



[P1] Poster Session I

Session Date November 11 (Tue.), 2025

Session Time 17:25-18:15

Session Room Grand Ballroom 4, 2F

[P1-1]

Temperature-Dependent Growth Characteristics and Dopant Activation in In Situ Boron-Doped SiGe Epitaxy Treated by Nanosecond Laser Annealing

Minho Jeong (Yonsei Univ. and Samsung Electronics Co., Ltd., Korea), Dongmin Yoon, Jungwoo Kim, Seokmin Oh, Seonwoong Jung, and Dae-Hong Ko (Yonsei Univ., Korea)

[P1-2]

Tailoring Dielectric Properties of Liquid Crystal Polymer Films via Non-Solvent Induced Phase Separation and Molecular Alignment

Baekman Kim, Geunjung Lee (KAIST, Korea), Jongseok Kim (Chungnam Nat'l Univ., Korea), Tae Gyun Hong (KAIST, Korea), Yeongsik Kim, Hyungju Ahn (POSTECH, Korea), Yun Ho Kim (KRICT, Korea), Hyun You Kim (Chungnam Nat'l Univ., Korea), and Dong Ki Yoon (KAIST, Korea)

[P1-3]

Development of Measurement Techniques for Cocktail Precursors in Atomic Layer Deposition Using Hafnium Zirconium Precursors

Jaeuk Lim (KRISS and Hanyang Univ., Korea), Inseok Jeong, Chanjung Kim (KRISS and Univ. of Science and Tech., Korea), Seonjeong Maeng (KRISS, Korea), Jong-Man Kim (Hanyang Univ., Korea), and Ju-Young Yun (KRISS and Univ. of Science and Tech., Korea)

[P1-4]

Effect of Ion Bombardment on Ti and TiW Thin Films Deposited by RF Magnetron Sputtering under Low-Temperature Conditions

Changyeong Ji, Chiyun Bang, and Ju-Hong Cha (Gyeongsang Nat'l Univ., Korea)



[P1-5]

Effects of Pulse-Widths on Weight-Update Characteristics in Synaptic Thin-Film Transistors

Youngeon Ko, Jaeyeong Ryu, Jeongseok Pi, Danyoung Cha, and Sungsik Lee (Pusan Nat'l Univ., Korea)

[P1-6]

Influence of Operating Regions on Weight Linearity Characteristics in Synaptic Thin-Film Transistors

Jeongseok Pi, Jimin Shin, Heonju Lim, Danyoung Cha, and Sungsik Lee (Pusan Nat'l Univ., Korea)

[P1-7]

Induction of Tetragonal Phase Transition of HfO_2 through Capping Layer and Utilization of Atomic Layer Etching

Juhwan Jeong, Hyunju Jung, Hanbin Lee, Myungil Kim, Jiyeon Han, Duckhyeon Seo, Yiun Park (EGTM Co., Ltd., Korea), Jeongsoo Kim, Jaehyeon Yun, Woojin Jeon (Kyung Hee Univ., Korea), and Kyuho Cho (EGTM Co., Ltd., Korea)

[P1-8]

Ultrathin Gate Dielectrics for Extremely Flexible MOSFETs via Atomic Layer Deposition (ALD) Process

Chang-Hyeon Park and Yei-Hwan Jung (Hanyang Univ., Korea)

[P1-9]

Novel Hybrid Ligand Stabilized Niobium Precursors with High Thermal Stability for Atomic Layer Deposition of Nb_2O_5

Sunyoung Baik, Shinbeom Kim, Taeyoung Lee, Woongjin Choi, Sungjun Ji, Kunhee Kim, Yiun Park, Jiyeon Han, Hyunju Jung, and Kyuho Cho (EGTM Co., Ltd., Korea)



[P1-10]

Enhancing Topographical Selectivity in Atomic Layer Deposition of HfO_2 Thin Films for High Aspect Ratio Structures Using Vapor-Dosed Surface Protector

Jiwoo Oh and Woo-Hee Kim (Hanyang Univ., Korea)

[P1-12]

Impact of HfO_2 Spacer Engineering for High-Performance Ultra-Short Channel InGaZnO Vertical Thin-Film Transistors

Nayoung Jang (Kyunghee Univ., Korea), Jae-Wook Lee, Young-Ha Kwon, Nak-Jin Seong, Kyu-Jeong Choi (NCD Co., Ltd., Korea), and Sung-Min Yoon (Kyunghee Univ., Korea)

[P1-13]

Unveiling Geometry Dependences for Vertical-Stack Configuration of Planar- and Vertical-Channel TFTs with Distinctive Single InGaZnO Active Layer

Ji-Won Kang (Kyung Hee Univ., Korea), Chi-Sun Hwang (ETRI, Korea), and Sung-Min Yoon (Kyung Hee Univ., Korea)

[P1-14]

A Novel Mesa-Type Vertical 2T0C DRAM Cell for High-Density Monolithic 3D Integration with Superior Write Speed and Reliable Data Retention

Kyung Min Kim, Ji Won Kang, and Sung Min Yoon (Kyung Hee Univ., Korea)

[P1-15]

Lateral Capacitive Coupling in an Atomic-Layer Deposited HfO_2 -Gated InGaZnO Transistors Enabling Spatiotemporal Synaptic Function

Hyunsik Woo and Sung-Min Yoon (Kyung Hee Univ., Korea)

[P1-16]

The Study of Molybdenum Oxidation for Applications of DRAM Devices

Kyong Min Kim, Byeong Hyeon Kang, Seok Nam Ko, Seok Jun Han, Tae Wan Lee, and Jin Tae Noh (Wonik IPS, Korea)



[P1-17]

High-Performance In_2O_3 Thin-Film Transistors via Sputtering Power Modulation and Al_2O_3 Interface Control Layer Optimization

Se-Hyun Chun and Sung-Min Yoon (Kyung Hee Univ., Korea)

[P1-18]

Interfacial-Defect Analysis in Morphotropic Phase Boundary $\text{Hf}_{1-x}\text{Zr}_x\text{O}_2$ for Enhanced DRAM Capacitor Performance

Donghyeon Bae, Taehyeon Yoon, Minje Lee, Guno Kim, and Hyungtak Seo (Ajou Univ., Korea)

[P1-19]

Gallium-Free IAZO Channels by PEALD: Rationale and Cation-Ratio Tuning for Stable TFTs

Taehyeon Yoon, Hyunmin Dang, Ayoung Kim, Jiyea Nam, and Hyungtak Seo (Ajou Univ., Korea)

[P1-21]

Electrical Characteristics and Reliability Evaluation of IGZO TFTs under Hydrogen Plasma Treatment and Thermal Stress

Taeyang Kim, Jiyoung Bang, Hyeonjeong Sun, Seungmin Choi, Seungjae Lee, Kyubin Hwang, Yeoeun Yun, Suhwon Choi, and Seung-Beck Lee (Hanyang Univ., Korea)

[P1-22]

Effect of H_2S Dosing Parameters on Growth and Crystallinity of Atomic Layer Deposited Grown SnS_2

Soohyun Yoon, TaeYoon Lee, Dowwook Lee, and Hyeongtag Jeon (Hanyang Univ., Korea)

[P1-23]

A SAM-Based Approach for Damage-Free Release of Ultrathin Silicon Devices from SOI Wafers

Sun Young Park and Yei Hwan Jung (Hanyang Univ., Korea)



[P1-24]

Catalyst-Engineered β -Ga₂O₃ Nanowire Photodetectors for Enhanced Solar-Blind UV Detection

Jung-Bok Lee, Min-Seok Jang, Hee-Jin Kim, Ju-Eun An, and Ho-Jun Lee (Pusan Nat'l Univ., Korea)

[P1-25]

Enhancement of Electrical and Structural Properties of Hf_{0.5}Zr_{0.5}O₂ Thin Films via Ar Plasma Surface Treatment

Jeonggwang Lee, Jaewook Lee, Hyun Woo Jeong, Hyojun Choi (Seoul Nat'l Univ., Korea), Young Yong Kim (POSTECH, Korea), and Min Hyuk Park (Seoul Nat'l Univ., Korea)

[P1-26]

Cycle Engineering of Hf_xZr_(1-x)O₂ Thin Films for Oxygen Vacancy Control and Enhanced Ferroelectric Reliability

Taehyung Kim, Dongchan Seo, Kiwon Yoon, Hyeonje Kim, and Jinsub Park (Hanyang Univ., Korea)

[P1-27]

The Influence of Annealing on Thermal Atomic Layer Deposition Indium Oxide Semiconductor Thin-Film Transistors

Kang Choi, Dong-Geun Kim, Su-Jin Sim, and Ji-Hoon Ahn (Hanyang Univ., Korea)

[P1-28]

Surface Inhibition of SiO₂ Atomic Layer Deposition by Silane Self-Assembled Monolayers with Varying Chain Lengths

Seo-Hyun Lee (Hanyang Univ., Korea), Jeong-Min Lee (Stanford Univ., USA), and Woo-Hee Kim (Hanyang Univ., Korea)

[P1-29]

Niobium Doping Effects on the Electrical Properties of Indium Oxide Thin Film Transistors Deposited by Atomic Layer Deposition

Su-Jin Sim, Dong Geun Kim, Kang Choi, and Ji-Hoon Ahn (Hanyang Univ., Korea)



[P1-30]

Improvement of Dielectric Constant and Leakage in TiO_2 Thin Films by Mg Doping Cycle Control

Taehyeon Kim, Seungwoo Lee, and Woojin Jeon (Kyung Hee Univ., Korea)

[P1-31]

Optimization of Gd Doping in HfO_2 Charge-Trap Layers for Wide-Window and Low-Voltage Operation in 3D V-NAND

Jonghyeok Lee, Jihun Nam (Kyung Hee Univ., Korea), Hansol Oh, Hanbyul Kim, Yongjoo Park (SK Trichem Co., Ltd., Korea), and Woojin Jeon (Kyung Hee Univ., Korea)

[P1-32]

Ultra-Thin La_2O_3 Interfacial Layer for TDDB Lifetime Extension in HZO Ferroelectric Devices

Hyeon-Cheol Jeong, Kyung-Soo Park, Yoon-Seok Lee, Yeon-Woo Choi, Sang-Myun Lim, Ji-Hoon Choi, Tae-Suk Kim, and Changwan Choi (Hanyang Univ., Korea)

[P1-33]

Optoelectronic-Synaptic Properties of Phototransistors Using Heterojunctioned $\text{ReS}_2/\text{MoS}_2$ Crystals Synthesized via Chemical Vapor Deposition

Dong Geun Kim, Seung Won Lee, and Ji-Hoon Ahn (Hanyang Univ., Korea)

[P1-34]

Comparison of Silane-Based Small Molecule Inhibitors for Enhanced Chemoselectivity in Area-Selective ALD

Eun Chong Cho (KRICT and Sungkyunkwan Univ., Korea), Jae Hun Hwang (KRICT, Korea), Jee-Eun Choi (Seoul Nat'l Univ., Korea), Jung Hoon Lee (KRICT, Korea), Won Bo Lee (Seoul Nat'l Univ., Korea), and Youngkwon Kim (KRICT, Korea)

[P1-35]

Nanoscale Thin-Film Deposition via Evaporation Point Source

Jae-hun Jung, Su-Young Cha, Jae-Young Lee, Seung-In Woo, and Soo-Bin Jeong (ALPHAPLUS Co., Ltd., Korea)



[P1-36]

Fabrication of High-Performance P-Type TFTs Using SnO Thin Films Grown by Atomic Layer Deposition with a Novel Sn Precursor

Sol-Hee Jo (KRICT and Hanyang Univ., Korea), Ji-min Seo, Bo-Keun Park (KRICT, Korea), Jin-Seong Park (Hanyang Univ., Korea), and Jung-Hoon Lee (KRICT, Korea)

[P1-37]

Effect of Hydrogen Plasma Parameters on Amorphous Carbon Thin Film Growth in CBr₄ PEALD Process

Yeong-Su Choi, Hak-Rim Lee, and Ju-Hong Cha (Gyeongsang Nat'l Univ., Korea)

[P1-38]

Defect-Free Gap Filling of SiO₂ Achieved by Bias-Pulsed and VHF Plasma Techniques

Da Hun Ko, Seon Jae Jung, Ji Eun Kang, Hye Won Han, Si Yeon Kim, Ga hee Oh, and Geun Young Yeom (Sungkyunkwan Univ., Korea)

[P1-39]

Development of Hybrid-ALD Process for Ultra-Thin TiO₂ Hardmask Films in Advanced Semiconductor Etching and Patterning

Hyuk-Min Kwon and Se-Hun Kwon (Pusan Nat'l Univ., Korea)

[P1-41]

Evaluation of the Characteristics of PtRu Bimetallic Alloy Thin Film for PMOS Gate Electrodes Deposited by Atomic Layer Deposition

Jae-Hyun Kim, Hyun-Jae Woo (Pusan Nat'l Univ., Korea), Kwang-Ho Kim, and Se-Hun Kwon (Pusan Nat'l Univ. and Global Frontier Research Center, Korea)

[P1-42]

Atomic Layer Deposition Assisted Double Patterning Lithography

Seo-Jun Lee and Se-Hun Kwon (Pusan Nat'l Univ., Korea)



[P1-43]

Effect of Substrate Pre-Treatment on the Growth and Properties of SnS Thin Films by Atomic Layer Deposition

Dowwook Lee and Hyeongtag Jeon (Hanyang Univ., Korea)

[P1-44]

Plasma-Assisted MLD of Thermally Stable Low-k SiONC Thin Films with Tetra-Isocyanate-Silane and Phloroglucinol

Gi-Beom Park, Hae Lin Yang, Ji Min Kim, Hyolim Jung, Jin-Seong Park (Hanyang Univ., Korea)

[P1-45]

High-Precision Microchip Transfer via Optimized Blister-Driven LIFT Process

Seong Ryu, Do Young Kim, and Seoung-Ki Lee (Pusan Nat'l Univ., Korea)

[P1-46]

Optoelectrical Properties of 3D Porous Graphene/Silicon Schottky Diode

Hong Gun Kim, Hee Ra Lee (Pusan Nat'l Univ., Korea), Sukang Bae (KIST, Korea), and Seoung-Ki Lee (Pusan Nat'l Univ., Korea)

[P1-47]

Non-Van Der Waals Layered Molybdenum Sulfide Wires with Perpendicular Layer Stacking and Tunable Interlayer Domains

Seo Hyeon Moon (Pusan Nat'l Univ., Korea), Hyeon-Sik Jang (Gyeongbuk Nat'l Univ., Korea), Sukang Bae (KIST, Korea), Jong-Seong Bae (KBSI, Korea), and Seoung-Ki Lee (Pusan Nat'l Univ., Korea)

[P1-48]

Metal-Anchored Graphene Composite for Efficient Heat Dissipation in Flexible Electronic Devices

Geonguk Kim (Pusan Nat'l Univ., Korea), Tae-Wook Kim (Jeonbuk Nat'l Univ., Korea), Sukang Bae (KIST, Korea), and Seoung-Ki Lee (Pusan Nat'l Univ., Korea)



[P1-49]

Permanent Strain Engineering in MoS₂ via Laser Processing for Improved Resistive Memory Devices

Gyu-been Kim, Hee Yoon Jang (Pusan Nat'l Univ., Korea), Sukang Bae (KIST, Korea), and Seoung-Ki Lee (Pusan Nat'l Univ., Korea)

[P1-50]

Enhanced Growth Stability of TiO₂ and SnO₂ Deposited by Liquid Injection Atomic Layer Deposition

Ji-Won Jang, Soon-Kyeong Park (Ajou Univ., Korea), Hee-Sung Kang (MKP Inc., Korea), and Il-Kwon Oh (Ajou Univ., Korea)

[P1-51]

BTBAS, BDEAS, and NSi-01: A Comparative Evaluation for VHF PE-ALD of Silicon Nitride

Yea-Ji Kim, Young-Jin Lim, Min-Jeong Rhee (Ajou Univ., Korea), Ngoc Le Trinh, Bonwook Gu, Youngho Kang (Incheon Nat'l Univ., Korea), Jae Hack Jeong (CN1 Co., Ltd., Korea), Han-Bo-Ram Lee (Incheon Nat'l Univ., Korea), and Il-Kwon Oh (Ajou Univ., Korea)

[P1-52]

Anisotropic Wet-Etching Enabled Transfer Printing of Single-Crystal Silicon MOSFETs for Flexible Electronics

Seol Ahn and Yei Hwan Jung (Hanyang Univ., Korea)

[P1-53]

Engineering of Thin Film for Flexible CTF Device

Beomhee Park, Changhan Kim, and Yei Hwan Jung (Hanyang Univ., Korea)

[P1-54]

Synthesis of Single-Crystal Cobalt and Copper Nanowires for BEOL Interconnect

Jae Wook Lee and Jae Yong Song (POSTECH, Korea)



[P1-55]

Void-Free Copper Electrochemical Filling of High Aspect-Ratio TGVs

Jun-Young Lee, Gi-Ho Jeong, Jae-Wook Lee (POSTECH, Korea), Van-Quang Nguyen, Ji-Hye Kim, Hyung-Sang Park (ISAC Research Inc., Korea), and Jae-Yong Song (POSTECH, Korea)

[P1-56]

Structural Design of Heat Sinks Microchannel for High Heat Flux Cooling of GaN HEMT Inverter Power Module

Joohyung Bang, Yonghyun Kim, Hoyoon Lee, and Hongyun So (Hanyang Univ., Korea)

[P1-57]

Development of PCM-PU Based Thermal Interface Materials for Efficient Thermal Management of Semiconductor Chips

Taegyong Yeo, Joohyung Bang, and Hongyun So (Hanyang Univ., Korea)

[P1-58]

Effects of EMC Degradation on Viscoelastic Properties and Reliability in Power Semiconductor Packages

Se-Jun Park, Se-Min Lee, Hee-Ju Han (Hanyang Univ., Korea), Hyun-Woo Jung, Kyung-Woo Lee, Dae-Un Sung (Hyundai Motor Co., Ltd., Korea), and Hak-Sung Kim (Hanyang Univ., Korea)

[P1-59]

Study of Reliability of Redistribution Layers in Advanced Packaging: Electrochemical Migration Analysis and Parametric Electrochemical Modeling

Ho-Jin Lee, Jeong-Hyeon Baek (Hanyang Univ., Korea), Tae-Hoon Kim, Ji-Hye Shim (Samsung Electronics Co., Ltd., Korea), and Hak-Sung Kim (Hanyang Univ., Korea)



[P1-60]

Enhanced Short-Circuit Robustness of Embedded-SBD 4H-SiC MOSFETs via Ni Silicide Process Optimization

Junseong Kim (KENTECH, Korea), Sungmo Koo (EYEQ Lab Inc., Korea), and Hyemin Kang (KENTECH, Korea)

[P1-61]

CTF Based VMM on Chip Learning Architecture Method

Ho Jin Lee and Keewon Kwon (Sungkyunkwan Univ., Korea)

[P1-62]

Analysis of Electrical Characteristics of 1.2 kV SiC MOSFETs with Embedded SBDs after Power Cycling Test

Gyuhyeok Kang (Kumoh Nat'l Inst. of Tech., Korea), Subin Choi, Jinwo Park, and Ogyun Seok (Pusan Nat'l Univ., Korea)

[P1-63]

A 1.2 kV SiC DMOSFET with Double Epitaxial for Reduced Specific On-Resistance

Seungwan Jung, Junki Jung, Dusan Baek, Seungri Yang, Gayeong Park, and Ogyun Seok (Pusan Nat'l Univ., Korea)

[P1-64]

Doping Profile Design for Simplifying Ion Implantation in the JFET Region of 1.2 kV SiC MOSFETs

Hee-Jin Kim, Ogyun Seok, and Ho-Jun Lee (Pusan Nat'l Univ., Korea)

[P1-65]

Comparison of GaN MPS Device Characteristics with Structural Variations

Ju Eun An and Ho-Jun Lee (Pusan Nat'l Univ., Korea)



[P1-66]

A New 4H-SiC Multi-Channel MOSFET with Additional Channel

Min-Seok Jang, Jungbok Lee (Pusan Nat'l Univ., Korea), Sung Mo Koo (EYEQ Lab Inc., Korea), and Ho-Jun Lee (Pusan Nat'l Univ., Korea)

[P1-67]

NFC-Based Smart Bicycle Grip Lock System

Yun-Ah Lee, Hong-geun Park, Ho-Jin Jang, Seo-Yeong Kwon, and Jung-Kyu Lee (Gyeongsang Nat'l Univ., Korea)

[P1-68]

Dynamic CGD for Hard-Switching in p-Gate GaN HEMTs

Taehyun Jang and Hyemin Kang (KENTECH, Korea)

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Interfacial Evolution and Electrical Optimization of NiAl Ohmic Contacts on 4H-SiC by UV Laser Annealing at Varying Fluence Levels

Young Jae Park, Seongjun Kim, Kyeong-Keun Choi, Dae-Hwan Kang, Minjae Kang (POSTECH, Korea), Haseung Lee, Beomsang Kim, Chanho Hong, Sanghyun Ji (AP Systems, Korea), Sang-Mo Koo (Kwangwoon Univ., Korea), Byoung Hun Lee, and Hoon-Kyu Shin (POSTECH, Korea)

[P1-70]

Realization of 6-Inch 4H-SiC CMOS Inverters: Fabrication and Characterization

Seongjun Kim, Youngjae Park (POSTECH, Korea), Mathias Rommel (Fraunhofer IISB, Germany), Byoung Hun Lee, and Hoon-Kyu Shin (POSTECH, Korea)

[P1-71]

Development of GeSe Atomic Layer Deposition Using Novel Ge Precursor and Preliminary OTS Characteristics toward Selector-Only Memory Applications

Jiyeong Yang, Jung-Tae Kim, and Woo-Hee Kim (Hanyang Univ., Korea)



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[P1-72]

Crystallinity Enhancement of ALD MoO_x and Stable t-ZrO₂ formation through Post-Treatment Modification

Seohye Yoon, Yongju Kwon, and Woo-Hee Kim (Hanyang Univ., Korea)