

# 제22회 한국반도체학술대회

2015년 2월 10일(화) - 12일(목), 인천 송도컨벤시아

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[WP2] 포스터세션 2

Room F

1F / 114+115 호

2015년 2월 11일(수) 14:40-16:00

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- WP2-1 14:40-16:00 Electrical Characteristics of GaNSchottkyBarrier Diode with Variety Buffer Thicknesses**  
Jihyun Yu<sup>1</sup>, Yeji Lee<sup>1</sup>, Changju Youn<sup>1</sup>, Cheoljung Choi<sup>1</sup>, and Kyuhan Shim<sup>1,2</sup>  
<sup>1</sup>Department of Semiconductor and Chemical engineering, Semiconductor Physics Research Center, Chonbuk National University, <sup>2</sup>R&D Division, Sigetronics, Inc.
- WP2-2 14:40-16:00 Fabrication of Ambipolar Transistors and Inverters based on Single-Walled Carbon Nanotube-InGaZnO Hybrid Structure using Microwave Irradiation**  
Kwang-Won Jo, Tae-Jun Ha, and Won-Ju Cho  
Department of Electrical Material Engineering, Kwangwoon University
- WP2-3 14:40-16:00 Investigations of Baking Temperature on Solution Processed In-Ga-Zn-O Thin Film Transistor**  
Kwang-Won Jo and Won-Ju Cho  
Department of Electrical Material Engineering, Kwangwoon University
- WP2-4 14:40-16:00 Improvement of Electrical Characteristics of Solution Processed In-Ga-ZnO TFTs by Double Side Irradiation**  
Sung-Wan Moon and Won-Ju Cho  
Department of Electronic Materials Engineering, Kwangwoon University
- WP2-5 14:40-16:00 GaAs Single Junction Solar Cell on Si Substrate with Direct Wafer Bonding**  
SangHyeon Kim<sup>1</sup>, Min-Su Park<sup>1</sup>, Dae-Myeong Geum<sup>1</sup>, Changzoo Kim<sup>2</sup>, and Won Jun Choi<sup>1</sup>  
<sup>1</sup>Center for Opto-electronic convergence systems, Korea Institute of Science and Technology, <sup>2</sup>Korea Advanced Nano Fab Center
- WP2-6 14:40-16:00 GaAs on Si Substrate Realized by Wafer Bonding and Epitaxial Lift-Off**  
Dae-Myeong Geum<sup>1</sup>, Sang Hyeon Kim<sup>1</sup>, Min-Su Park<sup>1</sup>, Hyunduk Yang<sup>1</sup>, Geunhwan Ryu<sup>1</sup>, Hosung Kim<sup>1</sup>, Jindong Song<sup>1</sup>, Changzoo Kim<sup>2</sup>, Sang Hyuck Kim<sup>1</sup>, and Won Jun Choi<sup>1</sup>  
<sup>1</sup>Center for Opto-electronic convergence, Korea Institute of Science and Technology, <sup>2</sup>Korea Advanced Nano Fab Center
- WP2-7 14:40-16:00 Low-Noise Microwave Performance of AlGaIn/GaN HEMTs on SiC with Wide Head T-Shaped Gate**

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- Hyung Sup Yoon, Byoung Gue Min, Ho Kyun Ahn, Jong Min Lee, Dong Min Kang, Sung Il Kim, Chul Won Ju, Hae Cheon Kim, and Jong Won Lim  
RF Convergence Components Research Section, IT Components & Materials Research Laboratory, Electronics and Telecommunications Research Institute
- WP2-8 14:40-16:00 X-Band 40W Pulsed Power Amplifier using 0.2um AlGaIn/GaN HEMT**  
강동민, 이종민, 민병규, 윤형섭, 안호균, 김성일, 주철원, 김해천, 임종원  
한국전자통신연구원 RF융합부품연구실
- WP2-9 14:40-16:00 Surface Passivation Oxide Study of 4H-SiC Bipolar Junction Transistors**  
Hyung-Seok Lee<sup>1</sup>, Martin Domeij<sup>2</sup>, Carl-Mikael Zetterling<sup>3</sup>, Mikael Östling<sup>3</sup>, Sang Choon Ko<sup>1</sup>, and Eun Soo Nam<sup>1</sup>  
<sup>1</sup>GaN Power Electronics Research Section, ETRI, <sup>2</sup>Fairchild Semiconductor, Stockholm-Kista, Sweden, <sup>3</sup>Royal Institute of Technology (KTH), Stockholm-Kista, Sweden
- WP2-10 14:40-16:00 Improvement in Highmobility of Indium Zinc Oxide Transistor by Metal Capping Method**  
Hyuk Ji<sup>1</sup>, Ah Young Hwang<sup>1</sup>, Chang Kyu Lee<sup>1</sup>, Pil Sang Yun<sup>2</sup>, Jong Uk Bae<sup>2</sup>, and Jae Kyeong Jeong<sup>1</sup>  
<sup>1</sup>Department of Materials Science and Engineering, Inha University, <sup>2</sup>R&D Center, LG Display Company
- WP2-11 14:40-16:00 CLGO계 기반 Sm<sup>3+</sup> 이온 도핑된 형광체의 주황색 발광 특성**  
전용일, L. Krishina Bharat, 유재수  
경희대학교 전자전파공학과
- WP2-12 14:40-16:00 Fabrication of GaN-based UV Active Pixel Sensor**  
Yi-Sak Koo, Chang-Ju Lee, Chul-Ho Won, Sang-Bum Kang, Jung-Hee Lee, and Sung-Ho Hahm  
School of Electronics Engineering, College of IT Engineering, Kyungpook National University
- WP2-13 14:40-16:00 A GaN MSM UV Photodiode Using Multi-layer Graphene as a Schottky Electrode**  
Sang-Bum Kang<sup>1</sup>, Chang-Ju Lee<sup>1</sup>, Yi-Sak Koo<sup>1</sup>, Seul-Ki Hong<sup>2</sup>, Byung-Jin Cho<sup>2</sup>, Jung-Hee Lee<sup>1</sup>, and Sung-Ho Hahm<sup>1</sup>  
<sup>1</sup>Kyungpook National University, <sup>2</sup>Korea Advanced Institute of Science and Technology
- WP2-14 14:40-16:00 Investigation of Electrical Performance Degradation in p-AlGaIn Gate Heterostructure Field Effect Transistors under Various Off-Stress Conditions**  
Hyo-Seung Choi<sup>1</sup>, Hun Jeong<sup>1</sup>, Seung Yup Jang<sup>2</sup>, Hong Chang Yeoh<sup>3</sup>, Sang-Hun Song<sup>1</sup>, and Hyuck-In Kwon

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- <sup>1</sup>School of Electrical and Electronics Engineering, Chung-Ang University, <sup>2</sup>MHS Team, System IC R&D Laboratory, LG Electronics, <sup>3</sup>Analog Devices Inc.
- WP2-15 14:40-16:00 Interface Engineering for InGaAs MIS Capacitor with Al<sub>2</sub>O<sub>3</sub> Employing PEALD-SiNx as an Interfacial Layer**  
Myoung-Jin Kang, Min-Seok Kim, and Kwang-Seok Seo  
Department of Electrical Engineering and Computer Science, Seoul National University
- WP2-16 14:40-16:00 Trapping and Detrapping Characteristics of TFT with P-Type Tin Oxide Channel for Nonvolatile Memory Application**  
Duc-Tai Tong, Manh-Cuong Nguyen, Seung-Won You, Donghwi Lee, Hyunjoon Bang, and Rino Choi  
Department of Material Science and Engineering, Inha University
- WP2-17 14:40-16:00 Effect of In-situ Deposited Silicon Carbon Nitride Capping Layer Thickness on the Characteristics of AlGaIn/GaN HEMTs**  
Jae-Hong Lee<sup>1</sup>, Hee-Sung Kang<sup>1</sup>, Young-Jo Kim<sup>1</sup>, Jae-Hoon Lee<sup>2</sup>, Dong-Gi Lee<sup>1</sup>, Young-Woo Jo<sup>1</sup>, Dong-Seok Kim<sup>1</sup>, Chul-Ho Won<sup>1</sup>, Jun-Hyeok Lee<sup>1</sup>, Ji-Hyun Kim<sup>1</sup>, and Jung-Hee Lee<sup>1</sup>  
<sup>1</sup>School of Electronics Engineering, Kyungpook National University, <sup>2</sup>Samsung Electronics Co., Ltd
- WP2-18 14:40-16:00 AlGaIn/GaN HEMT Using the Thick Metal Pad on 3D-BCB Structure**  
Raseong Ki, Min-Seong Lee, and Kwang-Seok Seo  
Department of Electrical Engineering and Computer Science, Seoul National University
- WP2-19 14:40-16:00 Improvement of Transconductance by Damage Curing on AlGaIn/GaN Normally-on MIS-HEMT for RF Application**  
Il-Hwan Hwang, Dong-Hwan Kim, and Kwang-Seok Seo  
Electrical Engineering and Computer Science, Seoul National University
- WP2-20 14:40-16:00 애노드 구조 변화와 Al<sub>2</sub>O<sub>3</sub> passivation을 통한 쇼트키 배리어 다이오드의 전기적 특성 분석**  
이현수<sup>1,2</sup>, 김정진<sup>1</sup>, 장현규<sup>1</sup>, 정동윤<sup>1</sup>, 나제호<sup>1</sup>, 박영락<sup>1</sup>, 장우진<sup>1</sup>, 전치훈<sup>1</sup>, 류상욱<sup>2</sup>, 문재경<sup>1</sup>, 고상춘<sup>1</sup>, 남은수<sup>1</sup>  
<sup>1</sup>한국전자통신연구원, 정보통신 부품소재연구소, GaN전력소자연구실,  
<sup>2</sup>단국대학교, 전자전기공학과
- WP2-21 14:40-16:00 Study the Breakdown Voltage Characteristics of the SBD Floating Metal Ring with Mo Schottky Metal**  
Teajin Nam, Sinsu Kyoung, Taiyoung Kang, and Eygoo Kagn  
Powercubesemi Inc

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- WP2-23 14:40-16:00 GaN-based LEDs with Subwavelength Structures for Enhanced Extraction Efficiency and Uniform Far-Field Patterns**  
Gil Ju Lee and Young Min Song  
Department of Electronics Engineering, Pusan National University
- WP2-24 14:40-16:00 Extraction of Location and Energy Level of Oxide Trap Leading to Random Telegraph Noise in Gate-Induced Drain Leakage of p-MOSFET**  
Hyunsoo Kim, Sung-Won Yoo, Youngsoo Seo, and Hyungcheol Shin  
Inter-university Semiconductor Research Center (ISRC) and School of Electrical Engineering and Computer Science, Seoul National University
- WP2-25 14:40-16:00 The Comparison of Electrical Characteristics Between Nanoplate Fet and FinFET for 5 nm node Technology**  
Duckseoung Kang, Jong-su Kim, and Hyungcheol Shin  
Inter-university Semiconductor Research Center (ISRC) and School of Electrical Engineering and Computer Science, Seoul National University
- WP2-26 14:40-16:00 Investigation of Work-Function Variation for Germanium-Source Tunnel Field-Effect Transistor**  
Youngtaek Lee, Hyohyun Nam, and Changhwan Shin  
School of Electrical and Computer Engineering, University of Seoul
- WP2-27 14:40-16:00 Device design of P-N Tunneling Field-Effect Transistor based on AlGaSb/InGaAs Heterojunction**  
Hye Rim Eun<sup>1</sup>, Young Jun Yoon<sup>1</sup>, Jae Hwa Seo<sup>1</sup>, Young In Jang<sup>1</sup>, Jin Su Kim<sup>1</sup>, Jung-Hee Lee<sup>1</sup>, and In Man Kang<sup>1</sup>  
<sup>1</sup>School of Electronics Engineering, Kyungpook National University
- WP2-29 14:40-16:00 Graphene Barristor 를 이용한 Ternary Inverter**  
심창후, 노진우, 장경은, 김윤지, 김소영, Abdul Karim Khan, 이병훈  
School of Material Science and Engineering, Gwangju Institute of Science and Technology
- WP2-30 14:40-16:00 DIBL Suppression in Edge-Over Schottky Barrier Field Effect Transistor**  
Jung-Yong Lee<sup>1</sup>, Sungchul Jung<sup>1</sup>, and Kibog Park<sup>1,2</sup>  
<sup>1</sup>Department of Physics, Ulsan National Institute of Science and Technology,  
<sup>2</sup>School of Electrical and Computer Engineering, Ulsan National Institute of Science and Technology
- WP2-31 14:40-16:00 Effects of Oxygen Adatoms on the Atomic and Electronic Structures of Various Ge Surfaces by Ab-Initio Study**  
Liu Kai<sup>1,2</sup>, Cheol Seong Hwang<sup>2</sup>, and Jung-Hae Choi<sup>1</sup>  
<sup>1</sup>Electronic Materials Research Center, Korea Institute of Science and Technology,  
<sup>2</sup>Department of Materials Science and Engineering, Seoul National University

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- WP2-32 14:40-16:00 A Study of the Effects of the Surface Roughness and Temperature of Magnetic Tunnel Junctions on Resistance Drift**  
Chulmin Choi, Youngtaek Oh, Jungmin Lee, and Yunheub Song  
Department of Electronic Engineering, Hanyang University
- WP2-33 14:40-16:00 Effect of Stacking Sequence on the Electronic Properties of Layered MoS<sub>2</sub>: Polytypism and Heterostructure**  
Jaehong Park<sup>1,2</sup>, Cheol Seong Hwang<sup>2</sup>, and Jung-Hae Choi<sup>1</sup>  
<sup>1</sup>Electronic Materials Research Center, Korea Institute of Science and Technology,  
<sup>2</sup>Department of Materials Science and Engineering, Seoul National University
- WP2-34 14:40-16:00 Effect of Program/Erase Cycling Stress on Reliability Properties in MONOS Memory Devices**  
Jinho Oh, Heedo Na, Ju-Young Jeong, Youngjae Kim, Taeho Kim, and Hyunchul Sohn  
Department of Materials Science and Engineering, Yonsei University
- WP2-35 14:40-16:00 Border Trap Change of Solution Processed ZrO<sub>2</sub> Layer with Bias-Temperature Stress**  
Jae-Hee Cho and Byoungdeog Choi  
Department of Electronic Electrical and Computer Engineering, Sungkyunkwan University
- WP2-36 14:40-16:00 A Study on Threshold Voltage Control of Lateral DMOS**  
Kuemju Lee, Joowon Park, Kwangsik Ko, Soonyeol Park, Jina Eum, Sanghyun Lee, Inwook Cho, and Kyungdong Yoo  
Technology Development team, SK Hynix Inc.
- WP2-37 14:40-16:00 Analysis of Reliability for Different Device Type in 65nm CMOS Technology**  
Chang-Su Kim, Sung-Kyu Kwon, Jae-Nam Yu, Sun-Ho Oh, and Hi-Deok Lee  
Department of Electronics Engineering, Chungnam National University
- WP2-38 14:40-16:00 Amorphous-Si TFT Design에 따른 Photo Leakage 특성 분석**  
김기환, 정금동, 장진혁, 서미선, 이주연, 박문수  
CAE team, Samsung Display Co. Ltd.
- WP2-39 14:40-16:00 Geometrical Effect of Silicon Nanostructures on Absorption Efficiency**  
Won Il Nam<sup>1</sup>, Young Jin Yoo<sup>1</sup>, and Young Min Song<sup>1</sup>  
<sup>1</sup>Department of Electronics Engineering, Pusan National University
- WP2-40 14:40-16:00 Numerical Analysis of the Variation of the Band-to-band Tunneling Current by Acoustic Waves Effect**  
Nakwon Yoo, Seongwook Choi, and Young June Park  
Department of Electrical and Computer Engineering, Seoul National University
- WP2-41 14:40-16:00 ReRAM Crossbar Array: Reduction of Access Time by Reducing Parasitic**

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## Capacitance of Selector Device

Hyein Lim<sup>1</sup>, Wookyung Sun<sup>1</sup>, Wootae Lee<sup>2</sup>, and Hyungsoon Shin<sup>1</sup>

<sup>1</sup>Department of Electronics Engineering, Ewha Womans University, <sup>2</sup>SK Hynix Inc.

- WP2-42 14:40-16:00 Analysis of Read Preferred SRAM Bit-Cells in 22nm FinFET Technology**  
Kyoman Kang, Kiryong Kim, Hanwool Jeong, Younghwi Yang, Juhyun Park, Taewoo Oh, and Seong-Ook Jung  
School of Electrical and Electronic Engineering, Yonsei University
- WP2-43 14:40-16:00 Illumination Effect on the Nonvolatile Memory Device based on a-InGaZnO Thin-Film Transistors with Ag Nanoparticle Storage**  
Min-Ju Ahn and Won-Ju Cho  
Department of Electrical Material Engineering, Kwangwoon University
- WP2-44 14:40-16:00 Resistive Switching Characteristics in HfO<sub>x</sub> - PMMA Blend Thin-Film**  
Il Jin Baek, Jang-Han Kim, and Won-Ju Cho  
Department of Electronic Materials Engineering, Kwangwoon University
- WP2-45 14:40-16:00 Resistive Switching in Ta<sub>2</sub>O<sub>5</sub>/IGZO Double Layer for System on Panel Applications**  
Jang-Han Kim, Il-Jin Baek, ki-Hyun Nam, Won-Ju Cho, and Hong-Bay Chung  
Department of Electronic Materials Engineering, Kwangwoon University
- WP2-46 14:40-16:00 Asymmetric Bipolar Resistive Switching in a Pt/Ta<sub>2</sub>O<sub>5</sub>/ZrO<sub>2</sub>/TiN Structure**  
Taehyung Park, Seul Ji Song, Dong Gun Kim, Young Jae Kwon, Jun Yeong Seok, Jung Ho Yoon, Kyung Jean Yoon, Dae Eun Kwon, Hae Jin Kim, and Cheol Seong Hwang  
Department of Material Science and Engineering, Seoul National University
- WP2-47 14:40-16:00 Effect of Physical/Chemical Characteristics of Electrolyte on the Cation Migration in Electro-Chemical Metallization Cell**  
Hae Jin Kim, Kyung Jean Yoon, Seul Ji Song, Jung Ho Yoon, Dae Eun Kwon, Tae Hyung Park, Yeong Jae Kwon, and Cheol Seong Hwang  
Department of Materials Science and Engineering and Inter-university Semiconductor Research Center, Seoul National University
- WP2-48 14:40-16:00 A PRAM-aware Modification of Linux Operating System**  
Sungkwang Lee, Sungjoo Yoo, and Sunggu Lee  
Department of Electrical Engineering, POSTECH
- WP2-49 14:40-16:00 Pt/SiNx/Pt and TiN/SiNx/Pt for ReRAM device**  
Dae Eun Kwon, Jung Ho Yoon, Seul Ji Song, Jun Yeong Seok, Kyung Jean Yoon, Tae Hyung Park, Hae Jin Kim, Xinglong Shao, Young Jae Kwon, and Cheol Seong Hwang  
Department of Materials Science and Engineering and Inter-university

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- Semiconductor Research Center, Seoul National University
- WP2-50 14:40-16:00 Doping Effect in Space Region of 16 nm NAND Flash Memory Cell String**  
Sung Yun Woo, Sung-Min Joe, and Jong-Ho Lee  
Department of Electrical and Computer Engineering, Seoul National University
- WP2-51 14:40-16:00 Characterization and Modeling of Ge<sub>2</sub>Sb<sub>2</sub>Te<sub>5</sub> Crystallization Time in Phase Change Random Access Memory Operation**  
Sanghyeon Lee and Seung Jae Baik  
Department of Electrical, Electronic, and Control Engineering, Hankyong National University
- WP2-52 14:40-16:00 Resistive Switching Characteristics Depending on Defects in Silicon nitride-based RRAM**  
Sungjun Kim<sup>1</sup>, Sunghun Jung<sup>1</sup>, Min-Hwi Kim<sup>1</sup>, Seongjae Cho<sup>2</sup>, and Byung-Gook Park<sup>1</sup>  
<sup>1</sup>Inter-university Semiconductor Research Center (ISRC) and the Department of Electrical and Computer Engineering, Seoul National University, <sup>2</sup>Department of Electronic Engineering, Gachon University
- WP2-53 14:40-16:00 Programming Pulse Width Variation and Its Microstructural Model of Phase-Change Memory**  
Gwihyun Kim, Sanghyeon Lee, and Seung Jae Baik  
Department of Electrical, Electronic, and Control Engineering, Hankyong National University
- WP2-54 14:40-16:00 Influence of Electron and Hole Distribution on Embedded SONOS Nonvolatile Memory**  
Da Som Kim<sup>1</sup>, Tae Ho Lee<sup>2</sup>, Young Jun Kwon<sup>2</sup>, Jae Gwan Kim<sup>2</sup>, Sung Kun Park<sup>2</sup>, In Wook Cho<sup>2</sup>, Kyung Dong Yoo<sup>2</sup>, Gyu Han Yun<sup>1</sup>, and Woo Young Choi<sup>1</sup>  
<sup>1</sup>Department of Electronic Engineering, Sogang University, <sup>2</sup>System IC Division, SK Hynix Inc.
- WP2-55 14:40-16:00 A 1.5-Gb/s Analog Pre-Emphasis Driver with 40-dB Cable Loss Compensation**  
Kyungmin Lee, Chaerin Hong, Hanbyul Choi, Xiao Ying, Seung-Hoon Kim, and Sung Min Park  
Department of Electronics Engineering, Ewha Womans University
- WP2-56 14:40-16:00 A 1-Gb/s Digital Transmitter with 3-tap FIR Pre-Emphasis in 0.13- $\mu$ m CMOS**  
Chaerin Hong, Kyungmin Lee, Xiao Ying, Hanbyul Choi, Seung-Hoon Kim, and Sung Min Park  
Department of Electronics Engineering, Ewha Womans University
- WP2-57 14:40-16:00 A Switching-based Fast Li-Ion Battery Charger by Continuously**

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## Compensating Built-In Resistance for Mobile Devices

Kwang-Yoon Lee, Hyun-A Ahn, Young-Ho Jung, Seong-Kwan Hong, and Oh-Kyong Kwon

Department of Electronic Engineering, Hanyang University

**WP2-58 14:40-16:00 A 1.5-Gb/s Equalizer and Limiting Amplifier for 33-dB Cable Loss Compensation**

Hanbyul Choi, Xiao Ying, Chaerin Hong, Kyungmin Lee, Seung-Hoon Kim, and Sung Min Park

Department of Electronics Engineering, Ewha Womans University

**WP2-59 14:40-16:00 Switched-Capacitor Reconstruction Filter with Reduced Sensitivity to Reference Noise for Sigma-Delta Audio DAC**

Sunsik Woo and Je-Kwang Cho

Mixed Circuit and System Team, System IC Laboratory, LG Electronics

**WP2-60 14:40-16:00 A Spread Spectrum Clock Generator Using the Clock-Clipping Technique for Reduction of Time Interval Errors**

Taiming Piao, Jae-Kyung Wee, and Inchaee Song

School of Electronic Engineering, Soongsil University

**WP2-61 14:40-16:00 Bootstrapping Technique with PWM/PFM Dual Mode for Wide load Range High Efficiency Buck Converter**

Joo Young Lee, Young Joon Park, Joo Young Jun, and Kang Yoon Lee

Information and communication college, SungKyunKwan University

**WP2-62 14:40-16:00 Standby Power Reduction Technique due to the Minimization of Voltage Difference between Input and Output in AC 60Hz input**

Kilsoo Seo, Kihyun Kim, Hyungwoo Kim, Kyungho Lee, and Jonghyun Kim

Power Semiconductor Research Center, KERI

**WP2-63 14:40-16:00 Portable Sensor Platform using Constant Current Source**

Yongjun Hwang, Seongwook Choi, Sangwoo Lee, and Youngjune Park

Department of Electrical and Computer Engineering, Seoul National University

**WP2-64 14:40-16:00 A Mutual Capacitive Touch Controller Robust to Display Noise for Ultrathin Displays Based on Differential Sensing**

Sanho Byun, Junchul Park, Chadong Kim, Minchull Lee, Hosuk Na, Youngtae Son, Keonhyoung Kwon, Mingun Baek, Yoonkyung Choi

Next Gen. Products Development Team, S.LSI

**WP2-65 14:40-16:00 A Compact Frequency Quadrupler With Subharmonic Injection-Locked Ring Oscillator**

Sungwoo Kim, Sungchun Jang, and Deog-Kyoon Jeong

Department of Electrical and Computer Engineering, Seoul National University



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- WP2-66 14:40-16:00 Clock and Data Recovery System with Digitally Controlled Phase Interpolator**  
Chang Soo Yoon, Woorham Bae, and Deog-Kyoon Jeong  
Department of Electrical and Computer Engineering, Seoul National University
- WP2-67 14:40-16:00 Event-Driven Simulation of Input-Dependent Nonlinear Behaviors**  
Jieun Jang and Jaeha Kim  
Department of Electrical and Computer Engineering, Inter-university Semiconductor Research Center, Seoul National University
- WP2-68 14:40-16:00 Delay Defect Localization by Silicon Data Mining**  
Taehwan Shin and Jaeyong Chung  
Department of Electronic Engineering, Incheon National University
- WP2-69 14:40-16:00 High-Performance of Piezoelectric Nanogenerator using Depletion Width Engineering of Surface Treatment**  
곽성수<sup>1</sup>, 이근영<sup>1</sup>, 김상우<sup>1,2</sup>  
<sup>1</sup>성균관대학교 신소재공학과, <sup>2</sup>성균관대학교 나노과학기술학과
- WP2-70 14:40-16:00 Chemically-Sintered, Binder-Free TiO<sub>2</sub> Films for Low-Temperature Photoelectrodes**  
Jaewon Jang and Moon-Ho Ham  
School of Materials Science and Engineering, Gwangju Institute of Science and Technology
- WP2-71 14:40-16:00 무반사 나노구조 PDMS 필름 코팅을 이용한 염료감응형 태양전지의 효율 향상 연구**  
임주호, 임정우, 유재수  
경희대학교 전자전파공학과
- WP2-72 14:40-16:00 Flexible Piezoelectric / Photovoltaic Hybrid Device for Energy Harvesting Applications**  
Seung Woo Hong, Chansoo Moon, Wonki Jo, and Seung Jae Baik  
Department of Electrical, Electronic and Control Engineering, Hankyong National University
- WP2-73 14:40-16:00 JBS구조의 p-grid 영역과 FLR 간격에 따른 4H-탄화규소(SiC) 쇼트키 장벽 다이오드(SBD)의 전기적 특성 분석**  
박힘찬<sup>1,2</sup>, 강인호<sup>2</sup>, 한상보<sup>1</sup>  
<sup>1</sup>경남대학교 첨단공학과, <sup>2</sup>한국전기연구원 전력반도체연구센터
- WP2-74 14:40-16:00 Normally-off AlGaIn/GaN MOSFETs의 Differential Subthreshold Ideality Factor Technique을 통한 Interface Trap Density 추출**  
최준영<sup>1</sup>, 강영진<sup>1</sup>, 최성주<sup>2</sup>, 김대환<sup>2</sup>, 차호영<sup>1</sup>, 김형탁<sup>1</sup>  
<sup>1</sup>전자 전기 공학부, 홍익대학교, <sup>2</sup>전기 공학과, 국민대학교

# 제22회 한국반도체학술대회

2015년 2월 10일(화) - 12일(목), 인천 송도컨벤시아

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- WP2-75 14:40-16:00 Thermoelectric Devices based on H<sub>2</sub>SO<sub>4</sub>-treated Poly(3,4-ethylenedioxythiophene):Poly(styrenesulfonate) Thin Films**  
Eunho Yang, Jaeyun Kim, and Jeonghun Kwak  
Department of Electronic Engineering, Dong-A University
- WP2-76 14:40-16:00 High Performance Organic Photovoltaics with Gold Nanoparticle Clusters**  
Hyung Il Park<sup>1,2</sup>, Seunghoon Lee<sup>1,3</sup>, Ju Min Lee<sup>1,2</sup>, Soo Ah Nam<sup>1,2</sup>, Taewoo Jeon<sup>1,2</sup>, Sang Woo Han<sup>1,3</sup>, and Sang Ouk Kim<sup>1,2</sup>  
<sup>1</sup>Center for Nanomaterials and Chemical Reactions, Institute for Basic Science (IBS), <sup>2</sup>Department of Materials Science and Engineering, KAIST, <sup>3</sup>Department of Chemistry and KI for the NanoCentury, KAIST
- WP2-78 14:40-16:00 Optimization of InGaP/InGaAs/Ge Solar Cells by InGaAs Middle Cell Growth Temperature**  
Sang Hyun Jung<sup>1,2</sup>, Chang Zoo Kim<sup>1</sup>, Youngjo Kim<sup>1,2</sup>, Kangho Kim<sup>1,2</sup>, Dong Hwan Jun<sup>1</sup>, Hyeong-Ho Park<sup>1</sup>, Hyun-Beom Shin<sup>1</sup>, JeHyuk Choi<sup>1</sup>, Won-Kyu Park<sup>1</sup>, Jaejin Lee<sup>2</sup>, and Ho Kwan Kang<sup>1</sup>  
<sup>1</sup>Device Technology Division, Korea Advanced Nano Fab. Center, <sup>2</sup>Department of Electrical and Computer Engineering, Ajou University
- WP2-79 14:40-16:00 Enhanced Field-Effect Passivation Performance of Atomic-Layer-Deposited Al<sub>2</sub>O<sub>3</sub> Layer for Si Nanostructured Solar Cells using Interface S Incorporation**  
Daewoong Kim<sup>1</sup>, Jaewon Song<sup>2</sup>, Jung-Ho Lee<sup>2</sup>, and Tae Joo Park<sup>1</sup>  
<sup>1</sup>Department of Materials Science and Engineering, Hanyang University, <sup>2</sup>Department of Chemical Engineering, Hanyang University