 a-Si:H TFT-LCDs에서의 소스/드레인 적용
저자: 한정석, 이치영, 이재갑
소속: School of Advanced Materials Engineering, Kookmin University
- TP1-04 09:30-12:35 단일 유기첨가제를 이용한 70 nm 구리 배선 전기도금
저자: 허미나¹, 최세진¹, 홍기민¹, 김창수²
소속: ¹충남대학교 물리학과, ²한국표준과학연구원 나노소재평가센터
- TP1-05 09:30-12:35 On the RF Characteristics of CVD-grown Single- and Multi-layer Graphene for High-frequency Interconnect
저자: Hee-Jo Lee¹, Eunho Kim², and Jongwan Jung^{1,2}
소속: ¹Graphene Research Institute, Sejong University, ²Institute of Nano and Advanced Materials, Sejong University
- TP1-06 09:30-12:35 Electrical Properties of TIPS-pentacene-organic Field Effect

Transistors with Graphene/metal Electrode Directly Grown by CVD at Low Temperature

저자: 최진우, 안효섭, 정종완

소속: Graphene Research Institute and Institute of Nano and Advanced Materials, Sejong University

TP1-07 09:30-12:35 Effect of Post N₂ & O₂ Thermal Treatment of Flowable Oxide Thin Film Grown by ALD-CVD Combination

저자: 박성훈, 이규민, 손현철

소속: 연세대학교 신소재공학과

TP1-08 09:30-12:35 Diffusion Barrier against Copper Ion Drift under Biased Thermal Stress: A Comparison between Through-silicon via and Planar Structures

저자: 서승호¹, 황주선², 정종완², 황욱중³, 송준엽⁴, 이원준²

소속: ¹세종대학교 기계공학과, ²세종대학교 나노신소재공학부, ³나노융합팩센터, ⁴한국기계연구원

TP1-09 09:30-12:35 Ultrasound-assisted Pd Activation Process for Electroless Copper Gap-filling in Cu Nano-interconnect

저자: Chang-Myeon Lee, Min Hyung Lee, Jin-Young Hur, Ho-Nyun Lee, and Hong-Kee Lee

소속: Korea Institute of Industrial Technology

TP1-10 09:30-12:35 Optimization of Catalyzing Process on Ta Substrate for Copper Electroless Deposition using Electrochemical Method

저자: Taeho Lim¹, Hyo-Chol Koo¹, Kyung Ju Park¹, Myung Jun Kim¹, Soo-Kil Kim², and Jae Jeong Kim¹

소속: ¹School of Chemical and Biological Engineering, College of Engineering, Seoul National University, ²Department of Integrative Engineering, Chung-Ang University

H. Display and Imaging Technologies 분과

TP1-11 09:30-12:35 Investigation of AC Model of Amorphous Silicon Thin Film Transistor Device

저자: Shinhyung Kim, Younghwan Son, and Hyungcheol Shin

소속: Inter-university Semiconductor Research Center and School of

Electrical Engineering, Seoul National University

- TP1-12 09:30-12:35 **Finite Element Method (FEM) Study on Space Charge Effects in Organic Light Emitting Diodes (OLED)**
저자: K. S. Kim and T. Y. Won
소속: School of Electrical Engineering, Inha University
- TP1-13 09:30-12:35 **Effects of the Annealing Temperature and High-k Gate Dielectrics of Amorphous GaInZnO Metal-point-contact Field Effect Transistors**
저자: 이세원, 조원주
소속: 광운대학교 전자재료공학과
- TP1-14 09:30-12:35 **TFT채널적용 IGZO박막특성분석 및 고성능소자제작**
저자: 신주홍, 문병무
소속: 고려대학교 미세소자공학협동과정
- TP1-15 09:30-12:35 **GPU-CPU Based Parallel Architecture for Multi-view Video Decoder**
저자: Xiang Jun Zhao, Nguyen Van Thao, and Yong Beom Cho
소속: Electronic Engineering, Konkuk University
- TP1-16 09:30-12:35 **TSP(Touch Screen Panel)용 전하재분배에 의한 전하검출 회로설계**
저자: 조호신, 김석만, 조경록
소속: 충북대학교 정보통신공학 통신회로 및 시스템
- TP1-17 09:30-12:35 **QDs/PVK 발광층을 이용한 고효율 하이브리드 전계발광소자의 제작**
저자: 김정우¹, 강대호¹, 장은식¹, 최수호¹, 류현지¹, 이현지¹, 유태양², 강신원¹
소속: ¹경북대학교 IT대학 전자공학부,
²경북대학교 전자전기컴퓨터학부
- TP1-18 09:30-12:35 **Enhanced Light Outcoupling of Silver-based Dielectric/metal/dielectric Transparent Electrode using Nano Structured MgO Layer**
저자: S. Kim, H. K. Yu, K. Hong, K. Kim, J. H. Son, I. Lee, and J.-L. Lee

소속: Department of Materials Science and Engineering, Division of Advanced Materials Science, Pohang University of Science and Technology

- TP1-19 09:30-12:35 **Fabrication of Air-gap Assisted OLED using Self-assembled Nanosphere Lithography**
저자: Jong Uk Kim, Sungjun Kim, and Jong-Lam Lee
소속: Division of Advanced Materials Science and Department of Materials Science and Engineering, Pohang University of Science and Technology
- TP1-20 09:30-12:35 **New Approaches for Overcoming Current Issues of Flexible AM-OLEDs: Development of Nanolaminated Single Gas Barrier Layer by Neutral Beam Assisted Sputtering Process**
저자: YunSung Jang, YouJong Lee, and MunPyo Hong
소속: Department of Display Semiconductor Physics, Korea University
- F. Silicon Device and Integration Technology 분과**
- TP1-21 09:30-12:35 **Effective Process of Dislocation for Embedded Flash Memory**
저자: 선종원, 박지환, 양택승, 한재원
소속: 동부하이텍 MF사업부 특화공정개발팀
- TP1-22 09:30-12:35 **Wafer Bonding을 이용한 FLI IGBT 제조 공정에 관한 연구**
저자: 조유습, 오주현, 금종민, 성만영
소속: 고려대학교 전기전자전파공학과
- TP1-23 09:30-12:35 **Reversed Meta-stable Dip (MSD) Effect in Fully Depleted (FD) Silicon-on-insulator (SOI) Triple-Gate MOSFETs**
저자: K.-I. Na¹, S. Cristoloveanu², M. Bawedin², Y. Bae³, K. -H. Park², P. Patruno⁴, W. Xiong⁵, and J. -H. Lee⁶
소속: ¹Convergence Components and Materials Research Laboratory, Electronics and Telecommunication Research Institute, ²Grenoble-INP, IMEP-LAHC Minatec, ³Department of Electronics Engineering, Uiduk University, ⁴SOITEC, ⁵Texas Instruments, ⁶School of EECS Kyungpook National University

- TP1-24 09:30-12:35 **다층 산화막을 이용한 고 신뢰성 트렌치 게이트 TDMOSFET 응용**
저자: 김상기, 이진호, 나경일, 원종일, 구진근, 양일석
소속: 한국전자통신연구원 IT 융합부품기술팀
- TP1-25 09:30-12:35 **Investigation of Channel Strain Distribution in FinFET with Si_{1-x}Ge_x S/D and Comparison with MOSFETs**
저자: 목인수, 오진호, 손현철
소속: 연세대학교 신소재공학과

L. Analog Design 분과

- TP1-26 09:30-12:35 **Edge-width Calibrated Serializer for 7.5Gb/s Transmitter**
저자: 이연호, 송준영, 정인화, 황세욱, 김철우
소속: 고려대학교 전자전기공학과 집적시스템연구실
- TP1-27 09:30-12:35 **UHF-band Near-field RFID Tag IC with 4-K OTP Memory for High Security Applications**
저자: Ngoc Dang Phan, Thuyen Chau Tran, and Jong-Wook Lee
소속: Department of Electronics and Radio Engineering, Kyung Hee University
- TP1-28 09:30-12:35 **Design of an ALS Sensor with Dark Current Compensation Circuit**
저자: 김정석¹, 조순익¹, 백광현², 김석기¹
소속: ¹고려대학교 전기전자공학과, ²중앙대학교 전자전기공학부
- TP1-29 09:30-12:35 **An Interstage-error-correction Technique for High-resolution Pipelined ADCs**
저자: 남재원, 윤석주, 전영득, 오지민, 김민기, 양일석, 노태문, 권종기
소속: 한국전자통신연구원 융합부품소재연구부문
- TP1-30 09:30-12:35 **Body-floating 기술을 이용한 낮은 트리거 전압을 갖는 ggNMOS 가반의 개선된 ESD 보호회로에 관한 연구**
저자: 김동수¹, 이병석¹, 박원석¹, 송보배², 정준모², 구용서¹
소속: ¹단국대학교 전자전기공학과, ²서경대학교 전자공학과

M. RF Design 분과

TP1-31 09:30-12:35 Comparison of CE and CB Configurations of SiGe HBTs for Power Gain and Stability

저자: Yongho Oh, Hyunchul Kim, and Jae-Sung Rieh
소속: School of Electrical Engineering, Korea University

TP1-32 09:30-12:35 A 140 GHz Colpitts Push-push VCO in a SiGe BiCMOS Technology

저자: Kyungmin Kim, Namhyung Kim, and Jae-Sung Rieh
소속: School of Electrical Engineering, Korea University

TP1-33 09:30-12:35 A Study on Fast Locking and Wideband PLL

저자: Jun Cheng and Yong Moon
소속: Department of Electronic Engineering, Soongsil University

TP1-34 09:30-12:35 비동기식 히스토그램을 이용한 적응형 등화기의 신뢰성 분석

저자: 김왕수, 성창경, 최우영
소속: 연세대학교 전기전자공학과

TP1-35 09:30-12:35 A High Frequency Resolution Digitally Controlled Oscillator with Adjustable ΔC

저자: 유상선, 박정호, 조한원, 유형준
소속: 한국과학기술원 전기 및 전자공학과

P. Device for Energy 분과

TP1-36 09:30-12:35 ONO 후면 패시베이션 및 레이저 가공을 통한 태양전지의 후면 전극 형성

저자: 최평호, 김효중, 이경수, 최병덕
소속: 성균관대학교 태양광시스템공학협동과정

TP1-37 09:30-12:35 GZO 투명전극을 이용한 염료 감응형 태양전지의 전기화학적 임피던스 및 효율 특성 분석

저자: 박재호, 이경주, 송상우, 신주홍, 조슬기, 문병무
소속: 고려대학교 미세소자협동과정

- TP1-38 09:30-12:35 Pt- CdS/CdSe Quantum Dots Sensitized TiO₂ Nanorods on FTO for Solar Hydrogen Generation
저자: U. Shaislamov and B. Yang
소속: Department of Information Nano Materials Engineering, Kumoh National Institute of Technology
- TP1-39 09:30-12:35 RIE를 이용한 피라미드와 반원 구조의 단 결정 태양 전지 제작
저자: 조준환¹, 공대영¹, 오정화¹, 조찬섭², 김봉환³, 이종현¹
소속: ¹경북대학교 전자전기컴퓨터학부,
²경북대학교 산업전자전기공학부,
³대구가톨릭대학교 전자공학과
- TP1-40 09:30-12:35 Flexible Organic Light Emitting Diodes using Cold-welded Silver Nanowires as a Transparent Conducting Electrode
저자: Bola Lee, Kihyon Hong, Kisoo Kim, Sungjun Kim, Ill-Hwan Lee, Bonhyeong Koo, and Jong-Lam Lee
소속: Graduate Institute of Advanced Materials Science, Pohang University of Science and Technology and Department of Materials Science and Engineering, Pohang University of Science and Technology
- TP1-41 09:30-12:35 분리된 LBSF 층 수 및 LBSF와 emitter의 갭 너비에 따른 후면 전극 실리콘 태양전지 효율 변화
저자: 장왕근¹, 임창진², 박정호^{1,2}
소속: ¹고려대학교 전기전자전파공학과,
²고려대학교 마이크로/나노시스템 협동과정
- TP1-42 09:30-12:35 Removal of Hole Extraction Layer in Polymer Solar Cells: Oxygen Plasma Modification on Indium-Tin-Oxide Anode
저자: Wan Jae Dong, Gwan Ho Jung, Kihyon Hong, Juyoung Ham, and Jong-Lam Lee
소속: Department of Materials Science and Engineering and Division of Advanced Materials Science, Pohang University of Science and Technology
- TP1-43 09:30-12:35 Transparent Conducting Dielectric/Metal/Dielectric Multilayer Electrode

for High Efficiency Organic Photovoltaic

저자: Juyoung Ham, Gwan Ho Jung, Kihyon Hong, Wan Jae Dong,
and Jong-Lam Lee

소속: Graduate Institute of Advanced Materials Science, Pohang
University of Science and Technology and Department of
Materials Science and Engineering, Pohang University of
Science and Technology

TP1-44 09:30-12:35

Al Doped-ZnO TCO(Transparent Conductive Oxide) Thin Films Prepared by Large Scaled Cylindrical Sputtering System

저자: 김동석¹, 백주열¹, 명재민², 안경준¹

소속: ¹(주)에스엔텍, ²연세대학교

Room J

하나스퀘어 (B116)

일 시 : 2월 16일(목) 09:30-17:10

세션명 : [CDC] Chip Design Contest

ASIC Demo

- CDC1** **An Implementation of H.264 Decoder with Low Memory Bandwidth**
저자: T. H Kim, H. C Lee, G. H Heo, J. W Yoo, S. W Ye, and Y. P Hong
소속: Division of Electronics and Electrical Engineering, Dongguk University
- CDC2** **생체모방 청각센서를 위한 아날로그 증폭단 설계**
저자: 김진호, 박정환, 송윤규, 김성준
소속: 서울대학교 공과대학 전기공학부, 서울대학교 융합과학기술대학원 나노융합학과
- CDC3** **High Performance Pipelined Architecture for 32-bit Single Core AES**
저자: 신경섭, Deng Lin, 김규관, 김승열, 유영갑
소속: 충북대학교 정보통신공학과
- CDC4** **A reference switching non-binary asynchronous SAR ADC for time-interleaving application**
저자: 백승엽¹, 조상현², 조동신¹, 김완¹, 류승탁¹
소속: ¹KAIST 전기 및 전자공학과, ²삼성전자 System LSI

Panel

- CDC5** **A Hybrid Dual Threshold 2T Gain Cell for Embedded Memory Applications**
저자: Weijie Cheng, Jeong-Wook Cho, Yong-Woon Kim, and Yeonbae Chung
소속: School of Electronics Engineering, Kyungpook National University
- CDC6** **스위칭-증폭기를 사용한 저-손실 밀리미터파 대역 CMOS 위상변환기**
저자: 최승호, 이국주, 김문일
소속: 고려대학교 전기전자전파공학부
- CDC7** **10bit Rail-to-Rail Time-Domain Successive Approximation ADC**
저자: 김훈기, 민영재, 권찬근, 김수원

소속: 고려대학교 전자전기공학과

- CDC8** **A Low Power Digital PLL with Power Optimized Digitally Controlled Oscillator**
저자: 정찬희, 김훈기, 김수원
소속: 고려대학교 전자전기공학과
- CDC9** **전력량 측정용 프로그램 가능한 이득 증폭기 및 아날로그-디지털 변환기**
저자: 권찬근, 민영재, 이관주, 정영목, 김수원
소속: 고려대학교 전자전기공학과
- CDC10** **A High Performance CMOS Circulator**
저자: S. M Kim, S. S Choi, W. G Kim, and Y. H Kim
소속: School of Mechatronics, GIST
- CDC11** **A Design of Low-Power and Low-Noise Analog Front-End Design for EEG Signal Acquisition**
저자: Chung-Jae Lee, Arim Ha, and Jong-In Song
소속: Department of Nanobio Materials and Electronics, GIST
- CDC12** **A 6.4-Gb/s/channel Asymmetric 4-PAM Transceiver for Memory Interface**
저자: 이광훈, 장영찬
소속: 금오공과대학교
- CDC13** **A Wide Dynamic Range CMOS Image Sensor Using Configurable Digital Logarithmic Counter**
저자: 김다솜, 김경태, 김대윤, 송민규
소속: 동국대학교 반도체과학과
- CDC14** **A PVT variation tolerant current-regulated LED driver IC**
저자: 임동혁, 박준은, 정덕균
소속: 서울대학교 집적시스템설계연구실
- CDC15** **Design of 1.2V 10bit 200MHz ADC in 0.13 μ m CMOS**
저자: 김태호, 이상윤, 김성우, 정덕균
소속: 서울대학교 집적시스템설계 연구실
- CDC16** **Measurement of On-Chip Power Grid Noise using Sensing Circuits**
저자: 광상근, 조정민, 최성식, 김나현, 김소영
소속: 성균관 대학교 반도체 시스템 공학과

기타 Demo/Panel 참여팀

- CDC_35** **설계명: LED채널 간 전류 오차를 감소시킨 능동 전류 조절기를 포함한 LED 구동 IC**
지도교수: 황인철
대표설계자: 윤성진
소속: 강원대학교
- CDC_36** **설계명: 18 ~ 32GHz 대역에서 동작하는 광대역 저잡음 증폭기**
지도교수: 전상근
대표설계자: 서보희
소속: 고려대학교
- CDC_37** **설계명: 회로 동작 중 열화 메커니즘으로 인한 소자의 신뢰성 연구를 위한 회로**
지도교수: 김동명, 김대환
대표설계자: 장재만
소속: 국민대학교
- CDC_38** **설계명: IEEE 802.16e WiMAX용 (576,288) LDPC 복호기 설계**
지도교수: 신경욱
대표설계자: 김해주
소속: 금오공과대학교
- CDC_39** **설계명: A CMOS integrated Carbon Nanotube Biosensor with an Actively Controlled Electrolyte Electrochemical Potential Regulator**
지도교수: 박영준
대표설계자: 김석향
소속: 서울대학교
- CDC_40** **설계명: Totally implantable cochlear systems**
지도교수: 송윤규
대표설계자: 강민규
소속: 서울대학교
- CDC_41** **설계명: 인공망막자극기**
지도교수: 조동일
대표설계자: 안재현
소속: 서울대학교
- CDC_42** **설계명: CNT 센서 신호 검출용 Readout 회로**
지도교수: 위재경
대표설계자: 신영산

소속: 송실대학교

CDC_43

설계명: CMOS IR-UWB Transmitter

지도교수: 김태욱

대표설계자: 한홍걸

소속: 연세대학교

CDC_44

설계명: DisplayPort 1.1용 Transceiver IP 개발

지도교수: 최우영

대표설계자: 김왕수

소속: 연세대학교

CDC_45

설계명: Display port full transceiver 를 위한 핵심 IP

지도교수: 최우영

대표설계자: 박영석

소속: 연세대학교

CDC_46

설계명: 60GHz anti-podal diode pair optoelectronic mixer with integrated VCO/PLL

지도교수: 최우영

대표설계자: 김재영

소속: 연세대학교

CDC_47

설계명: 부스트 컨버터를 이용한 열전소자의 최대전력점 추적회로

지도교수: 김시호

대표설계자: 박정용

소속: 충북대학교

CDC_48

설계명: dB-linear VGA

지도교수: 김범만

대표설계자: 최인영

소속: 포항공대학교

CDC_49

설계명: LED 구동을 위해 전류감지회로를 이용하여 출력전류가 정의되는 전류-모드 전하펌프 회로

지도교수: 노정진

대표설계자: 안영국

소속: 한양대학교

CDC_50

설계명: 200MHz On-chip Synchronous DC-DC buck converter with stacked wideband LNA

지도교수: 김정호

대표설계자: 구경철

소속: KAIST

CDC_51

설계명: 6bit 1GS/s flash SAR ADC for UWB application

지도교수: 류승탁

대표설계자: 성바로샘

소속: KAIST

H. Display and Imaging Technologies 분과

Room A

창의관 (106)

일 시 : 2월 17일(금) 09:30-11:00

세션명 : [FA1-H] Display & TFT

좌 장 : 모연곤(삼성 SMD), 배병성(호서대학교)

FA1-H-1 09:30-10:00 **[Invited]**Recent Progress on Low-fatigue Autostereoscopic Three-dimensional Displays

저자: 박재형

소속: 충북대학교 정보통신공학부

FA1-H-2 10:00-10:30 **[Invited]**Origin of High Carrier Mobility in Amorphous Metal Oxide Semiconductor InGaZnO₄ : First-principles Study

저자: Iljoon Kang^{1,2} and C. H. Park^{1,3}

소속: ¹Research Center for Dielectric and Advanced Matter Physics, Pusan National University, ²Department of Physics, Pusan National University, ³Department of Physics Education, Pusan National University

FA1-H-3 10:30-10:45 Backchannel 표면 전위를 고려한 Field Effect Method 기반의 TFT 결함 분석

저자: 송현수¹, 임화림¹, 정재욱², 홍용택¹

소속: ¹서울대학교 전기컴퓨터공학부, ²대구경북과학기술원

FA1-H-4 10:45-11:00 The Improved Storage Capacitor Structure of LTPS CMOS Thin-film Transistors for AMLCD Application

저자: 오금미^{1,2}, 이석우¹, 이상진¹, 박성기¹, 신우섭¹, 전명철¹, 황용기¹, 이현웅², 성만영²

소속: ¹LG Display, ²고려대학교

K. Memory (Design & Process Technology) 분과

Room B
창의관 (110)

일 시 : 2월 17일(금) 09:30-11:00

세션명 : [FB1-K] Memory Design Technologies

좌 장 : 강희복(하이닉스반도체), 최우영(삼성전자)

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- FB1-K-1 09:30-10:00 **[Invited]** Mobile Storage Overview
저자: 강용훈
소속: 삼성전자 Memory 상품기획팀
- FB1-K-2 10:00-10:15 SRAM disturb 특성 향상을 위한 β ratio 개선
저자: 김승준, 양태규, 김용훈, 김운용, 홍명희, 박용복, 김성환,
한정욱
소속: 삼성전자 System LSI사업부 Foundry사업팀 PIE팀 PIE²그룹
- FB1-K-3 10:15-10:30 On-Chip Regulator with Very High PSRR for Low Noise Applications
저자: 강신덕, 김용주
소속: 하이닉스반도체 설계기반기술팀
- FB1-K-4 10:30-10:45 On-Chip Decoupling Capacitor 최적 설계를 통한 DDR3 메모리의 Power Noise 감소
저자: 정부호, 이준호, 김현석, 조선기, 김양희
소속: 하이닉스 반도체 선행설계팀

O. System LSI Design 분과

Room C

창의관 (116)

일 시 : 2월 17일(금) 09:30-11:00

세션명 : [FC1-O] Multimedia SoCs

좌 장 : 공준진(삼성전자), 박종선(고려대학교)

FC1-O-1 09:30-09:45 저전력 H.264 프로세서를 위한 가변적인 비트 폭 임베디드 메모리 설계

저자: 박장원¹, 권진모¹, 김동완¹, 박종선^{1,2}
소속: ¹고려대학교 전기전자전파공학과,
²고려대학교 나노반도체공학과

FC1-O-2 09:45-10:15 **[Invited]**A Novel Coded Modulation Scheme for Reliability Improvement of NAND Flash Memory System

저자: 설창규, 유영건, 손홍락, 공준진
소속: 삼성전자, DS사업총괄, 메모리사업부

FC1-O-3 10:15-10:30 1080p H.264/AVC 프로그래머블 움직임 보상 엔진의 설계

저자: 차길형, 홍도선, 채수익
소속: 서울대학교 전기컴퓨터대학원 시스템설계연구실

FC1-O-4 10:30-10:45 A Study of Wide Dynamic Range Image without Memory in Digital Circuit

저자: 윤영환, 김명선, 김응재, 신민수
소속: 하이닉스 M8사업부 CIS 응용제품팀

FC1-O-5 10:45-11:00 The Real-time Face-Detection for Digital Images under Dynamic Visual Deformation Conditions

저자: Kyoungsoon Jang, Hosang Jo, Hyunjung Kang, and Bongsoon Kang
소속: Department of Electronics Engineering, Dong-A University

B. Patterning 분과

Room D
창의관 (117)

일 시 : 2월 17일(금) 09:30-11:00

세션명 : [FD1-B] Patterning (Litho & Etch)

좌 장 : 유원종(성균관대학교)

FD1-B-1 09:30-09:45 Modeling and Simulation of Line Edge and Width Roughness for EUV Resists

저자: Sang-Kon Kim

소속: Department of Applied Physics, Hanyang University

FD1-B-2 09:45-10:00 Analysis of Etched Biases of a Continuous Lines and Spaces for Patterning for Deep Trench Isolation

저자: Hee-Young Koh, YongKuk Bae, Siyoung Choi, and Yun-Suk Nam

소속: Process Development Team, Semiconductor R&D Center, Samsung Electronics Co., Ltd.

FD1-B-3 10:00-10:15 Analysis of Overlay Error by Different Aperture Mixing at 2Xnm Node

저자: 김신영, 박찬하, 양현조, 임동규

소속: Hynix반도체 노광OPC팀

FD1-B-4 10:15-10:45 **[Invited]**플라즈마 처리에 의한 그래핀의 전기적 특성 제어

저자: 유원종

소속: 성균관대학교 나노과학기술원

E. Compound Semiconductors 분과

Room E

창의관 (B113)

일 시 : 2월 17일(금) 09:30-11:00

세션명 : [FE1-E] Electronics Devices and Processes I

좌 장 : 윤형섭(ERTI), 곽준섭(순천대학교)

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- FE1-E-1 09:30-10:00 **[Invited] Next Generation Power Semiconductor Devices**
저자: 차호영
소속: 홍익대학교 전자전기공학부
- FE1-E-2 10:00-10:15 **다중 Al₂O₃/Ga₂O₃ 스택을 이용한 고전압 AlGaN/GaN HEMTs**
저자: 안우진, 석오균, 김영실, 한민구
소속: 서울대학교 전기공학부
- FE1-E-3 10:15-10:30 **The Effects of Interface Plasma Passivation on Pt/Al₂O₃/6H-SiC MOS Devices**
저자: Seung-Chan Heo¹, Dongjun Yoo¹, Tae Yong Park¹, Hyeongtag Jeon¹, Tae Young Jang², Rino Choi², and Changhwan Choi¹
소속: ¹Division of Materials Science and Engineering, Hanyang University, ²School of Materials Science and Engineering, Inha University
- FE1-E-4 10:30-10:45 **Effect of Al₂O₃ Gate Insulator Thickness on Characteristics of Normally-off GaN MOSFETs**
저자: Sung-Dal Jung¹, Ki-Won Kim¹, Mi-Kyung Kwon¹, Dong-Seok Kim¹, Hee-Sung Kang¹, Ki-Sik Im¹, Chul-Ho Won¹, Chan-Ho Bu¹, Ryun-Hwi Kim², Kyu-Il Jang¹, Chung-Mo Yang¹, and Jung-Hee Lee¹
소속: ¹School of Electrical Engineering & Computer Science, Kyungpook National University, ²Department of Sensor & Display Engineering, Kyungpook National University
- FE1-E-5 10:45-11:00 **Packaged GaN HEMT Power Bar with 17 W Output Power at 3 GHz**
저자: 장우진, 임종원, 주철원, 강동민, 이상흥, 김성일, 안호균, 윤형섭, 민병규, 김해천, 문재경, 남은수

소속: 한국전자통신연구원 RF융합부품연구팀

D. Thin Film Process Technology **분과**

Room F

창의관 (B114)

일 시 : 2월 17일(금) 09:30-11:00

세션명 : [FF1-D] Device and Characterization Technology

좌 장 : 최리노(인하대학교), 전상훈(삼성종합기술원)

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- FF1-D-1 09:30-10:00 **[Invited]** Gate-Last Process Integration Issues with High-k Gate Dielectric and Metal Gate (HKMG) Technology
저자: Changhwan Choi
소속: Division of Materials Science and Engineering, Hanyang University
- FF1-D-2 10:00-10:15 **Scaling of Equivalent Oxide Thickness and Modulation of Effective Work Function using Transition Metal (La,Ti) – Inserted TiN Metal Gate on HfO₂**
저자: Hyo Kyeom Kim¹, Hyung-Suk Jung¹, Sang Young Lee¹, Il-Hyuk Yu¹, Tae Joo Park², and Cheol Seong Hwang¹
소속: ¹WCU Hybrid Materials Program, Department of Materials Science and Engineering and Inter-university Semiconductor Research Center, Seoul National University, ²Department of Materials Engineering, Hanyang University
- FF1-D-3 10:15-10:30 **Application of Charge Pumping Method into Extracting Trap Distribution in Polysilicon Thin Film Transistors**
저자: Cuong Nguyen Manh¹, Tae-Young Jang¹, Dong-Hyoub Kim¹, Jungwoo Kim¹, Jun Suk Chang¹, Musarrat Hasan¹, Hoichang Yang¹, Jae Kyeong Jeong¹, Bio Kim², Jae-young Ahn², Kihyun Hwang², and Rino Choi¹
소속: ¹Inha University, ²Process Development P/J2, Semiconductor R&D Center, Samsung Electronics Co., Ltd.
- FF1-D-4 10:30-10:45 **Capacitance-voltage Measurement of Leaky Al₂O₃ MIM Capacitor using Time Domain Reflectometry (TDR)**
저자: 김용훈¹, 이영곤¹, 김진주², 정육진¹, 송승철³, 이병훈^{1,2}
소속: ¹광주과학기술원 신소재공학부, ²광주과학기술원 나노바이오재료 전자공학과, ³Texas Instruments Inc.

- FF1-D-5 10:45-11:00 Effects of W Diffusion Barrier on Inhibition of AlN Formation in Ti/Al based Ohmic Contacts on N-polar N-GaN
저자: Yang Hee Song, Jun Ho Son, Buem Joon, and Jong-Lam Lee
소속: 포항공과대학교 신소재공학과 첨단재료과학부

G. Device & Process Modeling, Simulation and Reliability 분과

Room G

하나스퀘어 (B112)

일 시 : 2월 17일(금) 09:30-11:00

세션명 : [FG1-G] Modeling and Simulation I

좌 장 : 이성현(한국외국어대학교), 신민철(KAIST)

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- FG1-G-1 09:30-10:00 **[Invited]** Tunneling Field-Effect Transistors: The Next-Generation Devices
저자: Woo Young Choi
소속: Department of Electronic Engineering, Sogang University
- FG1-G-2 10:00-10:15 Optimization of Gateless MOSFET (Biristor)
저자: Seung-Won Ko, Dong-Il Moon, Sungho Kim, Ji-Min Choi, and Yang-Kyu Choi
소속: Department of Electrical Engineering, KAIST
- FG1-G-3 10:45-11:00 Characterization of Floating-base Bipolar Junction Transistor as a 2-terminal Select Device for Cross-Point Memory Devices
저자: Jong-Ho Bae, Chang-Hee Kim, and Jong-Ho Lee
소속: Inter-University Semiconductor Research Center (ISRC) and School of Electrical Engineering, Seoul National University
- FG1-G-4 10:15-10:30 Transfer Characteristics Simulation for Hydrogenated Amorphous Silicon Thin Film Transistors using High Field Mobility Degradation Model
저자: Seunghyun Jang, Jaehong Lee, Jaeho Lee, and Hyungcheol Shin
소속: Inter-University Semiconductor Research Center (ISRC) and School of Electrical Engineering, Seoul National University
- FG1-G-5 10:30-10:45 Temperature Dependent Mobility Characteristics for the InGaZnO_x Thin Film Transistor
저자: Sang-Ho Rha^{1,2}, Jisim Jung¹, Un Ki Kim¹, Yoon Jang Chung¹, Eun Suk Hwang¹, and Cheol Seong Hwang¹
소속: ¹Department of Materials Science and Engineering and Inter-

university Semiconductor Research Center, Seoul National University, ²Process Development Team, Semiconductor R&D Center, Samsung Electronics Co., Ltd.

A. Interconnect & Package 분과

Room H

하나스퀘어 (B115)

일 시 : 2월 17일(금) 09:30-11:00

세션명 : [FH1-A] 패키징 세션 I

좌 장 : 안은철(삼성전자), 이후정(성균관대학교)

FH1-A-1 09:30-10:00 **[Invited]** 3D Packaging Trends

저자: 황태주

소속: 삼성전자 반도체연구소

FH1-A-2 10:00-10:30 **[Invited]** RF Characteristic Study of MCP with Modified Package Substrate

저자: Woong-Sun Lee¹, Sang-Joon Lim¹, Heung-Jae Shin¹, Jong-Tae Lee², Jung-Kwon Park², Qwan-Ho Chung¹, and Kwang-Yoo Byun¹

소속: ¹PKG R&D, Hynix Semiconductor Inc., ²R&D Department Simmtech Co., Ltd.

FH1-A-3 10:30-11:00 **[Invited]** Mechanical and Electrical Reliabilities of Metallic Bonds for 3D Integration

저자: 박영배, 곽병현, 김재명, 박종명, 김성혁, 김정규

소속: 안동대학교 신소재공학부 청정에너지 소재기술연구센터

Q. Metrology, Inspection, and Yield Enhancement 분과

Room A
창의관 (106)

일 시 : 2월 17일(금) 11:20-12:35

세션명 : [FA2-Q] Q I

좌 장 : 김진승(전북대학교), 오승철(SNUprecision)

FA2-Q-1 11:20-11:50 **[Invited]**The Present Status and New Applications of Non-contact Corona-kelvin Dielectric Metrology, and Advanced Contamination Monitoring Techniques

저자: Lubek Jastrzebski and Andrew Findlay
소속: Semilab Co., Ltd.

FA2-Q-2 11:50-12:20 **[Invited]**2D Spectroscopic Ellipsometer

저자: Anlun Tang and J. L. Choi
소속: AUROS Technology, Inc.

FA2-Q-3 12:20-12:35 3D Profile Measurement of TSVs based on the Optical Comb of a Femtosecond Pulse Laser

저자: 진종한^{1,2}, 이성현¹, 김재완^{1,2}, 강주식^{1,2}, 김종안¹
소속: ¹한국표준과학연구원 기반표준본부 길이센터,
²과학기술연합대학원대학교

FA2-Q-4 12:35-12:50 Defect Signal Intensity Simulation by Change of Apertures on a Bright Field Inspection Tool

저자: Seong-Min Ma, Kyu Young Kim, Dae Jong Kim, Young Jae Cho, Sung Su Kim, Hyung Won Yoo, and Il Keoun Han
소속: Manufacturing Division, Hynix Semiconductor Inc.

K. Memory (Design & Process Technology) 분과

Room B

창의관 (110)

일 시 : 2월 17일(금) 11:20-12:35

세션명 : [FB2-K] Phase Change Memories

좌 장 : 조성익(전북대학교)

FB2-K-1 11:20-11:50 **[Invited]** Critical Consideration and Requirements of Access Device for Scalable Phase Change Memory

저자: 박해찬, 박남균, 김석기, 김명섭, 이세호, 최강식, 이정훈, 홍성주

소속: 하이닉스반도체 선행소자A팀

FB2-K-2 11:50-12:05 PCRAM Flip-flop Circuit with Sequential Sleep-in Control Scheme

저자: Jun-Myung Choi, Chul-Moon Jung, and Kyeong-Sik Min

소속: School of Electrical Engineering, Kookmin University

FB2-K-3 12:05-12:20 The Effect of Carbon Incorporated into $\text{In}_3\text{Sb}_1\text{Te}_2$ on Phase Change Characteristics in Phase Change Memory

저자: 김현수^{1,4}, 김용태², 김용인³, 성만영⁴

소속: ¹삼성전자 Memory 사업부, ²한국과학기술연구원, ³KAIST, ⁴고려대학교

FB2-K-4 12:20-12:35 Improved Switching Uniformity in $\text{Ge}_2\text{Sb}_2\text{Te}_5$ based Resistive Switching Memory Device by using Internal Resistor

저자: Jiyong Woo¹, Seungjae Jung¹, Jubong Park¹, Seonghyun Kim¹, Wootae Lee¹, Dasesoek Lee¹, Euijun Cha², and Hyunsang Hwang^{1,2}

소속: ¹School of Materials Science and Engineering, Gwangju Institute of Science and Technology, ²Department of Nanobio Materials and Electronics, Gwangju Institute of Science and Technology, Gwangju Institute of Science and Technology

O. System LSI Design 분과

Room C

창의관 (116)

일 시 : 2월 17일(금) 11:20-12:35

세션명 : [FC2-O] Digital VLSI Circuits and Systems

좌 장 : 조준호(서울 벨연구소), 이한호(인하대학교)

FC2-O-1 11:20-11:35 An Efficient Overlapped LDPC Decoder with a Dual-diagonal Structure
저자: Yong Ki Byun, Jong Kang Park, Soongyu Kwon, and Jong Tae Kim
소속: School of Information and Communication Engineering, Sungkyunkwan University

FC2-O-2 11:35-12:05 **[Invited]** Design of Convolutional Single Parity-check Codes with Structure
저자: 조준호
소속: 서울 벨 연구소

FC2-O-3 12:05-12:20 Low Power CORDIC Architecture using Trigonometric Characteristics
저자: 이민우, 박종선
소속: 고려대학교 전기전자전파공학과

FC2-O-4 12:20-12:35 Low Power Multiplexer at Data Rate of 8 Gb/s with PMOS Latch
저자: Yifei Li, Suki Kim, and Sang-Hyuk Yang
소속: Department of Electrical Engineering, Korea University

J. Nano-Science & Technology 분과

Room D

창의관 (117)

일 시 : 2월 17일(금) 11:20-12:35

세션명 : [FD2-J] Graphene and Carbon Related Nanostructures

좌 장 : 이태우(포항공과대학교), 김 웅(고려대학교)

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- FD2-J-1 11:20-11:50 **[Invited] Graphene Transparent Conductive Films**
저자: Jong-Hyun Ahn
소속: School of Advanced Materials Science and Engineering, SKKU
Advanced Institute of Nanotechnology, Sungkyunkwan
University
- FD2-J-2 11:50-12:05 **Stacking-Faults Free II-VI Nanowires via Tunable Catalytic Alloying**
저자: Hoseok Heo², Kibum Kang¹, Donghun Lee¹, Li-Hua Jin³, Hyeon-Jun Back⁴, Yong-Jin Kim^{1,4}, Miseong Kim¹, Hyun-Seung Lee¹, Inchan Hwang¹, Byung-Joo Lee¹, Gyu-Chul Yi⁴, Yong-Hoon Cho³, and Moon-Ho Jo^{1,2}
소속: ¹Department of Materials Science and Engineering, Pohang University of Science and Technology, ²Division of Advanced Materials Science, Pohang University of Science and Technology, ³Graduate School of Nanoscience & Technology (WCU), and KI for the NanoCentury, KAIST, ⁴National Creative Research Initiative Center for Semiconductor Nanorods and Department of Physics and Astronomy, Seoul National University
- FD2-J-3 12:05-12:20 **High Strain Endurable Graphene Transistors with Printed Electrolyte Dielectrics**
저자: Seoung-Ki Lee¹, Beom Joon Kim², Houk Jang¹, Jeong Ho Cho², and Jong-Hyun Ahn¹
소속: ¹School of Advanced Materials Science and Engineering, SKKU Advanced Institute of Nanotechnology (SAINT) and Center for Human Interface Nano Technology (HINT), Sungkyunkwan University, ²Department of Organic Materials and Fiber Engineering, Soongsil University

FD2-J-4 12:20-12:50 **[Invited]** Hysteresis-Free Carbon Nanotube Network Transistors with a Ferroelectric Polymer Gate Insulator
저자: Y. S. Choi and C. Park
소속: Department of Materials Science and Engineering, Yonsei University

E. Compound Semiconductors 분과

Room E

창의관 (B113)

일 시 : 2월 17일(금) 11:20-12:35

세션명 : [FE2-E] Electronics Devices and Processes II

좌 장 : 이정희(경북대학교), 차호영(홍익대학교)

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- FE2-E-1 11:20-11:50 **[Invited]** 차세대 국방레이더 트랜시버용 GaN 전자소자 제조공정 기술 개발
저자: 문재경
소속: 한국전자통신연구원 융합부품소재연구부문 광무선융합부품연구부 RF융합부품연구팀
- FE2-E-2 11:50-12:05 Crack-free AlGaIn/GaN HFET Grown on 6-inch Si substrate
저자: J. M. Kim, K. C. Kim, E. J. Hwang, S. M. Cho, and T. H. Jang
소속: IGBT part, LG Electronics Inc.
- FE2-E-3 12:05-12:20 Characteristics of AlGaIn/GaN-based FinFET using High Quality ALD Al₂O₃ as Gate Dielectric
저자: Ki-Sik Im, Ki-Won Kim, Dong-Seok Kim, Hee-Sung Kang, Sung-Dal Jung, Chan-Ho Bu, Chul-Ho Won, Ryun-Hwi Kim, Kyu-Il Jang, Mi-Kyung Kwon, and Jung-Hee Lee
소속: School of Electrical Engineering and Computer Science, Kyungpook National University
- FE2-E-4 12:20-12:35 X-band용 6W AlGaIn/GaN HEMT 소자의 특성
저자: 김성일, 윤형섭, 강동민, 민병규, 안호균, 주철원, 이종민, 이상흥, 임종원, 김해천, 문재경, 남은수
소속: ETRI 융합부품소재연구부문 광무선융합부품연구팀 RF융합부품연구팀

D. Thin Film Process Technology 분과

Room F

창의관 (B114)

일 시 : 2월 17일(금) 11:20-12:35

세션명 : [FF2-D] Thin Film Deposition

좌 장 : 윤성민(경희대학교), 김형섭(성균관대학교)

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- FF2-D-1 11:20-11:50 **[Invited] Nonvolatile Memory Technology with Engineered Tunnel Barriers Based on High-k Materials**
저자: Won-Ju Cho
소속: Department of Electronic Materials Engineering, Kwangwoon University
- FF2-D-2 11:50-12:05 **Atomic Layer Deposition of (GeTe₂)_{1-x}(Sb₂Te₃)_x Film for Phase Change Memory**
저자: Taeyong Eom¹, Seol Choi¹, Byung Joon Choi¹, Min Hwan Lee¹, Taehong Gwon¹, Sang Ho Rha¹, Woongkyu Lee¹, Moo-Sung Kim², Manchao Xiao³, and Cheol Seong Hwang¹
소속: ¹WCU Hybrid Material Program, Department of Materials Science and Engineering, Seoul National University, and Inter-university Semiconductor Research Center, Seoul National University, ²Air Products Korea, ³Air Products and Chemicals, Inc.
- FF2-D-3 12:05-12:20 **Atomic Layer Deposition of SrTiO₃ Films with Cp-based Precursors**
저자: Woongkyu Lee, Jeong Hwan Han, Woojin Jeon, and Cheol Seong Hwang
소속: WCU Hybrid Materials Program, Department of Materials Science and Engineering and Inter-university Semiconductor Research Center, Seoul National University
- FF2-D-4 12:20-12:35 **Investigation on Suppression of Nickel-Silicide Formation by Fluorocarbon Reactive Ion Etch (RIE) and Plasma-Enhanced Deposition**
저자: Hyun Woo Kim¹, Jung Han Lee¹, Min-Chul Sun^{1,2}, and Byung-Gook Park¹
소속: ¹ Inter-University Semiconductor Research Center (ISRC) and

School of Electrical Engineering and Computer Science, Seoul
National University, ²TD Team (S. LSI), Semiconductor
Business Group, Samsung Electronics Co., Ltd.

**FF2-D-5 12:35-12:50 Comparative Study of Ultralow-k pSiCOH (k=2.5) Films by using
Different C-bridged Si-precursors**

저자: Gyeonghee Kim¹, Sang Hoon Ahn¹, Insun Jung², Kyu-Hee Han¹,
Janghee Lee¹, Jongho Yun¹, Gil Heyun Choi¹, Ho Kyu Kang¹,
and Chillhee Chung¹

소속: ¹Process Development Team, Semiconductor R&D Center,
Samsung Electronics Co., Ltd., ²Analytical Engineering Group,
AE Center, Samsung Advanced Institute of Technology

G. Device & Process Modeling, Simulation and Reliability 분과

Room G

하나스퀘어 (B112)

일 시 : 2월 17일(금) 11:20-12:35

세션명 : [FG2-G] Modeling and Simulation II

좌 장 : 황성보(매그나칩반도체), 이정수(포항공과대학교)

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- FG2-G-1 11:20-11:50 **[Invited]** Full Quantum-mechanical Calculation of Gate Leakage Current in Nano-scale MOSFETs
저자: Mincheol Shin, Kihoon Park, and Jung Hyun Oh
소속: Department of Electrical Engineering, KAIST
- FG2-G-2 11:50-12:05 Estimation of Initial Surface Potential and Modeling of Inversion Charge for Double-Gate MOSFET
저자: 황병운¹, 이창용², 이석희¹, 양지운²
소속: ¹Department of Electrical Engineering, KAIST, ²Department of Electronics and Information Engineering, Korea University
- FG2-G-3 12:05-12:20 Non-equilibrium Green's Function Approach to Surface-roughness-limited Mobility in Silicon Nanowire Field Effect Transistors
저자: Hyo-Eun Jung and Mincheol Shin
소속: Department of Electrical Engineering, KAIST
- FG2-G-4 12:20-12:35 Study of Hole-mobility Behaviors in Ultra-scaled Silicon Nanowire Field Effect Transistors: Multi-band Monte Carlo Approach
저자: Hoon Ryu¹, Ju-Young Jung², and Mincheol Shin²
소속: ¹Supercomputing Center, Korea Institute of Science and Technology Information, ²Department of Electrical Engineering, KAIST

A. Interconnect & Package 분과

Room G

하나스퀘어 (B112)

일 시 : 2월 17일(금) 11:20-12:35

세션명 : [FH2-A] 패키징 세션 II

좌 장 : 황태주(삼성전자), 박영배(안동대학교)

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- FH2-A-1 11:20-11:50 **[Invited]** Patterning Technologies of Organic Package Substrate
저자: 조순진
소속: 삼성전기 ACI 사업부
- FH2-A-2 11:50-12:05 A Self-Convection 3D IC Cooling System using a Micro Flat Heat Pi for Portable Devices
저자: 김남재, 김시호
소속: School of Integrated Technology and Yonsei Institute of convergence technology
- FH2-A-3 12:05-12:20 The Effects of a Ni(P)/Cu Diffusion Barrier on Reliabilities of Cu/Sn/Cu Bonding
저자: 이병훈, 이후정
소속: 성균관대학교 신소재공학과
- FH2-A-4 12:20-12:50 **[Invited]** LED Package 기술 동향
저자: 황성덕
소속: 삼성LED 연구소 연구¹팀

Q. Metrology, Inspection, and Yield Enhancement 분과

Room A

창의관 (106)

일 시 : 2월 17일(금) 13:40-15:10

세션명 : [FA3-Q] Q II

좌 장 : 유형원(하이닉스반도체), 김호섭(선문대학교)

FA3-Q-1 13:40-14:10 **[Invited]**High Speed Full Wafer Monitoring of Surface, Edge and Bonding Interface for 3D-stacking

저자: Pierre-Yves Guittet, Lars Markwort, Greg Savage, and Christoph Kappel
소속: Nanometrics GmbH

FA3-Q-2 14:10-14:25 탐침현미경-전자현미경 결합과 반도체 기술

저자: 박병천¹, 이주엽², 송운¹, 김달현¹, 홍재완²
소속: ¹한국표준과학연구원, ²㈜나노포커스

FA3-Q-3 14:25-14:40 FE-(S)TEM을 이용한 GaN계 LED의 미세구조 분석

저자: 양준모¹, 박중식^{1,3}, 박경진¹, 박윤창¹, 유정호¹, 정철성¹, 이상걸², 신기삼³
소속: ¹나노종합팹센터, ²한국기초과학지원연구원, ³창원대학교 나노신소재공학과

FA3-Q-4 14:40-14:55 Strategy of Yield Ramp-up using Test Vehicle and the Simulation of Yield Prediction

저자: Jun-Woo Lee, Hyo-Jin Kim, Kyoung-mi Park, Seung-Woo Do, Jong-Hyun Lee, and Nae-In Lee
소속: Technology Development-1 / TD, System LSI Division, Samsung Electronics Co., Ltd.

K. Memory (Design & Process Technology) 분과

Room B

창의관 (110)

일 시 : 2월 17일(금) 13:40-15:10

세션명 : [FB3-K] Resistive Switching Memories

좌 장 : 홍 권(하이닉스반도체), 최우영(서강대학교)

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- FB3-K-1 13:40-14:10 **[Invited] Review and Prospects of New Memory Development**
저자: G. H. Koh, B. C. Kim, S. O. Park, S. W. Nam, S. Choi, G. T. Jeong, H. K. Kang, and C. Chung
소속: Semiconductor R&D Center, Semiconductor, Samsung Electronics Co., Ltd.
- FB3-K-2 14:10-14:25 **1D 1R Type Cross-bar Resistive Memory using TiO₂ Thin Films**
저자: Gun Hwan Kim¹, Jong Ho Lee¹, Jeong Hwan Han¹, Seul Ji Song¹, Jun Yeong Seok¹, Jung Ho Yoon¹, Kyung Jean Yoon¹, Min Hwan Lee¹, Tae Joo Park², and Cheol Seong Hwang¹
소속: ¹WCU Hybrid Materials Program, Department of Materials Science and Engineering and Inter-university Semiconductor Research Center, Seoul National University, ²Department of Materials Engineering, Hanyang University
- FB3-K-3 14:25-14:40 **Ferroelectricity Induced Resistance Switching in PZT/PCMO/Nb:STO Epitaxial Heterostructure**
저자: Sharif Md. Sadaf¹, El Mostafa Bourim³, Xinjun Liu¹, Sakeb H. Choudhury², and Hyunsang Hwang^{1,2}
소속: ¹School of Materials Science and Engineering, Gwangju Institute of Science and Technology, ²Department of Nanobio Materials and Electronics, Gwangju Institute of Science and Technology, ³Department of Physics, Gwangju Institute of Science and Technology
- FB3-K-4 14:40-14:55 **A New Read Scheme using-built in Selectivity for High-density Cross-point Array Resistive Switching Memory Application**
저자: Godeuni Choi¹, Jungho Shim¹, Euijun Cha², Jubong Park¹, and Hyungsang Hwang^{1,2}
소속: ¹School of Materials Science and Engineering, Gwangju

Institute of Science and Technology, ²Department of Nanobio
Materials and Electronics, Gwangju Institute of Science and
Technology

**FB3-K-5 14:55-15:10 Electrode-dependent Resistive Switching Characteristics of
Maghemite Nanoparticle Assembly on Flexible Substrate**

저자: Jae Woo Yoo¹, Quanli Hu¹, Yoon-Jae Baek², Chi Jung Kang^{1,3},
Hyun Ho Lee⁴, Do-Joong Lee⁵, Hyun-Mi Kim⁵, Ki-Bum Kim⁵,
and Tae-Sik Yoon^{1,2}

소속: ¹Department of Nano Science and Engineering, Myongji
University, ²Department of Materials Science and Engineering,
Myongji University, ³Department of Physics, Myongji University,
⁴Department of Chemical Engineering, Myongji University,
⁵Department of Materials Science and Engineering, Seoul
National University

N. VLSI CAD 분과

Room C
창의관 (116)

일 시 : 2월 17일(금) 13:40-15:10

세션명 : [FC3-N] Innovative Ideas in System-Level Designs

좌 장 : 김지훈(충남대학교), 신영수(KAIST)

FC3-N-1 13:40-14:10 **[Invited]**대용량 NAND SSD 컨트롤러 설계 검증을 위한 FPGA 기반 플랫폼

저자: 이세일, 이명현, 서범준, 최성운, 윤성로
소속: 고려대학교 전기전자전파공학과

FC3-N-2 14:10-14:40 **[Invited]**A Hierarchical 3D Floor-planning for Optimizing Wire and TSVs

저자: 이병현, 김태환
소속: 서울대학교 전기컴퓨터공학부

FC3-N-3 14:40-14:55 DRAM/PRAM Memory Subsystem Modeling

저자: 김영식, 유승주, 이승구
소속: 포항공과대학교 전자전기공학과

FC3-N-4 14:55-15:10 Hierarchical Temporal Memory 방식을 이용한 뇌 인지 기능 모사 하드웨어의 구현

저자: 김덕환, 송지훈, 신영수
소속: KAIST 전기 전자공학과

J. Nano-Science & Technology 분과

Room D

창의관 (117)

일 시 : 2월 17일(금) 13:40-15:10

세션명 : [FD3-J] Nanomaterials and Energy Conversion Processes

좌 장 : 이 우(한국표준과학연구원), 조문호(포항공과대학교)

FD3-J-1 13:40-14:10 **[Invited]** Atomic and Nano Scale Design of Electrode Materials for Lithium Rechargeable Batteries by Integrating Ab Initio Calculations with Experiments

저자: Kisuk Kang

소속: Department of Material Science and Engineering, Seoul National University

FD3-J-2 14:10-14:40 **[Invited]** Nano Interface Control of QD Film for the High Performance QD-LED

저자: 조경상¹, 김태호¹, 이은경¹, 김정우², 최병룡¹, 이상윤², 김종민¹

소속: ¹삼성 종합기술원 Frontier Research Lab,
²삼성 종합기술원 Display Lab

FD3-J-3 14:40-15:10 **[Invited]** Ab Initio Study on the Negative Bias and Illumination Stress Instability of Amorphous Oxide Semiconductors

저자: Ho-Hyun Nahm¹, Yong-Sung Kim¹, and Dae Hwan Kim²

소속: ¹Korea Research Institute of Standards and Science,
²School of Electrical Engineering, Kookmin University

I. MEMS & Sensors 분과

Room E

창의관 (B113)

일 시 : 2월 17일(금) 13:40-15:10

세션명 : [FE3-I] Bio Sensors & Optical MEMS

좌 장 : 정 석(고려대학교), 문성욱(KIST)

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- FE3-I-1 13:40-13:55 Development of High Sensitive Poly Silicon Based Ion-sensitive Field Effect Transistor with Engineered OHA Sensing Membrane for High Stability
저자: 장현준, 배태언, 조원주
소속: 광운대학교 전자재료 공학과
- FE3-I-2 13:55-14:10 나노와이어바이오센서의 단백질전하 직접검출에 미치는 이온농도 효과
저자: 서영태^{1,2}, 최강원¹, 양진아¹, 정석원¹, 이민호¹, 이국녕¹, 성우경¹, 김용권²
소속: ¹전자부품연구원 메디컬 IT융합연구센터, ²서울대학교 전기컴퓨터공학부
- FE3-I-3 14:10-14:25 CMOS-Compatible Inverter-Type Si Nanoribbon Biosensor with High Sensitivity
저자: Jieun Lee¹, Jung Han Lee², Hyeri Jang¹, Mihee Uhm¹, Won Hee Lee¹, Seonwook Hwang¹, Byung-Gook Park², In-Young Chung³, Dong Myong Kim¹, and Dae Hwan Kim¹
소속: ¹School of Electrical Engineering, Kookmin University, ²School of Electrical Engineering and Computer Science, Seoul National University, ³Department of Electronics & Communications Engineering, Kwangwoon University
- FE3-I-4 14:25-14:40 Atmospheric Micro Plasma Induced Inactivation of Bacteria
저자: Lury Lee¹, Sung-Whan Kim², Dong-Eun Lee², Youngmin Kim¹, and Jeong-Heon Cha²
소속: ¹School of Electrical Engineering, Hong-ik University, ²Department of Oral Biology, BK²¹ Project, Oral Science Research Center, Research Center for Orofacial, Hard Tissue Regeneration, Oral Cancer Research Institute, Yonsei University College of Dentistry

- FE3-I-5 14:40-14:55 **Design and Evaluation of Patterned Nanoarray Chips for Sub-diffraction Limited Far-field Microscopy**
저자: 이원주, 김규정, 김동현
소속: 연세대학교 공과대학 전기전자공학부
- FE3-I-6 14:55-15:10 **Development of Fine-Pitch Microbolometer Fabricated by CMOS Compatible Process**
저자: 임성규, 김영수, 경기명, 송명호, 박재홍, 이태중, 김태현, 김희연, 황욱중, 이귀로
소속: 나노융합팩센터 MEMS 사업본부

C. Materials Growth & Characterization 분과

Room F

창의관 (B114)

일 시 : 2월 17일(금) 13:40-15:10

세션명 : [FF3-C] Wide Bandgap Materials

좌 장 : 권순용(울산과학기술대학교), 송진동(KIST)

FF3-C-1 13:40-14:10 **[Invited]** Revisit on Dislocations and Related Defects in Heteroepitaxy:
Polar and Nonpolar GaN and ZnO Cases

저자: Soon-Ku Hong

소속: Department of Materials Science & Engineering and Graduate
School of Green Energy Technology, Chungnam National
University

FF3-C-2 14:10-14:25 Fabrication of InGaN/GaN Green LED

저자: 김성복¹, 배성범¹, 백주희¹, 윤두협¹, 임성목², 손정환², 문영부³,
김현성⁴, 김종배¹

소속: ¹한국전자통신연구원 광무선융합부품연구부, ²(주)제니컴, ³(주)더
리즈, ⁴한양대학교

FF3-C-3 14:25-14:40 Improved Mobility of AlGaIn/GaN HEMT Structure on 6-inch
Silicon(111) by Bowing Parameter

저자: 신종훈, 김준호, 김재무, 김광중, 장태훈

소속: LG 전자 Emerging 연구소 IGBT Part

FF3-C-4 14:40-14:55 The Effect of Si Precursor on the Properties of Atomic Layer
Deposited HfSiO Film

저자: 이승미, 김범용, 지연혁, 은용석, 김춘환, 홍권, 강효상

소속: Memory R&D Division, Hynix Semiconductor Inc.

G. Device & Process Modeling, Simulation and Reliability 분과

Room G

하나스퀘어 (B112)

일 시 : 2월 17일(금) 13:40-15:10

세션명 : [FG3_G] Device Performance & Reliability Issues in Non-Volatile Memories and Advanced Devices

좌 장 : 최재훈(하이닉스반도체), 이재규(삼성전자)

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- FG3_G-1 13:40-14:10 **[Invited]**Development of Stress Memorization Technique Applicable for 20nm Low Power SoC Process
저자: Choongryul Ryou¹, Sang-Su Kim², Yaoqi Dong¹,
ByoungGi Kim¹, Weon-wi Jang¹, Seunghyun Song³, Hongseon Yang³, Uihui Kwon³, Youngdal Lim¹,
Soohun Hong¹, Yoonmoon Park¹, Sada-aki Masuoka¹,
Jae Gon Lee¹, Dong-Won Kim¹, Sang-Pil Sim¹,
Dong Kyun Sohn¹, Jong Shik Yoon¹ and Chilhee Chung¹
소속: ¹Logic TD Team, Semiconductor R&D division, Samsung Electronics Co., Ltd., ²Process Development P/J3, Semiconductor R&D division, Samsung Electronics Co., Ltd., ³CAE Team, Semiconductor R&D division, Samsung Electronics Co., Ltd.
- FG3_G-2 14:10-14:25 **Improvement of Electrical Overstress Robustness of GGNMOS I/O Cells for Timing Controller Application**
저자: Yon-Sup Pang, Youngju Kim, Jinseop Shim, Young-Chul Kim, Taehoon Kim, Kyongjin Hwang, Hyun-Ho Jang, Sookjin Kwon, Leeyeun Hwang, Sung-Bum Park, and Taejong Lee
소속: NVM/Device/ESD, DSD KDC and LDDI PE Teams, MagnaChip Semiconductor
- FG3_G-3 14:25-14:40 **Write Margin Variability and V_{CCmin} projection of 6T SRAM with Double-Gate MOSFETs down to $L_{min}=8nm$**
저자: Boung Jun Lee and Ji-Woon Yang
소속: Department of Electronics and Information Engineering, Korea University
- FG3_G-4 14:40-14:55 **Analysis of Single Poly EEPROM Characteristics on the Multiple Doped**

Floating Gate Structure

저자: JN Eum, YJ Kwon, SK Park, SH Lee, KS Ko, DH Kim, KS Lee,
IW Cho, and KD Yoo

소속: TD Team, M8 Division, Hynix Semiconductor Inc.

FG3_G-5 14:55-15:10

Amorphous Silicon 박막트랜지스터의 Negative Bias Illumination Stress 하에서의 물리적 Parameter 기반 신뢰성 특성분석

저자: 정현광, 공동식, 김용식, 배민경, 김재형, 김우준, 허인석,
이재욱, 김윤혁, 전성우, 조춘형, 김동명, 김대환

소속: School of Electrical Engineering, Kookmin University

A. Interconnect & Package 분과

Room H

하нас퀘어 (B115)

일 시 : 2월 17일(금) 13:40-15:10

세션명 : [FH3-A] 디스플레이용 배선 및 TCO

좌 장 : 손현철(연세대학교)

FH3-A-1 13:40-14:10 **[Invited]**TFT Fabrication by using Soluble Oxide Semiconductor and Gate Insulator

저자: 김정한, 김치완, 김철홍, 채기성, 전명철

소속: LG 디스플레이 R&D 센터

FH3-A-2 14:10-14:25 Effect of Metal Electrode and Annealing Process on the Electrical Performance of Amorphous In-Ga-Zn-O Thin Film Transistor

저자: 이영주¹, 임정열¹, 정성엽¹, 연한울¹, 권장연¹, 이제훈², 주영창¹

소속: ¹Department of Materials Science & Engineering, Seoul National University, ²Samsung Electronics Co., Ltd.

FH3-A-3 14:25-14:40 Ga doped ZnO (GZO) by Atomic Layer Deposition for Transparent Conducting Oxides

저자: Taewook Nam, Won-Seon Lee, and Hyungjun Kim

소속: Yonsei University

FH3-A-4 14:40-15:10 **[Invited]**Transparent Conducting Oxide Thin Films Deposited by Atomic Layer Deposition

저자: Jin-Seong Park

소속: Department of Materials Science and Engineering, Dankook University

Q. Metrology, Inspection, and Yield Enhancement 분과

Room A

창의관 (106)

일 시 : 2월 17일(금) 15:30-16:45

세션명 : [FA4-Q] Q III

좌 장 : 박병천(한국표준과학연구원), 양준모(나노종합팹센터)

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- FA4-Q-1 15:30-16:00 **[Invited]** Non-Visual Defect Inspection (Residues and Charge) for Advanced Process Control and Yield Engineering
저자: Sungjin Cho
소속: Qcept Technologies Inc.
- FA4-Q-2 16:00-16:15 Transmission Electron Microscopy Study on the Microstructural Properties of CoFeB/MgO/CoFeB Magnetic Tunnel Junctions
저자: 전승준¹, 손성규¹, 오장원¹, 유종희¹, 이주희¹, 김국천², 김원¹, 김호정¹, 김창열¹
소속: ¹하이닉스 반도체 분석개발팀, ²하이닉스 반도체 NM공정S팀
- FA4-Q-3 16:15-16:30 고속 검사를 위한 초소형전자칼럼 광학구조 연구
저자: 이영복¹, 오태식¹, 김대욱¹, 안승준¹, 최상국², 진상원², 김영철³, 김호섭¹
소속: ¹선문대학교 정보디스플레이학과, ²씨이비티(주), ³을지대학교
- FA4-Q-4 16:30-16:45 FIB 기법을 이용한 LED-TEM 시편의 정밀제작
저자: 박경진, 유정호, 곽상희, 박중식, 양준모
소속: 나노종합팹센터 특성평가팀

K. Memory (Design & Process Technology) 분과

Room B

창의관 (110)

일 시 : 2월 17일(금) 15:30-16:45

세션명 : [FB4-K] FLASH Memories and New Memory Technologies

좌 장 : 곽동화(삼성전자), 김영희(창원대학교)

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- FB4-K-1 15:30-15:45 **Layer Selection by Multi Level Operation (LSM) of String Select Line in 3D Stacked NAND Flash Memory**
저자: Wandong Kim, Seung-Hyun Kim, Yoon Kim, Se-Hwan Park, Joo Yun Seo, Do-Bin Kim, and Byung-Gook Park
소속: Inter-University Semiconductor Research Center and School of Electrical Engineering and Computer Science, Seoul National University
- FB4-K-2 15:45-16:00 **Erase Speed Enhancement by using SiGe Drain in 3D Stacked NAND Flash Memory**
저자: Wandong Kim, Yoon Kim, Se-Hwan Park, Joo Yun Seo, Do-Bin Kim, Seung-Hyun Kim, and Byung-Gook Park
소속: Inter-University Semiconductor Research Center and School of Electrical Engineering and Computer Science, Seoul National University
- FB4-K-3 16:00-16:15 **Dramatic Increase of Dielectric Constant of Al₂O₃ by Very Light Doping of La and Thermal Treatment and Its Application to Flash Memory Device**
저자: Jong Kyung Park¹, Seok-Hee Lee¹, Ki-Hong Lee², Seung Ho Pyi², and Byung Jin Cho¹
소속: ¹Department of Electrical Engineering, KAIST, ²Hynix Semiconductor Inc.
- FB4-K-4 16:15-16:30 **Tri-states Memory using Ferroelectric-insulator-semiconductor Hetero-junctions for Fifty Percent Increased Data Storage**
저자: Min Hyuk Park, Hyun Ju Lee, Gun Hwan Kim, Yu Jin Kim, Jeong Hwan Kim, Jong Ho Lee, and Cheol Seong Hwang
소속: WCU Hybrid Materials Program, Department of Materials Science and Engineering, Seoul National University

FB4-K-5 16:30-16:45 Analysis of Fringe Field Effects in Nano-Electromechanical (NEM) Nonvolatile Memory Cells

저자: Boram Han and Woo Young Choi

소속: Department of Electronic Engineering, Sogang University

N. VLSI CAD 분과

Room C
창의관 (116)

일 시 : 2월 17일(금) 15:30-16:45

세션명 : [FC4-N] State-of-the-art Low Power SoC Design Methods

좌 장 : 이종은(울산과학기술대학교), 윤성로(고려대학교)

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|---------|-------------|---|
| FC4-N-1 | 15:30-16:00 | [Invited] How to Implement Low Power SOC under 32nm Process
저자: Jung Yun Choi
소속: Design Technology Team, Samsung Electronics Co., Ltd. |
| FC4-N-2 | 16:00-16:30 | [Invited] Clock Gating: Design or Synthesis?
저자: Inhak Han and Youngsoo Shin
소속: Department of Electrical Engineering, KAIST |
| FC4-N-3 | 16:30-16:45 | Power / Area Optimization by Design Window Reduction in Standard-Cell Based Circuits
저자: Hyung-Ock Kim, Jun Seomun, Jea Han Jeon, Jung Yon Choi, Hyo-Sig Won, and Kee Sup Kim
소속: Samsung Electronics Co., Ltd. |

J. Nano-Science & Technology 분과

Room D

창의관 (117)

일 시 : 2월 17일(금) 15:30-16:45

세션명 : [FD4-J] Soft Electronics: Materials, Processes and Devices

좌 장 : 이택희(서울대학교), 김상욱(KAIST)

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- FD4-J-1 15:30-16:00 **[Invited]**Organic Nanowire Printing, Lithography, and Electronics
저자: S.-Y. Min¹, T. S. Kim¹, J. H. Cho², and T.-W. Lee¹
소속: ¹Department of Materials Science and Engineering, Pohang University of Science and Technology, ²Department of Organic Materials and Fiber Engineering, Soongsil University
- FD4-J-2 16:00-16:15 Enhanced Performance of Pentacene Field Effect Transistors with Patterned Graphene Electrodes using Surface Treatments
저자: 이상철¹, 강석주¹, 조건호¹, 최민혁¹, 박우진¹, 윤종원¹, 권태현¹, 강영호¹, 김동유¹, 이병훈¹, 이택희²
소속: ¹광주과학기술원 신소재공학부 나노바이오전자재료공학과, ²서울대학교 물리천문학부
- FD4-J-3 16:15-16:45 **[Invited]**Nanolithography based on Highly Tunable Self-assembly
저자: Jae Won Jeong, Woon Ik Park, and Yeon Sik Jung
소속: Department of Materials Science and Engineering, KAIST

E. Compound Semiconductors 분과

Room E
창의관 (B113)

일 시 : 2월 17일(금) 15:30-16:45

세션명 : [FE4-E] Electronics Devices and Processes III

좌 장 : 민병규(ETRI), 장태훈(LG전자)

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- FE4-E-1 15:30-15:45 **Demonstration of GaN MOSFET using Selectively Re-grown AlGaIn Layer on Source and Drain Regions**
저자: Dong-Seok Kim¹, Chul-Ho Won¹, Kyu-Il Jang¹, Sung-Dal Jung¹, Mi-Kyung Kwon¹, Hee-Sung Kang¹, Ki-Sik Im¹, Ki-Won Kim¹, Chung-Mo Yang¹, Jae-Joon Oh², Jong-Bong Ha², Jai-Kwang Shin², and Jung-Hee Lee¹
소속: ¹School of Electrical Engineering and Computer Science, Kyungpook National University, ²Samsung Advanced Institute of Technology
- FE4-E-2 15:45-16:00 **Improvement of Interfacial quality of Al₂O₃/GaN-MOSFETs by TMAH Treatment**
저자: Ki-Won Kim, Sung-Dal Jung, Mi-Kyung Kwon, Ki-Sik Im, Dong-Seok Kim, Hee-Sung Kang, and Jung-Hee Lee
소속: School of Electrical Engineering & Computer Science, Kyungpook National University
- FE4-E-3 16:00-16:15 **이중 전계판 구조를 가지는 고내압 AlGaIn/GaN-on-Si HFET에 대한 연구**
저자: 이호중, 이재길, 차호영
소속: 흥익대학교 전자전기공학부
- FE4-E-4 16:15-16:30 **Effects of Microstructural Changes on Electrical Properties of Ti/Al based Ohmic Contacts on N-face n-GaN**
저자: Buem Joon Kim, Yang Hee Song, Jun Ho Son, Hak Ki Yu, and Jong-Lam Lee
소속: Division of Advanced Materials Science and Department of Materials Science and Engineering, Pohang University of Science and Technology

FE4-E-5 16:30-16:45 Reduction in Schottky Barrier Height of AlGaN-based SBD with In-situ Deposited Silicon Carbon Nitride (SiCN) Cap Layer

저자: Jae-Hoon Lee¹, Young-Sun Kwak¹, Jae-Hyun Jeong¹, Heon-Bok Lee¹, Jong-Kyu Ryu¹, Ki-Se Kim¹, and Jung-Hee Lee²
소속: ¹Power Research Group, Samsung LED Co., Ltd., ²School of Electronic Engineering & Computer Science, Kyungpook National University

C. Materials Growth & Characterization 분과

Room F
창의관 (B114)

일 시 : 2월 17일(금) 15:30-16:45

세션명 : [FF4-C] Nanostructured Electronics

좌 장 : 박진섭(한양대학교), 김문덕(충남대학교)

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- FF4-C-1 15:30-16:00 **[Invited]** Characterization of RTN (Random Telegraph Noise) in Semiconductor Devices
저자: Nam-Hoon Kim, Sung-Min Joe, Ju-Wan Lee, and Jong-Ho Lee
소속: Electrical Engineering and Computer Science and Inter-University Semiconductor Research Center (ISRC), Seoul National University
- FF4-C-2 16:00-16:15 **Diamond Shape eSiGe Source/Drain for High Performance Sub-28nm PMOSFET**
저자: Hoi Sung Chung, Myung Sun Kim, Dong Hyuk Kim, Geo Myung Shin, Yong Ju Lee, Yu Bin Kim, Dong Suk Shin, Moon Han Park, Ja Hum Ku, and Nae-In Lee
소속: System LSI Division, Samsung Electronics Co., Ltd.
- FF4-C-3 16:15-16:30 **3차원 원자탐침 전자현미경을 이용한 Si 기판에 패터닝된 Fin구조 내 도핑 원소분석**
저자: 김보화¹, 박성민¹, 구길호¹, 박윤백³, 박찬경^{1,2}
소속: ¹포항공과대학교 신소재공학과, ²나노기술직접센터(NCNT), ³하이닉스 연구소 R&D기반기술그룹 분석개발팀
- FF4-C-4 16:30-16:45 **Morphology Controlled Growth of 1D Si Nanostructures by Exploiting Nanoscale Surface Diffusion for Anti-reflector**
저자: J. Yi and W. I. Park
소속: Department of Material Science & Engineering, Hanyang University

G. Device & Process Modeling, Simulation and Reliability 분과

Room G

하나스퀘어 (B112)

일 시 : 2월 17일(금) 15:30-16:45

세션명 : [FG4-G] Device Characterization

좌 장 : 이상기(동부하이텍), 조인욱(하이닉스반도체)

-
- FG4-G-1 15:30-16:00 **[Invited]** Low-frequency Noise in Precision Analog Components
저자: Badih El-Kareh
소속: Dongbu HiTek
- FG4-G-2 16:30-16:45 **Active Layer Thickness-dependent Parasitic Resistance Effect in Low Frequency Noise with Subgap Density-of-states in Amorphous Indium-gallium-zinc-oxide TFTs**
저자: Hagyoul Bae, Dongsik Kong, Ja Sun Shin, Dayeon Yun, Euiyeon Hong, Hyojoon Seo, Hyunjun Choi, Jieun Lee, Hyun-Kwang Jung, Minkyung Bae, Yongsik Kim, Woojoon Kim, Dae Hwan Kim, and Dong Myong Kim
소속: School of Electrical Engineering, Kookmin University
- FG4-G-3 16:00-16:15 **Differential Ideality Factor Technique and Extraction of Subgap Density-of-states in Amorphous InGaZnO Thin-Film Transistors**
저자: Minkyung Bae, Daeyoun Yun, Yongsik Kim, Dongsik Kong, Hyunkwang Jeong, Jaeman Jang, Woojoon Kim, Inseok Hur, Jaehyeong Kim, Yun Hyeok Kim, Jaewook Lee, Sungwoo Jun, Choon Hyeong Jo, Dae Hwan Kim, and Dong Myong Kim
소속: School of Electrical Engineering, Kookmin University
- FG4-G-4 16:15-16:30 **Characterization of Intrinsic Field Effect Mobility in a-IGZO Thin-film Transistors through the De-embedding the Parasitic Source and Drain Resistance Effects**
저자: Inseok Hur, Hagyoul Bae, Minkyung Bae, Yongsik Kim, Dongsik Kong, Hyunkwang Jeong, Jaeman Jang, Jaehyeong Kim, Woojoon Kim, Yun Hyeok Kim, Jaewook Lee, Sungwoo Jun, Choon Hyeong Jo, Dong Myong Kim, and Dae Hwan Kim
소속: School of Electrical Engineering, Kookmin University

A. Interconnect & Package 분과

Room H

하나스퀘어 (B115)

일 시 : 2월 17일(금) 15:30-16:45

세션명 : [FH4-A] 배선용 원자층 증착공정

좌 장 : 김수현(영남대학교), 박진성(단국대학교)

-
- FH4-A-1 15:30-16:00 **[Invited]** Atomic Layer Deposition of Ru Thin Films with Enhanced Nucleations using Various Ru(0) Metallorganic Precursors and Molecular O₂
저자: Soo-Hyun Kim
소속: School of Materials Science and Engineering, Yeungnam University
- FH4-A-2 16:00-16:15 **Cu 배선 확산방지막용 ALD Ru박막의 계면접착력 평가**
저자: 김정규¹, 천태훈², 김수현², 박영배¹
소속: ¹안동대학교 신소재공학부 청정에너지 소재기술연구센터, ²영남대학교 신소재공학부
- FH4-A-3 16:15-16:30 **Atomic Layer Deposition of Ru and Ru-N Thin Films using N₂/H₂ Plasma as a Reactant**
저자: Ki-Yeung Mun¹, Tae Eun Hong², Taehoon Cheon¹,
Soo-Hyun Kim¹, Byoung-Yong Lim³, and Sunjung Kim³
소속: ¹School of Materials Science and Engineering, Yeungnam University, ²Busan Center, Korea Basic Science Institute, ³School of Materials Science and Engineering, University of Ulsan
- FH4-A-4 16:30-16:45 **Atomic Layer Deposition of Ru Thin Films using a Novel Ru(0) Metallorganic precursor as a Seed Layer for Copper Metallizations**
저자: Seungmin Yeo¹, Sang-Hyeok Choi¹, Taehoon Cheon¹, Soo-Hyun Kim¹, Byoung-Yong Lim², and Sunjung Kim²
소속: ¹School of Materials Science and Engineering, Yeungnam University, ²School of Materials Science and Engineering, University of Ulsan

Room I

하나스퀘어 (아프리움)

일 시 : 2월 17일(금) 09:30-12:35

세션명 : [FP1] Poster I

I. MEMS & Sensors 분과

- FP1-1 09:30-12:35 Novel Biosensor based on MOSFET-BJT Hybrid Mode of Gated Lateral BJT for C-reactive Protein Detection
저자: H. Yuan, B. Wang, S. H. Yeom, H. C. Kwon, and S. W. Kang
소속: School of Electrical Engineering and Computer Science, Kyungpook National University
- FP1-2 09:30-12:35 Electrical Properties of Silicon Nanowire Integrated Highly Sensitive Electrolyte-insulator-semiconductor (EIS) Bio-chemical Sensor
저자: Jinyong Oh¹, M. Saif Islam¹, Hyun-June Jang², Tae-On Bae², and Won-Ju Cho²
소속: ¹University of California Davis, ²Kwangwoon University
- FP1-3 09:30-12:35 Single Photon Detection for Quantum Cryptography Applications
저자: A. Bouzid, J. B. Park, and S. Moon
소속: Nanophotonics Research Center, Korea Institute of Science and Technology
- FP1-4 09:30-12:35 MEMS 공정을 이용한 이중빔 PZT 외팔보 에너지수확소자의 제작 및 특성
저자: 김문근^{1,2}, 황범석¹, 정재화¹, 민남기¹, 이상균², 양일석², 권광호¹
소속: ¹고려대학교, ²한국전자통신연구원
- FP1-5 09:30-12:35 A RF MEMS Tunable Capacitor with Large Tuning Range using Aluminum Nitride Film and Two Air Gap Structure
저자: W. J. Jang, S. J. Cheon, and J. Y. Park
소속: Micro/Nano Devices and Packaging Lab. Department of Electronic Engineering, Kwangwoon University

D. Thin Film Process Technology **분과**

FP1-6 09:30-12:35 **Growth of Conductive SrRuO_x Films by Combined CVD/ALD Process**
저자: Jeong Hwan Han, Woongkyu Lee, Woojin Jeon, and Cheol Seong Hwang
소속: WCU Hybrid Materials Program, Department of Materials Science and Engineering and Inter-university Semiconductor Research Center, Seoul National University

FP1-7 09:30-12:35 **Resistive Switching Characteristics in HfO₂ Thin Films Depending on the Crystalline Structure**
저자: 윤정호, 정형석, 이민환, 김건환, 송슬지, 석준영, 윤경진, 황철성
소속: 서울대학교 재료공학부 유전박막연구실

FP1-8 09:30-12:35 **The Advanced Characteristics of Thermal CVD Silicon Oxide in a Single-wafer Chamber**
저자: 이웅, 김용석, 신현진, 이우성, 임현형, 황기현, 신유균
소속: Semiconductor R&D Center, Samsung Electronics Co., Ltd.

FP1-9 09:30-12:35 **Development of High Performance and High Stability Transistors without Junctions**
저자: 정승민¹, 오진용², M. Saif Islam², 조원주¹
소속: ¹광운대학교, 전자재료공학과, ²Department of Electrical and Computer Engineering, University of California Davis

FP1-10 09:30-12:35 **저온 스퍼터증착법을 이용한 플렉서블 적층 저항변화 메모리의 제작 및 특성 연구**
저자: 한용¹, 조경아², 박석형², 김상식^{1,2}
소속: ¹고려대학교 나노반도체공학과, ²고려대학교 전기전자전파공학과

FP1-11 09:30-12:35 **Mn doped ZnO_xS_{1-x} 저항변화 메모리소자 특성에 미치는 전극물질의 영향**
저자: 한용¹, 조경아², 윤정권², 김상식^{1,2}
소속: ¹고려대학교 나노반도체공학과, ²고려대학교 전기전자전파공학과

- FP1-12 09:30-12:35 Effect of Oxygen Plasma Annealing on Electrical Properties of Sol-gel Processed ZrO₂ Films**
저자: Dong-Hyoub Kim, Musarrat Hasan, Tae-Young Jang, Jungwoo Kim, Jun Suk Chang, Manh Cuong Nguyen, and Rino Choi
소속: Inha University
- FP1-13 09:30-12:35 Dipole-induced Conduction Process Change in La-incorporated Hafnium-based Dielectric**
저자: Tae-Young Jang, Dong-Hyoub Kim, Jungwoo Kim, Jun Suk Chang, Cuong Nguyen Manh, Musarrat Hasan, and Rino Choi
소속: Department of Materials Science and Engineering, Inha University
- FP1-14 09:30-12:35 Impacts of Ar/N₂ Flow rates of Sputtered TiN Metal Gate on Electrical Properties in Gate-first Processed MOS Devices**
저자: Dongjun Yoo, Seung-Chan Heo, and Changhwan Choi
소속: Division of Materials Science and Engineering, Hanyang University
- FP1-15 09:30-12:35 Low-temperature Atomic Layer Deposition of Cobalt Oxide Thin Films using Cyclopentadienylcobalt Dicarbonyl and Ozone**
저자: 최규하¹, 한별¹, 박정우², 이원준¹
소속: ¹세종대학교 나노신소재공학과, ²한솔케미칼 박막재료팀
- FP1-16 09:30-12:35 Growth of Zn-Sn-O Films using by Plasma Enhanced Atomic Layer Deposition for TFTs Applications**
저자: B. K. Lee^{1,2}, D. C. Moon¹, E.-A. Jung¹, S. S. Lee¹, B. K. Park¹, J. H. Hwang², T.-M. Chung¹, C. G. Kim¹, and K. S. An¹
소속: ¹Thin Film Materials Research Team, Korea Research Institute of Chemical Technology, ²Department of Material Science and Engineering, Hongik University
- FP1-17 09:30-12:35 ZnO Nano-wire Deposited by Metal Organic Chemical Vapor Deposition (MOCVD) for Anti Reflection Coating (ARC) of Si Solar Cell**
저자: 최은석¹, 장삼석¹, 임소영², 탁성주¹, 김동환¹, 변동진¹
소속: ¹Department of Materials Science and Engineering, Korea

University, ²Department of Nano Semiconductor Engineering,
Korea University

FP1-18 09:30-12:35 Influence of Argon Neutral Particle Beam of High Energy in the Neutral Particle Beam Sputtering System Assisted the Change of Structural Properties on the Amorphous Carbon Film

저자: DongHyeok Lee¹, JinNyoung Jang¹, KwangHo Kwon², SukJae You³, BonJu Lee³, and MunPyo Hong¹

소속: ¹Department of Display and Semiconductor Physics, Korea University, ²Department of Control and Instrumentation Engineering, Korea University, ³National Fusion Research Institute

J. Nano-Science & Technology 분과

FP1-19 09:30-12:35 Fabrication of Silicon Nanowire Based Thermoelectric Device and Temperature Sensor Calibration

저자: Wonchul Choi^{1,2}, Youngsam Park¹, Younghoon Hyun¹, Taehyoung Zyung¹, Jaehyun. Kim^{1,3}, Mincheol Shin², and Moongyu Jang^{1,3}

소속: ¹Convergence Components & Material Research Lab., Electronics and Telecommunications Research Institute, ²Department of Electrical Engineering, KAIST, ³Department of Advanced Device Technology, UST

FP1-20 09:30-12:35 Fabrication of Sub-30nm Pillar Array by Oxygen Plasma Treatment

저자: Bongho Kim¹, Daehong Kim¹, Jihun Kwon¹, Sungwoo Chun¹, Seonjun Choi¹, and Seung-Beck Lee^{1,2,3}

소속: ¹Department of Electronic Engineering, Hanyang University, ²Department of Nanoscale Semiconductor Engineering, Hanyang University, ³Institute of Nano Science and Technology, Hanyang University

FP1-21 09:30-12:35 Thin Film Fabrication and Simultaneous Reduction of Deposited Graphene Oxide Platelets by Electrophoretic Deposition

저자: Sung Jin An

소속: School of Advanced Materials and Systems Engineering, Kumoh National Institute of Technology

- FP1-22 09:30-12:35 **Ion-gel Gate Dielectrics for Arrayed Si Nanowires Field Effect Transistors**
저자: 최진용, 조경아, 김상식
소속: 고려대학교 전기전자전파공학과
- FP1-23 09:30-12:35 **Fabrication of Beta-phase Poly(9,9-dioctylfluorene) Nanowire Array using Direct Printing Method**
저자: Jangmi Back and Myung M. Sung
소속: Department of Chemistry, Hanyang University
- FP1-24 09:30-12:35 **Graphene Sheets as P-type Transparent Conducting Electrodes in GaN Light Emitting Diodes**
저자: Jung Min Lee, Hae Yong Jeong, and Won Il Park
소속: Division of Materials Science and Engineering, Hanyang University
- FP1-25 09:30-12:35 **Fabrication of Vapor Phase Polymerized PEDOT Nanowire Arrays using Liquid-bridge-mediated Nanotransfer Molding**
저자: Boram Cho, Hyun S. Oh, and Myung M. Sung
소속: Department of Chemistry, Hanyang University
- FP1-26 09:30-12:35 **N-type Carbon Nanotube Network Device Based on Tunneling through SnO₂**
저자: Young Jun Heo, Jun Ho Cheon, Seok Ha Lee, Jaeheung Lim, and Young June Park
소속: School of Electrical Engineering, Seoul National University
- FP1-27 09:30-12:35 **The Predicted Crystal Structure of Li₄C₆O₆, an Organic Cathode Material for Li-ion Batteries: First-principles Multi-scale Computational Study**
저자: Dong-Hwa Seo¹, Hyungjun Kim², Haegyeom Kim¹, William A. Goddard III^{2,3}, and Kisuk Kang¹
소속: ¹Department of Materials Science and Engineering, Seoul National University, ²Graduate School of EEWS, KAIST, ³Materials and Process Simulation Center, California Institute of Technology

- FP1-28 09:30-12:35 Fabricated Various Metallic Nano-sized Pattern using Ag Ink Printing Technique**
저자: 오상철¹, 신주현², 김진승², 김양두³, 이 현^{1,2,3}
소속: ¹고려대학교 나노반도체공학과, ²고려대학교 신소재공학과, ³고려대학교 바이오-마이크로 시스템 협동과정
- FP1-29 09:30-12:35 A Graphene/Nanocluster Hybrid Nanomaterial-based Gas Sensor**
저자: I.-S. Kang and C. W. Ahn
소속: National Nanofab Center, Korea Advanced Institute of Science and Technology
- FP1-30 09:30-12:35 Color Tunable OLEDs using Localized Surface Plasmons**
저자: Ilhwan Lee, Kihyon Hong, Sungjun Kim, and Jong-Lam Lee
소속: Department of Materials Science and Engineering and Division of Advanced Materials Science, Pohang University of Science and Technology
- FP1-31 09:30-12:35 Analytic Model of Spin-Torque Oscillators(STO) for Circuit-level Simulation**
저자: 안소라¹ 임혜인¹, 서수만², 이경진², 신형순¹, 이승준¹
소속: ¹이화여자대학교 전자공학과, ²고려대학교 신소재공학과
- FP1-32 09:30-12:35 Porosity Modulated Silicon Nanowires**
저자: Jungkil Kim^{1,2}, and Woo Lee^{1,2}
소속: ¹Korea Research Institute of Standards and Science, ²Department of Nano Science, University of Science and Technology
- N. VLSI CAD 분과**
- FP1-33 09:30-12:35 Thermal Modeling of 3D Stacked MLC NAND Flash Memory**
저자: 김동기, 유승주, 이승구
소속: 포항공과대학교 전자전기공학과
- FP1-34 09:30-12:35 System Model for CPU/GPU Architecture**

저자: 이성광¹, 유승주¹, 정재웅², 우동혁², 김대현²
소속: ¹포항공과대학교 전자전기공학과, ²Intel Corporation

FP1-35 09:30-12:35 High-throughput Double-binary MAP Decoder with Reduced Memory Requirement

저자: 김지훈
소속: 충남대학교 전자공학과

FP1-36 09:30-12:35 Promoting Data Reuse on Shared Memory of Hybrid System

저자: Toan X. Mai, YeonghunJeong, and Jongeun Lee
소속: School of Electrical and Computer Engineering, Ulsan National Institute of Science and Technology

FP1-37 09:30-12:35 쓰기 데이터의 특성 파악을 통한 Wear-leveling

저자: 유태희, 박상훈, 서혁준, 정의영
소속: 연세대학교 전기전자공학과

FP1-38 09:30-12:35 Interleaved Garbage Collection Schemeusing Dynamic Channel/Way Allocation for Solid-state Drive

저자: 김동건, 박상훈, 서혁준, 정의영
소속: 연세대학교 전기전자공학과

Q. Metrology, Inspection, and Yield Enhancement 분과

FP1-39 09:30-12:35 초음속 나노입자빔을 이용한 실리콘 웨이퍼 표면오염입자(10nm) 제거 실험

저자: 김인호, 이진원
소속: 포항공과대학교 기계공학과

FP1-40 09:30-12:35 Characterization of Overlay Error Induced by Film Stress using Local Stress Monitoring Tool

저자: C. H. Lee¹, J. T. Kim¹, J. H. Kim¹, H. Y. Yoo¹, I. K. Han¹, and W. S. Yoo²
소속: ¹Hynix Semiconductor Inc., ²WaferMasters, Inc.

FP1-41 09:30-12:35 The Pattern Wiggling CD Metrology using Flexible Scan & Dense Function

저자: 김종태¹, 이창환¹, 유형원¹, 한일근¹, 고경보², 곽동수³
소속: ¹하이닉스 반도체 MI팀, ²하이닉스 반도체 DRAM공정AP팀,
³Hitachi High-Technologies Corporation

- FP1-42 09:30-12:35 Electron Beam Inspection of Cell Mat Edge using Image Averaging and Comparison Metho**
저자: G. Kwon¹, J. H. Oh¹, D. Y. Mun¹, J. C. Jo², J. S. Koo², M. Nozoe², T. Ninomiya², T. Hiroi², H. Okuda², and H. W. Yoo¹
소속: ¹Hynix Semiconductor Inc.,
²Central Research Laboratory, Hitachi High-Technologies Corporation
- FP1-43 09:30-12:35 The Measurement of OCD (Optical critical dimension) for Yield Enhancement at Edge Die**
저자: Seok Park, Won Sik Yun, Chang Hwan Lee, Sung Su Kim, Hyung Won Yoo, and Il Keoun Han
소속: Hynix Semiconductor Inc.
- FP1-44 09:30-12:35 The MASK CD Control (CDC) using OCD applications**
저자: Hyun Chul Shin, Seok Park, Won Sik Yun, Chang Hwan Lee, Hyung Won Yoo, and Il Keoun Han
소속: Hynix Semiconductor Inc.
- FP1-45 09:30-12:35 The In-Line Monitoring Method of ZAZ Thickness Using WD-XRF**
저자: Jun Soo Kim, Sang Hoon Son, Shin Wang Ju, Hyung Won Yoo, and Il Keoun Han
소속: Hynix Semiconductor Inc.
- FP1-46 09:30-12:35 Substrate Materials Dependent Growth Characteristics of the Initial Stage of ALD Ruthenium Films using Synchrotron Radiation X-ray Scattering**
저자: Y. J. Park¹ and D. R. Lee²
소속: ¹Pohang Accelerator Laboratory, Pohang University of Science and Technology, ²Department of Physics, Soongsil University
- FP1-47 09:30-12:35 Improvement of Measurement Resolution for Determining Geometrical Thickness of a Silicon Wafer using a Femtosecond Pulse Laser**
저자: 맹새름^{1,3}, 박정재¹, 진종한^{1,2}, 김재완^{1,2}, 강주식^{1,2}, 김종안¹, 오병성³

소속: ¹한국표준과학연구원 길이센터, ²과학기술연합대학원대학교,
³충남대학교 물리학과

FP1-48 09:30-12:35

다결정성텅스텐 나노팁의 저전압 전계방출 안정성 평가

저자: 정재은, 안상정, 박창준, 김주황, 송운, 김달현, 배문섭, 이확주,
조양구

소속: 한국표준과학연구원 나노이미징기술센터

Room I

하나스퀘어 (아프리움)

일 시 : 2월 17일(금) 13:40-16:45

세션명 : [FP2] Poster II

B. Patterning 분과

- FP2-1 13:40-16:45 Hydrogen Plasma Characteristics by Cylindrical Inductively Coupled Plasma for Photoresist Strip Process
저자: 양승국, 강정현, 조주형, 이성욱, 조정희, 채희선
소속: 피에스케이(주) 연구소
- FP2-2 13:40-16:45 AlGaInP기반 LED에서 공기 층 Hybrid DBR구조 삽입을 통한 발광 효율 향상에 관한 연구
저자: 류호성^{1,2}, 박준모^{1,3}, 백종협¹, 곽준섭, 오화섭¹
소속: ¹한국광기술원 LED소자센터, ²순천대학교 WCU인쇄전자공학과, ³전남대학교 물리학과
- FP2-3 13:40-16:45 Investigation on Etch Characteristics of Magnetic Tunnel Junction Stacks in a CH₄/O₂/ArPlasma
저자: Tea Young Lee, Eun Ho Kim, and CheeWon Chung
소속: Department of Chemical Engineering, Inha University
- FP2-4 13:40-16:45 Inductively Coupled Plasma Reactive Ion Etching of MgO Thin Films in CH₄/Ar Plasma
저자: Tea Young Lee, Eun Ho Kim, Il Hoon Lee, and Chee Won Chung
소속: Department of Chemical Engineering, Inha University
- FP2-5 13:40-16:45 용매 증발 제어를 통한 고분자 복합 소재의 non-lithography 패터닝 기술
저자: 정희준, 박철민
소속: 연세대학교 신소재 과학과
- FP2-6 13:40-16:45 Inductively Coupled Plasma Effect on Graphene Field Effect Transistor
저자: Y. D. Lim, D. Y. Lee, and W. J. Yoo
소속: Department of Nano Science and Technology, Sungkyunkwan University

E. Compound Semiconductors 분과

- FP2-7 13:40-16:45 **Influence of Series Resistance and Interface State Density on Electrical Characteristics of Ru/Ni/n-GaN Schottky Diode**
저자: M. Siva Pratap Reddy¹, V. Rajagopal Reddy², and Jung-Hee Lee¹
소속: ¹School of Electrical Engineering & Computer Science, Kyungpook National University, ²Department of Physics, Sri Venkateswara University
- FP2-8 13:40-16:45 **Drain Field Plate를 통한 AlGaIn/GaN HEMT의 Off-state Breakdown Voltage 특성 개선에 관한 연구**
저자: 안호정¹, 최우진¹, 박봉렬², 차호영², 서광석¹
소속: ¹서울대학교 전기컴퓨터공학과, ²홍익대학교 전자전기공학과
- FP2-9 13:40-16:45 **Sapphire Substrate 밑면에 성장시킨 ZnO Nanorods의 LED 성능에 미치는 영향**
저자: 진주, 류버들, 한민, 김현규, 김희윤, 박재영, 홍창희
소속: 전북대학교 반도체 화학공학과
- FP2-10 13:40-16:45 **BCl³ ICP 건식 식각 공정으로 게이트 리세스한 0.25 μ m T-gate AlGaIn/GaN/SiC HEMT 소자 제작 및 특성**
저자: 송인협^{1,2}, 장경욱¹, 안호균², 민병규², 임종원², 강동민², 김성일², 장우진², 이종민², 윤형섭², 문재경²
소속: ¹한서대학교 신소재공학과, ²한국전자통신연구원 RF융합부품연구팀
- FP2-11 13:40-16:45 **Deep Level Defects in InGaIn/GaN Blue Light Emitting Diode**
저자: P. Koteswara Rao¹, Byungguon Park¹, Sang-Tae Lee¹, Moon-Deock, Kim¹, Jae-Eung Oh², and Song-Gang Kim³
소속: ¹Department of Physics, Chungnam National University, ²School of Electrical and Computer Engineering, Hanyang University, ³Department of Information and Communications, Joongbu University
- FP2-12 13:40-16:45 **Effect of Gate Leakage Current on AlGaIn/GaN HEMTs with Electron Beam Irradiation**
저자: Seung Kyu Oh, S. M. Wie, and Joon Seop Kwak

소속: Department of Printed Electronics Engineering, Suncheon National University

FP2-13 13:40-16:45 LED Light Extraction Efficiency Study of GaN Based Light Emitting Diodes using by Various Ion Implanted Current Blocking Layer

저자: Y. D. Kim, M. J. Park, and J. S. Kwak

소속: Department of Printed Electronics Engineering, Suncheon National University

C. Materials Growth & Characterization 분과

FP2-14 13:40-16:45 Photoluminescence and Dielectric Function of Cuprous Oxide Thin Films

저자: Jun-Woo Park¹, Hyungkeun Jang¹, Sung Kim¹, Suk-Ho Choi¹, Joongoo Kang², Su-Huai Wei², and Hosun Lee¹

소속: ¹Department of Applied Physics, Kyung Hee University, ²National Renewable Energy Laboratory

FP2-15 13:40-16:45 Homoepitaxial Growth of 4H-SiC on Carbon-Face Substrate using BTMSM

저자: Hun Hee Lee, Han Seok Seo, Jeong Hyuk Yim, Do Hyun Lee, Changhyun Kim, and Hyeong Joon Kim

소속: Department of Materials Science and Engineering, Seoul National University

FP2-16 13:40-16:45 Structural Properties of Nonpolar A-plane Mg_xZn_{1-x}O Films on R-plane Sapphire Substrates by Plasma-assisted Molecular Beam Epitaxy

저자: S. K. Han¹, H. S. Lee¹, D. S. Lim², S. K. Hong^{1,2}, M. H. Jung³, J. Y. Lee³, and T. Yao⁴

소속: ¹Department of Advanced Materials Engineering, Chungnam National University, ²Graduate School of Green Energy Technology, Chungnam National University, ³Department of Materials Science and Engineering, KAIST, ⁴Center for Interdisciplinary Research, Tohoku

FP2-17 13:40-16:45 Influence of Temperature on Structural, Optical Properties and Chemical Bonding Energy of TiO₂ Thin Films Grown on Glass Substrate by PLD

저자: 빈민욱¹, 이원재¹, 최은호², 유영조²

소속: ¹동의대학교 융합부품공학과,

²삼성 코닝정밀소재 에너지 소재 Labortory

- FP2-18 13:40-16:45 Ni-assisted, Large-area Graphene Growth using Rapid Thermal Annealing**
저자: Jae Hwan Chu¹, Jinsung Kwak¹, Tae-Yang Kwon¹, Soon-Dong Park¹, Heungseok Go², Sung Youb Kim¹, Kibog Park², and Soon-Yong Kwon^{1,2}
소속: ¹School of Mechanical and Advanced Materials Engineering, Ulsan National Institute of Science and Technology, ²School of Electrical and Computer Engineering, Ulsan National Institute of Science and Technology
- FP2-19 13:40-16:45 2-step ELOG of GaN on C-plane Sapphire using Carbonized PR Mask**
저자: Sungwook Moon¹, Sang-il Kim², Samseok Jang², Jungyeop Hong¹, Junhyuck Kwon², and Dongjin Byun^{1,2}
소속: ¹Department of Nano-photonics, Korea University, ²Department of Material Science and engineering, Korea University
- FP2-20 13:40-16:45 Improved Crystalline Quality of Si-doped a-plane GaN using Higher Initial Growth Pressure**
저자: Keun Man Song¹, Jong Min Kim¹, Chan Soo Shin¹, Chul Gi Ko¹, Hyun Koun Cho², Dae Ho Yoon², Sung Min Hwang³, and Hogyoung Kim⁴
소속: ¹Korea Advanced Nano Fab Center, ²School of Advanced Materials Science and Engineering, Sungkyunkwan University, ³Korea Electronics Technology Institute, ⁴College of Humanities and Sciences
- FP2-21 13:40-16:45 Nucleation and Growth of GaN Compound on Various Powders**
저자: 흥성기¹, 이효종¹, 박진섭², 조명환³, and Takafumi Yao³
소속: ¹Materials Science and Engineering, Dong-A University, ²Department of Electronic Engineering, Hanyang University, ³Institute for Materials Research, Tohoku University
- FP2-22 13:40-16:45 Growth of GaN using Patterned Metal Mask by Metal-organic Chemical Vapor Deposition**
저자: J. Park¹, D. Moon², S. Park², S. H. Park², and E. Yoon²

소속: ¹Department of Electronic Engineering, Hanyang University,
²Department of Materials Science and Engineering, College of
Engineering, Seoul National University

FP2-23 13:40-16:45 Growth of Monolayer Graphene from Solid Carbon Source using Rapid Thermal Annealing

저자: J. Kwak¹, J. H. Chu¹, T.-Y. Kwon¹, S.-D. Park¹, S. Y. Kim¹, K. Park², and S.-Y. Kwon^{1,2}

소속: ¹School of Mechanical and Advanced Materials Engineering, Ulsan National Institute of Science and Technology, ²School of Electrical and Computer Engineering, Ulsan National Institute of Science and Technology

FP2-24 13:40-16:45 Investigation of Crystallization Procedures and Crystal Structures of Nitrogen Doped GeSb Phase Change Film

저자: Hyung Keun Kim and Doo jin Choi

소속: Department of Material Science and Engineering, Yonsei University

FP2-25 13:40-16:45 Fabrication of Vertically Aligned GaN/air-gap Mmicrostructures using Ddoping Selective Electrochemical Etching

저자: Ah Hyun Park, Yong Seok Lee, Hyun Jeong, Tae Hoon Seo, Kang Jea Lee, and Eun Kyung Suh

소속: School of Semiconductor and Chemical Engineering, Semiconductor Physics Research Center, Chonbuk National University

FP2-26 13:40-16:45 Structural and Electrical Properties of Nano-crystalline Graphite Layer on 6H-SiC Formed by Direct Electron Beam Irradiation

저자: Heung Seok Go¹, Jinsung Kwak², Youngeun Jeon¹, Bum-Kyu Kim³, Nam Kim⁴, Jae-Hyun Ko⁵, Sung Youb Kim², Byung Cheol Lee⁶, Hyun Suk Kang⁶, Soon-Yong Kwon², and Kibog Park¹

소속: ¹Electrical and Computer Engineering, Ulsan National Institute of Science and Technology (UNIST), ²Mechanical and Advanced Materials Engineering, Ulsan National Institute of Science and Technology (UNIST), ³Physics, Chonbuk National University, ⁴Division of Convergence Technology, Korea Research Institute of Standards and Science, ⁵Physics, Hallym University, ⁶Quantum Optics Lab, Korea Atomic Energy Research Institute

- FP2-27 13:40-16:45 **Growth of InP/InGaP Quantum Structure for the 808-nm Wavelength Emission**
저자: S. Y. Kim^{1,2}, E. H. Lee¹, J. D. Song¹, I. K. Han¹, J. I. Lee¹, and T. W. Kim²
소속: ¹Nano Photonics Research Center, Korea institute of Science and Technology, ²Division of Electronics and Computer Engineering, Hanyang University
- FP2-28 13:40-16:45 **Molecular Beam Epitaxy를 이용한 Large Droplet Island 성장**
저자: 이은혜¹, 송진동¹, 김수연¹, 배민환¹, 한일기¹, 장수경², 이정일¹
소속: ¹한국과학기술연구원 나노포토닉스센터, ²연세대학교 물리학과
- FP2-29 13:40-16:45 **Enhancement of Emission from InGaN/GaN Multiple Quantum Wells via Surface Plasmon Resonance**
저자: Kyoung Su Lee, Seon Pil Kim, and Eun Kyu Kim
소속: Quantum-Function Research Lab. and Department of Physics, Hanyang University
- K. Memory (Design & Process Technology) 분과**
- FP2-30 13:40-16:45 **A Novel Cross-bar Array Scheme to Suppress Sneak Path Current in Memory Operation**
저자: Jun Yeong Seok, Gun Hwan Kim, Seul Ji Song, Jung Ho Yoon, Kyung Jin Yoon, Min Hwan Lee, and Cheol Seong Hwang
소속: WCU Hybrid Materials Program, Department of Materials Science and Engineering and Inter-university Semiconductor Research Center, Seoul National University
- FP2-31 13:40-16:45 **ZnO 기반의 저항 변화 메모리의 스위칭 메커니즘 및 기억유지 특성 연구**
저자: 김희동, 안호명, 서유정, 김경현, 송민영, 이동명, 김태근
소속: 고려대학교 전기전자전파공학과
- FP2-32 13:40-16:45 **Bipolar Switching Behavior of ZnO Thin Films Deposited by Metal Organic Chemical Vapor Deposition using Different Growth Temperature**
저자: Yim So Young¹, Lee Jong-Han², Samseok Jang², Lee Do Han², Tae-Geun Seong¹, Sahm Nahm^{1,2}, and Dongjin Byun²

소속: ¹Department of Nano Semiconductor Engineering, Korea University, ²Department of Materials Science and Engineering, Korea University

- FP2-33 13:40-16:45 Ion Beam Etching of Sub-30nm Scale Perpendicular-MTJ for Reducing by-product and Damage of Sidewall.**
저자: Daehong Kim¹, Bongho Kim¹, Sungwoo Chun¹, Jihun Kwon¹, Seonjun Choi¹, and Seung-Beck Lee^{1,2}
소속: ¹Department of Electronic Engineering, Hanyang University, ²Institute of Nano Science and Technology, Hanyang University
- FP2-34 13:40-16:45 Resistive Switching Properties of TaOx with a Variety of Reactive Metal**
저자: 송성호, 양민규, 김재혁, 성동준, 주현수, 김은미, 박찬진, 박성건, 백인규, 박순오, 최시영
소속: 삼성전자 반도체 연구소 공정개발팀
- FP2-35 13:40-16:45 Si/SiGe Vertical Gate DHBT (VerDHBT)-based 1T DRAM Cell For Improved Retention Characteristics With a Large Hysteresis Window**
저자: Ja Sun Shin, Hyunjun Choi, Hagyoul Bae, Jaeman Jang, Daeyoun Yun, Euiyoun Hong, Hyojoon Seo, Dae Hwan Kim, and Dong Myong Kim
소속: School of Electrical Engineering, Kookmin University
- FP2-36 13:40-16:45 Deposition Temperature Dependence of the Memory Characteristics for AYO(Al₂O₃/Y₂O₃/SiO₂) Multi-stacked Film**
저자: Hye Young Jung^{1,2} and Doo Jin Choi¹
소속: ¹Department of Materials Science & Engineering, Yonsei University, ²Samsung Electronics Co., Ltd.

G. Device & Process Modeling, Simulation and Reliability 분과

- FP2-37 13:40-16:45 Optical Modeling of NBIS Instability and Hole Current in a-IGZO Systems**
저자: Yoon Jang Chung¹, Un Ki Kim¹, Jeong Hwan Kim¹, Eric Hwang¹, Sang ho Rha², and Cheol Seong Hwang¹
소속: ¹WCU Hybrid Materials Program, Department of Materials Science and Engineering and Inter-university Semiconductor Research Center, Seoul National University, ²Department of Nano Science and Technology,

Graduate School of Convergence Science and Technology, Seoul National University

- FP2-38 13:40-16:45 **A Smart Scribe SRAM Test Structure for Bitcell Variation Characterization in Macro Level**
저자: 김현수, 김형태, 황재철, 김영현, 배윤미, 윤성준, 이은철, 홍규식
소속: 삼성전자 System LSI, Product & Test Engineering Team
- FP2-39 13:40-16:45 **A Product Representative Scribe-line Process Monitor for CMOS Analog/ Mixed-signal Circuit Performance Characterization and Yield Improvement**
저자: 김형태, 김현수, 김영현, 황재철, 배윤미, 윤성준, 이은철, 홍규식
소속: 삼성전자 System LSI 제품기술팀
- FP2-40 13:40-16:45 **Simulation Study of Resurf Stepped Oxide (RSO) Type Semi Super-junction (semi-SJ) Trench Double Diffusion MOSFET (TDMOS) with Various Geometrical Parameters**
저자: 나경일¹, 구진근¹, 김상기¹, 김종대¹, 양일석², 이진호¹
소속: ¹한국전자통신연구원 융합부품소재연구부 IT융합부품기술팀,
²한국전자통신연구원 융합부품소재연구부 전력제어소자연구팀
- FP2-41 13:40-16:45 **Dynamic Pixel Test Pattern for CMOS Image Sensor**
저자: KS Lee, HJ Lee, MJ Jang, JC Kim, ST Kim, JW Moon, IW Cho, and KD Yoo
소속: Hynix Semiconductor Inc.
- FP2-42 13:40-16:45 **Separate Extraction Technique of Gate, Source, Drain, and Substrate Resistances in Individual MOSFET Combining I-V and C-V Characteristics**
저자: Ja Sun Shin, Hagyoul Bae, Euiyoun Hong, Jaeman Jang, Daeyoun Yun, Hyojoon Seo, Hyunjun Choi, Dae Hwan Kim, and Dong Myong Kim
소속: School of Electrical Engineering, Kookmin University
- FP2-43 13:40-16:45 **Migration of Oxygen Ions and Vacancies in Tunneling based Resistance Switching Element**
저자: Seung Jae Baik
소속: Department of Electrical Engineering, KAIST

- FP2-44 13:40-16:45 **Design Optimization of Vertical Double Gate SiGe/Si Heterostucture Tunneling Field-Effect Transistors**
저자: 윤영준¹, 이재성², 박윤수², 서재화¹, 우성윤¹, 강인만¹
소속: ¹경북대학교 전자공학부, ²경북대학교 전자전기컴퓨터학부
- FP2-45 13:40-16:45 **Measurement of Band Bending Voltage in SiO₂/Poly-silicon Stack during FN Tunneling by Constant Current Stress Test.**
저자: 나희도, 오진호, 목인수, 김종기, 이규민, 이성훈, 손현철
소속: 연세대학교 신소재공학과
- FP2-46 13:40-16:45 **Accuracy Verification of Asymmetric Substrate Resistance Model for Multi-finger RF MOSFETs**
저자: Min-Kwon Choi, Ju-Young Kim, and Seonghearn Lee
소속: Department of Electronic Engineering, Hankuk University of Foreign Studies
- FP2-47 13:40-16:45 **Analytical Model-based SPICE Simulation for the Design of Amorphous InGaZnO Thin-Film Transistors-based Circuits**
저자: 김우준, 배민경, 김용식, 김재형, 허인석, 장재만, 정현광, 공동식, 김윤혁, 이재욱, 조춘형, 전성우, 김동명, 김대환
소속: School of Electrical Engineering, Kookmin University