

## 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<sup>1,2</sup>, 박준모<sup>1,3</sup>, 백종협<sup>1</sup>, 곽준섭<sup>1</sup>, 오화섭<sup>1</sup>  
소속: <sup>1</sup>한국광기술원 LED소자센터, <sup>2</sup>순천대학교 WCU인쇄전자공학과, <sup>3</sup>전남대학교 물리학과
- FP2-3 13:40-16:45 Investigation on Etch Characteristics of Magnetic Tunnel Junction Stacks in a CH<sub>4</sub>/O<sub>2</sub>/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 CH<sub>4</sub>/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 Reddy<sup>1</sup>, V. Rajagopal Reddy<sup>2</sup>, and Jung-Hee Lee<sup>1</sup>  
소속: <sup>1</sup>School of Electrical Engineering & Computer Science, Kyungpook National University, <sup>2</sup>Department 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: 안호정<sup>1</sup>, 최우진<sup>1</sup>, 박봉렬<sup>2</sup>, 차호영<sup>2</sup>, 서광석<sup>1</sup>  
소속: <sup>1</sup>서울대학교 전기컴퓨터공학과, <sup>2</sup>홍익대학교 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 **BCl<sup>3</sup> ICP 건식 식각 공정으로 게이트 리세스한 0.25 $\mu$ m T-gate AlGaIn/GaN/SiC HEMT 소자 제작 및 특성**  
저자: 송인협<sup>1,2</sup>, 장경욱<sup>1</sup>, 안호균<sup>2</sup>, 민병규<sup>2</sup>, 임종원<sup>2</sup>, 강동민<sup>2</sup>, 김성일<sup>2</sup>, 장우진<sup>2</sup>, 이종민<sup>2</sup>, 윤형섭<sup>2</sup>, 문재경<sup>2</sup>  
소속: <sup>1</sup>한서대학교 신소재공학과, <sup>2</sup>한국전자통신연구원 RF융합부품연구팀
- FP2-11 13:40-16:45 **Deep Level Defects in InGaIn/GaN Blue Light Emitting Diode**  
저자: P. Koteswara Rao<sup>1</sup>, Byungguon Park<sup>1</sup>, Sang-Tae Lee<sup>1</sup>, Moon-Deock, Kim<sup>1</sup>, Jae-Eung Oh<sup>2</sup>, and Song-Gang Kim<sup>3</sup>  
소속: <sup>1</sup>Department of Physics, Chungnam National University, <sup>2</sup>School of Electrical and Computer Engineering, Hanyang University, <sup>3</sup>Department 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 Park<sup>1</sup>, Hyungkeun Jang<sup>1</sup>, Sung Kim<sup>1</sup>, Suk-Ho Choi<sup>1</sup>, Joongoo Kang<sup>2</sup>, Su-Huai Wei<sup>2</sup>, and Hosun Lee<sup>1</sup>

소속: <sup>1</sup>Department of Applied Physics, Kyung Hee University, <sup>2</sup>National 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<sub>x</sub>Zn<sub>1-x</sub>O Films on R-plane Sapphire Substrates by Plasma-assisted Molecular Beam Epitaxy**

저자: S. K. Han<sup>1</sup>, H. S. Lee<sup>1</sup>, D. S. Lim<sup>2</sup>, S. K. Hong<sup>1,2</sup>, M. H. Jung<sup>3</sup>, J. Y. Lee<sup>3</sup>, and T. Yao<sup>4</sup>

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

**FP2-17 13:40-16:45 Influence of Temperature on Structural, Optical Properties and Chemical Bonding Energy of TiO<sub>2</sub> Thin Films Grown on Glass Substrate by PLD**

저자: 빈민욱<sup>1</sup>, 이원재<sup>1</sup>, 최은호<sup>2</sup>, 유영조<sup>2</sup>

소속: <sup>1</sup>동의대학교 융합부품공학과,

<sup>2</sup>삼성 코닝정밀소재 에너지 소재 Labortory

- FP2-18 13:40-16:45 Ni-assisted, Large-area Graphene Growth using Rapid Thermal Annealing**  
저자: Jae Hwan Chu<sup>1</sup>, Jinsung Kwak<sup>1</sup>, Tae-Yang Kwon<sup>1</sup>, Soon-Dong Park<sup>1</sup>, Heungseok Go<sup>2</sup>, Sung Youb Kim<sup>1</sup>, Kibog Park<sup>2</sup>, and Soon-Yong Kwon<sup>1,2</sup>  
소속: <sup>1</sup>School of Mechanical and Advanced Materials Engineering, Ulsan National Institute of Science and Technology, <sup>2</sup>School 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 Moon<sup>1</sup>, Sang-il Kim<sup>2</sup>, Samseok Jang<sup>2</sup>, Jungyeop Hong<sup>1</sup>, Junhyuck Kwon<sup>2</sup>, and Dongjin Byun<sup>1,2</sup>  
소속: <sup>1</sup>Department of Nano-photonics, Korea University, <sup>2</sup>Department 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 Song<sup>1</sup>, Jong Min Kim<sup>1</sup>, Chan Soo Shin<sup>1</sup>, Chul Gi Ko<sup>1</sup>, Hyun Koun Cho<sup>2</sup>, Dae Ho Yoon<sup>2</sup>, Sung Min Hwang<sup>3</sup>, and Hogyoung Kim<sup>4</sup>  
소속: <sup>1</sup>Korea Advanced Nano Fab Center, <sup>2</sup>School of Advanced Materials Science and Engineering, Sungkyunkwan University, <sup>3</sup>Korea Electronics Technology Institute, <sup>4</sup>College of Humanities and Sciences
- FP2-21 13:40-16:45 Nucleation and Growth of GaN Compound on Various Powders**  
저자: 흥성기<sup>1</sup>, 이효종<sup>1</sup>, 박진섭<sup>2</sup>, 조명환<sup>3</sup>, and Takafumi Yao<sup>3</sup>  
소속: <sup>1</sup>Materials Science and Engineering, Dong-A University, <sup>2</sup>Department of Electronic Engineering, Hanyang University, <sup>3</sup>Institute 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. Park<sup>1</sup>, D. Moon<sup>2</sup>, S. Park<sup>2</sup>, S. H. Park<sup>2</sup>, and E. Yoon<sup>2</sup>

소속: <sup>1</sup>Department of Electronic Engineering, Hanyang University,  
<sup>2</sup>Department 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. Kwak<sup>1</sup>, J. H. Chu<sup>1</sup>, T.-Y. Kwon<sup>1</sup>, S.-D. Park<sup>1</sup>, S. Y. Kim<sup>1</sup>, K. Park<sup>2</sup>, and S.-Y. Kwon<sup>1,2</sup>

소속: <sup>1</sup>School of Mechanical and Advanced Materials Engineering, Ulsan National Institute of Science and Technology, <sup>2</sup>School 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 Go<sup>1</sup>, Jinsung Kwak<sup>2</sup>, Youngeun Jeon<sup>1</sup>, Bum-Kyu Kim<sup>3</sup>, Nam Kim<sup>4</sup>, Jae-Hyun Ko<sup>5</sup>, Sung Youb Kim<sup>2</sup>, Byung Cheol Lee<sup>6</sup>, Hyun Suk Kang<sup>6</sup>, Soon-Yong Kwon<sup>2</sup>, and Kibog Park<sup>1</sup>

소속: <sup>1</sup>Electrical and Computer Engineering, Ulsan National Institute of Science and Technology (UNIST), <sup>2</sup>Mechanical and Advanced Materials Engineering, Ulsan National Institute of Science and Technology (UNIST), <sup>3</sup>Physics, Chonbuk National University, <sup>4</sup>Division of Convergence Technology, Korea Research Institute of Standards and Science, <sup>5</sup>Physics, Hallym University, <sup>6</sup>Quantum 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<sup>1,2</sup>, E. H. Lee<sup>1</sup>, J. D. Song<sup>1</sup>, I. K. Han<sup>1</sup>, J. I. Lee<sup>1</sup>, and T. W. Kim<sup>2</sup>  
소속: <sup>1</sup>Nano Photonics Research Center, Korea institute of Science and Technology, <sup>2</sup>Division of Electronics and Computer Engineering, Hanyang University
- FP2-28 13:40-16:45 **Molecular Beam Epitaxy를 이용한 Large Droplet Island 성장**  
저자: 이은혜<sup>1</sup>, 송진동<sup>1</sup>, 김수연<sup>1</sup>, 배민환<sup>1</sup>, 한일기<sup>1</sup>, 장수경<sup>2</sup>, 이정일<sup>1</sup>  
소속: <sup>1</sup>한국과학기술연구원 나노포토닉스센터, <sup>2</sup>연세대학교 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 Young<sup>1</sup>, Lee Jong-Han<sup>2</sup>, Samseok Jang<sup>2</sup>, Lee Do Han<sup>2</sup>, Tae-Geun Seong<sup>1</sup>, Sahm Nahm<sup>1,2</sup>, and Dongjin Byun<sup>2</sup>

소속: <sup>1</sup>Department of Nano Semiconductor Engineering, Korea University, <sup>2</sup>Department 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 Kim<sup>1</sup>, Bongho Kim<sup>1</sup>, Sungwoo Chun<sup>1</sup>, Jihun Kwon<sup>1</sup>, Seonjun Choi<sup>1</sup>, and Seung-Beck Lee<sup>1,2</sup>  
소속: <sup>1</sup>Department of Electronic Engineering, Hanyang University, <sup>2</sup>Institute 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(Al<sub>2</sub>O<sub>3</sub>/Y<sub>2</sub>O<sub>3</sub>/SiO<sub>2</sub>) Multi-stacked Film**  
저자: Hye Young Jung<sup>1,2</sup> and Doo Jin Choi<sup>1</sup>  
소속: <sup>1</sup>Department of Materials Science & Engineering, Yonsei University, <sup>2</sup>Samsung 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 Chung<sup>1</sup>, Un Ki Kim<sup>1</sup>, Jeong Hwan Kim<sup>1</sup>, Eric Hwang<sup>1</sup>, Sang ho Rha<sup>2</sup>, and Cheol Seong Hwang<sup>1</sup>  
소속: <sup>1</sup>WCU Hybrid Materials Program, Department of Materials Science and Engineering and Inter-university Semiconductor Research Center, Seoul National University, <sup>2</sup>Department 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: 나경일<sup>1</sup>, 구진근<sup>1</sup>, 김상기<sup>1</sup>, 김종대<sup>1</sup>, 양일석<sup>2</sup>, 이진호<sup>1</sup>  
소속: <sup>1</sup>한국전자통신연구원 융합부품소재연구부 IT융합부품기술팀,  
<sup>2</sup>한국전자통신연구원 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: 윤영준<sup>1</sup>, 이재성<sup>2</sup>, 박윤수<sup>2</sup>, 서재화<sup>1</sup>, 우성윤<sup>1</sup>, 강인만<sup>1</sup>  
소속: <sup>1</sup>경북대학교 전자공학부, <sup>2</sup>경북대학교 전자전기컴퓨터학부
- FP2-45 13:40-16:45 **Measurement of Band Bending Voltage in SiO<sub>2</sub>/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, 김윤희, 이재욱, 조춘형, 전성우, 김동명, 김대환  
소속: School of Electrical Engineering, Kookmin University