# 7th IEEE Electron Devices Technology and Manufacturing (EDTM) Conference 2023

## March 7 – 10, 2023 / COEX Seoul, Korea

| P. Poster Session | |
|---|---|
| **Session Date:** | March 9(Thu.), 2023 |
| **Session Time:** | 10:30-13:00 |
| **Session Room:** | Room (#300) |

**[P-001]**

**Relation of Electrical Property and Mean Coordination Number at OTS Material Based Ge-As-Se-Si**

Gwang Sun Jung, Uk Hwang, Jongho Lee, Jun Ku Ahn, Sung Lae Cho and Kyoung Ryul Yoon

*SK hynix Inc.*

**[P-002]**

**Periodic Fine Dimple Lines on the Surface of the Grain-Boundary Free Si Films Grown by Continuous-Wave-Laser Lateral Crystallization**

Nobuo Sasaki[1,2], Satoshi Takayama[2], Rikuto Sasai[2] and Yukiharu Uraoka[2]

*[1]Sasaki Consulting, [2]Nara Institute of Science and Technology*

**[P-004]**

**Heteroepitaxial InP Growth on a Si(001) Substrate Using a Ge Buffer Layer in MOCVD**

Keun Wook Shin[1], Kiyoung Lee[2] and Euijoon Yoon[1]

*[1]Seoul National University, [2]Hongik University*

**[P-006]**

**EUV Lighting by the Cold Cathode C-Beam Irradiation Technique**

Bishwa Chandra Adhikari, Sung Tae Yoo and Kyu Chang Park

*Kyung Hee University*

**[P-007]**

**Study of Continuous-Wave RGB Laser Annealing for the Activation of Phosphorus/Boron-Doped Si Deep Junction with High Scan Speed**

Seung Mo Kim[1], Min Gyu Kwon[1], Hae-Won Lee[1], Ki Sung Kim[1], Bohyeon Kang[1], Hyongsuk Choo[2], Jin-Hong Park[2], Rock-Hyun Baek[1], Hyeon Jun Hwang[1] and Byoung Hun Lee[1]

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**[P-008]**

**Improvement of $MoS_2$ Film Quality by Solid-Phase Crystallization from PVD Amorphous $MoS_x$ Film**

Ryo Ono, Shinya Imai, Takamasa Kawanago, Iriya Muneta, Kuniyuki Kakushima, Kazuo Tsutsui, Tetsuya Tatsumi, Shigetaka Tomiya and Hitoshi Wakabayashi

*Tokyo Institute of Technology*

**[P-009]**

**Atomic Layer Deposition of Titanium Oxide Films with Acetone for Capacitors**

Daeun Lim[1], Eun A Kim[2], Seong-Yong Cho[2] and Woongkyu Lee[1]

*[1]Soongsil University, [2]Myongji University*

**[P-010]**

**Evaluation Method for Refractive Index and Extinction Coefficient of EUV Mask Materials**

Dong Gi Lee[1,2], Seungchan Moon[1,2], Jinhyuk Choi[1,2], Seok Ho Song[1] and Jinho Ahn[1,2]

*[1]Hanyang University, [2]EUV Industry-University Collaboration Center*

**[P-011]**

**Atomic Layer Etching of TiN with Partial Sequence of $O_2$ Plasma and $CF_3I$ Plasma**

Sung Jun Kim, Seon Yong Kim, In-Sung Park and Jinho Ahn

*Hanyang University*

**[P-012]**

**Effect of $SiN_x$ Passivation Layer on the Radiation Efficiency of EUV Pellicle**

Won Jin Kim[12], Seong Ju Wi[12], Haneul Kim[12], Youngwoo Kang[12], Jungyeon Kim[12] and Jinho Ahn[12]

*[1]Hanyang University, [2]EUV Industry-University Collaboration Center*

**[P-013]**

**Facile and Cost-Effective TFA Doped $In_2O_3$ Photodetectors for Deep Ultra Violet Applications**

Prachi Gupta and Satinder K. Sharma

*Indian Institute of Technology Mandi*

**[P-014]**

**High-Performance Atomic Layer Deposition Derived InGaO TFTs through Sub-Cycle Control**

Gwang-Bok Kim, Jae Seok Hur and Jae Kyeong Jeong

*Hanyang University*

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**[P-015]**

**Automatic Prediction of MOSFETs Threshold Voltage by Machine Learning Algorithms**

Seoyeon Choi[1], Dong Geun Park[1], Min Jung Kim[1], Seain Bang[1], Jungchun Kim[1], Seunghee Jin[1], Ki Seok Huh[1], Donghyun Kim[1], Sanghyeok Kim[1], Inkyu Yoon[1], Jerome Mitard[2], Cheol E. Han[1] and Jae Woo Lee[1]

*[1]Korea University, [2]Imec*

**[P-016]**

**$WSe_2$ Field-Effect Transistor with Electron-Beam-Induced W-Shaped IV Characteristic and Its Application to a Ternary NAND Gate**

Maksim Andreev, Juncheol Kang, Taeran Lee and Jin-Hong Park

*Sungkyunkwan University*

**[P-017]**

**Consecutive Defective Pixel Correction for Nona Bayer CFA Pattern**

Dong Ik Kim, Jun Hyeok Choi, Cheol Jon Jang and Jong Hyun Bae

*SK hynix Inc.*

**[P-018]**

**Novel SCR Device for ESD Protection with High-Holding Voltage in 0.18um BCD Process**

Myoung Chul Lim, Young Bum Eom, Joung Cheul Choi, Sang Wook Nam and Jeong Soo Park

*SK hynix system ic Inc.*

**[P-019]**

**Vanadium Dioxide Series and Shunt RF Switches Synthesized Using Low Thermal Budget Process**

Abhishek Mishra, Ashok P, Yogesh Singh Chauhan and Amit Verma

*Indian Institute of Technology Kanpur*

**[P-020]**

**Biocompatible Memristive Devices for Brain-Inspired Applications**

Aoze Han[1], Miaocheng Zhang[1], Liwei Zhang[2], Xingyu Chen[1] and Yi Tong[1]

*[1]Nanjing University of Posts and Telecommunications, [2]Jiangsu University*

**[P-022]**

**Enhancement in Bipolar Conductance Linearity by One Transistor – One Resistor (1T1R) Cell with Non-Filamentary PCMO-RRAM as Synapse for Neural Networks**

Jayatika Sakhuja, Shubham Patil, Sandip Mondal, Sandip Lashkare and Udayan Ganguly

*Indian Institute of Technology Bombay*

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**[P-023]**

**Simulation of a Recessed Channel Ferroelectric-Gate Field-Effect Transistor with a Dual Ferroelectric Gate Stack for Memory Application**

Simin Chen[1], Dae-Hwan Ahn[2], Seong Ui An[1] and Younghyun Kim[1]

*[1]Hanyang University, [2]Korea Institute of Science and Technology*

**[P-024]**

**Performance Improvement of ZnO Based ReRAM with SiCN Oxygen Reservoir**

Woon-San Ko[1], Myeong Ho Song[1,2], Ki-Nam Kim[1], Jun-Ho Byun[1], Do-Yeon Lee[1], Eun-Gi Kim[1], Eun-A Koo[1], So-Yeon Kwon[1], Geun-Ho Kim[3], Dong-Hyeuk Choi[3] and Ga-Won Lee[1]

*[1]Chungnam National University, [2]National NanoFab Center, [3]ISTE Co., Ltd.*

**[P-025]**

**Stability and Performance Optimization of 6T SRAM Cell at Cryogenic Temperature**

Shao-Fu Fang and Vita Pi-Ho Hu

*National Taiwan University*

**[P-026]**

**Variation-Tolerant Ferroelectric FET-Based Ternary Content-Addressable Memories (TCAM) Cell for Meta-Learning Application**

Han-Fu Chuang and Vita Pi-Ho Hu

*National Taiwan University*

**[P-027]**

**$MoS_2$ – Based 3D Stackable Charge-Trap Memory with AlN Interface Layer for Reducing Optical Phonon Scattering**

Sanggeun Bae, Jungyeop Oh, Mingu Kang and Sung-Yool Choi

*Korea Advanced Institute of Science and Technology*

**[P-028]**

**Albumen Based Flexible Memory Device for Bio-Sustainable Electronics**

Anurag Dwivedi, Anil Lodhi, Shalu Saini, Harshit Agarwal and Shree Prakash Tiwari

*Indian Institute of Technology Jodhpur*

**[P-029]**

**Relaxation of Conductance during DC Voltage Pulse Off Time in TiN/Hf/$HfO_x$/Au/ $HfO_x$/ TiN –Device**

C.Y. Huang, M. Tanaka, T. Shimizu, T. Ito and S. Shingubara

*Kansai University*

**[P-030]**

**Flexible Forming Free Resistive Memory Device with 2D Material $MoSe_2$ as Switching Layer**

Shalu Saini, Anurag Dwivedi, Anil Lodhi, Arpit Khandelwal and Shree Prakash Tiwari

*Indian Institute of Technology Jodhpur*

**[P-031]**

**Charge-Trap Memory Characteristics with UV/Ozone-Treated $HfO_{2-x}$ Gate Oxide and Oxide Semiconductor Channel Layer**

Taeyun Noh, Jimin Han, Boyoung Jeong and Tae-Sik Yoon

*Ulsan National Institute of Science and Technology*

**[P-032]**

**Analog Conductance Change of Pt/NiO/Gd-Doped $CeO_2$(GDC)/Pt and Pt/GDC/NiO/Pt Memristors for Artificial Synapse Device Application**

Daejae Seo, Peter Hayoung Chung and Tae-Sik Yoon

*Ulsan National Institute of Science and Technology*

**[P-033]**

**Resistive Switching Behaviors of $CeO_2$–Based Memristors Depending on Electrode Materials for Non-Volatile Memory and Artificial Synaptic Device Applications**

Hanju Ko, Kitae Park, Sola Moon, Jiyeon Ryu, Dwipak Prasad Sahu and Tae-Sik Yoon

*Ulsan National Institute of Science and Technology*

**[P-034]**

**1D Thermophotovoltaic Emitter: Performance Comparison in $N_2$ Ambient and Air**

Minsu Oh, Kevin Grossklaus and Thomas E. Vandervelde

*Tufts University*

**[P-035]**

**Design of the Drift Layer of 0.6 – 1.7 kV Power Silicon Carbide MOSFETs for Enhanced Short Circuit Withstand Time**

Prashant Singh[1], Akshay K[1], Hema Lata Rao Maddi[2], Anant Agrawal[2] and Shreepad Karmalkar[1]

*[1]Indian Institute of Technology Madras, [2]The Ohio State University*

**[P-036]**

**Investigation of Sputtered Chalcogenide for Thin-Film Photovoltaic Application**

Mayank Dubey, Chandrabhan Patel, Sumit Chaudhary, Saurabh Yadav and Shaibal Mukherjee

*Indian Institute of Technology Indore*

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**[P-037]**

**All-Day Operation Large-Area Organic Photovoltaics under Artificial Light Source**

Selim Han[1,2], Seungyeon Koh[1], Hyojeong Choi[1], Swarup Biswas[1] and Hyeok Kim[1]

*[1]University of Seoul, [2]Korea Institute of Industrial Technology*

**[P-038]**

**P-GaN Gated AlGaN/GaN E-Mode HFETs with Activation Annealing Process**

Yeo-Reum Yang, Jun-Hyeok Yim, Won-Ho Jang and Ho-Young Cha

*Hongik University*

**[P-039]**

**Investigation of the Surface Morphological Evolution of Ga- And N-Polar GaN Grown by PA-MBE on SiC**

Lili Huo, R. Lingaparthi, N. Dharmarasu, K. Radhakrishnan and C. Chan

*Nanyang Technological University*

**[P-040]**

**The Optimized Design of the P+ Region for 1700 V 4H-SiC Double Trench MOSFET**

Chih-Lun Liu, Kung-Yen Lee, Shih-Hsuan Chen and Pei-Chun Liao

*National Taiwan University*

**[P-041]**

**Measurement and Analysis of 1.2 kV 4H-SiC Power Devices with Different Edge Termination Structures**

P.K. Chang, K.Y. Lee, H.M. Hsieh, W.T. Hsieh and C.J. Chen

*National Taiwan University*

**[P-042]**

**A 1700 V-Class Self-Aligned Channel and Split Gate (SASG) Architecture of 4H-SiC VDMOSFET for High Frequency Application**

Chia Lung Hung[1], Yi Kai Hsiao[1], Bing Yue Tsui[2] and Hao Chung Kuo[1,2]

*[1]Hon Hai Research Institute, [2]Yang Ming Chiao Tung University*

**[P-043]**

**Computer Simulation and Performance Optimization of Metal-Semiconductor-Metal Back-Contact Perovskite Solar Cells**

Iliyas T. Dossayev[1], Assylan Akhanuly[1], Erik O. Shalenov[2] and Askhat N. Jumabekov[1]

*[1]Nazarbayev University, [2]Satbayev University*

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**[P-044]**

**GA Assisted ANN Based GaN HEMT Model Development and Demonstration of Its CAD Incorporation for Class-F Power Amplifier**

Saddam Husain, Galymzhan Nauryzbayev and Mohammad Hashmi

*Nazarbayev University*

**[P-045]**

**Investigation of Fe-Doped and $T_{bffr}$ Buffer at $f_T$ 236 GHz with AlGaN/GaN HEMT for High Frequency RF Applications**

S. Angen Franklin, Binola. K. Jebalin.I.V, Sylvia Juliet Rani, Angelin Delighta and D. Nirmal

*Karunya Institute of Technology and Sciences*

**[P-046]**

**Effect of the $SnO_2$ Electron Transport Layer on the Performance of Perovskite Solar Cells**

Assylan Akhanuly[1], Iliyas T. Dossayev[1], Erik O. Shalenov[1,2,3], Constantinos Valagiannopoulos[1], Karlygash N. Dzhumagulova[1,2,3], Annie Ng[1] and Askhat N. Jumabekov[1]

*[1]Nazarbayev University, [2]Satbayev University, [3]Al-Farabi Kazakh National University*

**[P-047]**

**Analysis and Modeling of OFF-State Capacitance in LDD MOSFETs**

Ayushi Sharma, Ravi Goel and Yogesh Singh Chauhan

*Indian Institute of Technology Kanpur*

**[P-048]**

**Effect of Voltage on Specific Contact Resistivity for Ohmic Contacts**

Thanh Pham[1,2], Hiep N. Tran[2], James G. Partridge[2] and Anthony Holland[2]

*[1]RMIT University Vietnam, [2]RMIT University Australia*

**[P-049]**

**Novel Harmonic Distortion Analysis Method Using Ramo-Shockley Theorem**

Nak Won Yu, Jong Min Kim, Young Chul Kim and Hyunchul Nah

*DB HiTek Co., Ltd.*

**[P-050]**

**Process Pathfinding for Physical Deposition and Etching of Metal Layers via Simulation**

Timothy Yang

*Lam Research*

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**[P-051]**

**A Statistical Assessment of Zener Diode Behavior Using Functional Data Analysis**

Xiaoxia Champon[1,2], David Angeles[3], Thomas Buchheit[1], David Canfield[1], J. Derek Tucker[1] and Jason Adams[1]

*[1]Sandia National Laboratories, [2]North Carolina State University, [3]The Ohio State University*

**[P-052]**

**Mean Estimation and Nominal Device Selection with the Pairwise Midpoint Method**

Jason Adams[1], Thomas Buchheit[1], Abdullah Al Mamun Mazumder[2], Biazid Kabir Moghal[2], Md Fazle Rabbe[2], Ahsanul Islam[2] and Shahed Reza[1]

*[1]Sandia National Laboratories, [2]MetroScientific*

**[P-053]**

**A Study of the Non-Weibull Distribution of HK PMOS TDDB**

Jeong-Hwan Hwang, Yong Gon Lee, Sang Ho Lee and Sung Kye Park

*SK hynix Inc.*

**[P-054]**

**Prediction of Delamination at Interface of Printed Circuit Board/Epoxy Molding Compound under Mixed-Mode Loading**

Hui-Jin Um[1], Se-Min Lee[1], Dae-Woong Lee[2], Sangyul Ha[2] and Hak-Sung Kim[1,3]

*[1]Hanyang University, [2]SK hynix Inc., [3]Institute of Nano Science and Technology*

**[P-055]**

**Lifetime Prediction of the Printed Circuit Board under Marine Atmosphere Condition Using Numerical Simulation Method**

Sang-Il Kim[1], Dug-Joong Kim[1], Do-Hyung Kim[2], Dong-Min Jang[2], Jin-Woo Jang[2], Seung-Yeong Lee[2] and Hak-Sung Kim[1]

*[1]Hanyang University, [2]Samsung Electronics Co., Ltd.*

**[P-056]**

**Different Proposed Analysis with TCAD for Catastrophic Large Area Failure due to Radiation Stress on 4H-SiC Schottky Diode**

Hyeokjae Lee[1], Ji-Min Park[1], Dongwoo Bae[1], Kiseok Kim[1], Jae-Young Noh[1], Youngboo Kim[1], Jisun Park[2] and Hyungsoon Shin[2]

*[1]QRT Inc., [2]Ewha Womans University*

**[P-057]**

**Electrical Characteristics of Sub-5 nm $SnO_2$ Deposited Using Atomic Layer Infiltration (ALI) Process**

Hae-Won Lee, So-Young Kim, Ho-In Lee, Yongsu Lee, Seung-Mo Kim, Hyeon Jun Hwang and Byoung Hun Lee

*Pohang University of Science and Technology*

**[P-058]**

**Channel Thickness Dependent Optical Bandgap Observed from the P-Type Tellurium Thin Film Transistor**

Minjae Kim, Yongsu Lee, Heejin Kwon, Jangseop Lee, Seung Mo Kim, Hae-Won Lee, Jae Hyeon Jun, Hyeon Jun Hwang, Hyunsang Hwang and Byoung Hun Lee

*Pohang University of Science and Technology*

**[P-059]**

**A Novel Ultra-Low Wire Looping Technology for Emerging Packages**

Ah-Young Park, Jae Hak Lee, Seungman Kim and Sumin Kang

*Korea Institute of Machinery & Materials*

**[P-060]**

**Design of Agitation Process for Electrodeposition of Cu Post Bumps with Uniform Thickness**

Woon Young Lee[1], Sung-Min Kim[1], Yugeun Jo[1,2], Sang Hoon Jin[1], Ki-Taek Lee[1,3] and Min Hyung Lee[1]

*[1]Korea Institute of Industrial Technology, [2]Korea Aerospace University, [3]Sungkyunkwan University*

**[P-061]**

**Respiration Sensor Embedded in a Mask for Mouth Breathing Detection**

Jihun Lee, Junho Kim, Ji-Yong Moon, Seok Hyun Cho and Hongyun So

*Hanyang University*

**[P-062]**

**Ultrahigh Thermal Conductivity Material for Thermal Management in Electronics**

Joon Sang Kang

*Korea Advanced Institute of Science and Technology*

**[P-063]**

**Gr-Gb Channel Difference Improvement of CMOS Image Sensor with Transfer Gate Barrier Optimization**

Youngju Lee, Namyoon Kim, Hyosik Kim and Wonho Lee

*SK hynix system ic Inc.*

**[P-064]**

**Thermoplasmonic Nonlinearity on Plasmonic Thin Films**

Seongmin Im[1], Hongki Lee[1], Changhun Lee[1], Hyunwoong Lee[1], Ho-Pui Ho[2] and Donghyun Kim[1]

*[1]Yonsei University, [2]The Chinese University of Hong Kong*

**[P-065]**

**Investigation on Spurious Modes of FBAR Based on Discrete Fourier Transformation Method**

Jiaqi Ding, Shishang Guo, Xiyu Gu, Xiang Chen, Yao Cai, Yan Liu and Chenglian Sun

*Wuhan University*

**[P-066]**

**Influence of Boundary Conditions on FBAR Performance**

Xiang Chen, Yuanhang Qu, Jiaqi Ding, Yao Cai, Yan Liu and Chengliang Sun

*Wuhan University*

**[P-067]**

**Improvement of RTS Noise and Peel Off Issue of BSI CIS Products by Changing FEP Film Stack Raw Material**

So-Yun Kim, Joohee Kim, Heejeong Hong, Youngju Lee and Wonho Lee

*SK hynix system ic Inc.*

**[P-068]**

**A Flexible Neural Probe with Electrodeposited Silk Composite as an Insertion Shuttle**

Mi Kyung Kim, Jia Chee Leong and Hyunjoo J. Lee

*Korea Advanced Institute of Science and Technology*

**[P-069]**

**CMUT Humidity Sensor with a Calcium-Modified Silk Functionalized Layer**

Taemin Lee, Sang-Mok Lee and Hyunjoo Jenny Lee

*Korea Advanced Institute of Science and Technology*

**[P-070]**

**The Laterally Excited Bulk Wave Resonator with Smaller Bar-Width Reflectors**

Xiyu Gu[1], Yan Liu[1], Yuanhang Qu[1], Yao Cai[1], Wenjuan Liu[1], Shishang Guo[1,2] and Chengliang Sun[1,2]

*[1]Wuhan University, [2]Hubei Yangtze Memory Laboratories*

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**[P-071]**

**Development of a Smart Glove with Robust Bending Sensing Units for Advanced Human-Machine Interfacing**

Yue Hou[1,2], Hongming Cao[1,2], Yang Li[1,2], Zhaoyu Li[1,2], Qian Wang[1,2], Ziyu Wang[3] and Hongyu Yu[1,2]

*[1]The Hong Kong University of Science and Technology, [2]HKUST Shenzhen-Hong Kong Collaborative Innovation Research Institute, [3]Wuhan University*

**[P-072]**

**Experimental Results of Adjusting Membrane Stress and Sacrificial Layer Thickness for Targeting the Pull-In Voltage of Capacitive MEMS Microphone Structure**

Ju Chan Choi, Young Chan Choi, Seok Jo Chang, Kwan Soo Kim, Tae Won Lee and Jae Hee Lee

*SK hynix system ic Inc.*

**[P-073]**

**Inkjet-Printed Temperature Sensor for Wearable Applications**

Peter Krebsbach[1,2], Manuel Pietsch[1,2], Daniel Marshallsay[1,2] and Gerardo Hernandez-Sosa[1,2]

*[1]Karlsruhe Institute of Technology, [2]InnovationLab GmbH*

**[P-074]**

**Printed Flexible Quasi-Interdigitated Back-Contact Perovskite Solar Cells**

Hryhorii P. Parkhomenko and Askhat N. Jumabekov

*Nazarbayev University*

**[P-075]**

**Mechanochemical Synthesis of Zero-Dimensional Metal Halide Perovskites**

Yongjin Kim, Kyeong-Yoon Baek, Hyeonmin Choi, Joonha Jung, Takhee Lee and Keehoon Kang

*Seoul National University*

**[P-077]**

**Strategies for Improving the Device Performance of 2D Perovskite Field-Effect Transistors**

Hyeonmin Choi[1], Seok Woo Lee[1], Joonha Jung[1], Yeeun Kim[1], Jaeyong Woo[1], Youjin Reo[2], Yong Young Noh[2], Takhee Lee[1] and Keehoon Kang[1]

*[1]Seoul National University, [2]Pohang University of Science and Technology*

**[P-078]**

**Presence or Absence of an Ideality Factor in Organic Single-Layer Rectifying Diodes**

Joon Hyung Park and Chang-Hyun Kim

*Gachon University*

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**[P-079]**

**Optimization of Solution-Processed Organic Transistors with Inkjet-Printed Ag Electrodes**

Jisuk Bae and Chang-Hyun Kim

*Gachon University*

**[P-080]**

**The Role of Si during the Chemical Reaction between $XeF_2$ and 2D Materials**

Subin Shin[1,3], Yongjun Shin[2], Gwan-Hyoung Lee[2] and Jangyup Son[1]

*[1]Korea Institute of Science and Technology, [2]Seoul National University, [3]Kyung Hee University*

**[P-081]**

**Fluorinated Graphene Passivation Layer for $MoS_2$ Field Effect Transistors**

Huije Ryu[1], Dong-Hyun Kim[2,3], Junyoung Kwon[4], Sang Kyu Park[2], Wanggon Lee[5], Hyungtak Seo[5], Kenji Watanabe[6], Takashi Taniguchi[6], SunPhil Kim[7], Arend M. van der Zande[7], Jangyup Son[2,8] and Gwan-Hyoung Lee[1]

*[1]Seoul National University, [2]Korea Institute of Science and Technology, [3]Sungkyunkwan University, [4]Yonsei University, [5]Ajou University, [6]National Institute for Materials Science, [7]University of Illinois Urbana-Champaign, [8]KIST School University of Science and Technology*

**[P-082]**

**Multifunctional $WSe_2/MoS_2$ Heterojunction Devices with Graphene Floating Gates Inserted**

Changheon Kim[1,2], Junechul Shin[2], Donghyun Kim[1,3], Yunjo Jeong[1], Daeyoung Jeon[1], Dongsu Lee[1], Gwanhyoung Lee[2] and Jangyup Son[1]

*[1]Korea Institute of Science and Technology, [2]Seoul National University, [3]Sungkyunkwan University*

**[P-083]**

**Spontaneous Self-Folding of Monolayer Graphene by Thermal Treatment**

Yunjo Jeong[1], Sangmin An[2] and Jangyup Son[1]

*[1]Korea Institute of Science and Technology, [2]Jeonbuk National University*

**[P-084]**

**Surface Functionalization of Graphene: Effect of Doping and Substrate**

Hyunjun Kim, Huije Ryu and Gwan-Hyoung Lee

*Seoul National University*

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**[P-085]**

**Reconfigurable Two-Dimensional Floating-Gate Field-Effect Transistors for Logic-in-Memory**

June-Chul Shin, Hyun Young Choi and Gwan-Hyoung Lee

*Seoul National University*

**[P-086]**

**Sol–Gel Synthesized Zinc Oxide/Silica Composite Films for Electrolyte-Gated Transistors**

Taeheon Kwak, Dongyeol Seo, Donguk Kim and Felix Sunjoo Kim

*Chung-Ang University*

**[P-087]**

**Nanoscale Morphology and Electrical Characteristics of Conducting Polymer Blend Films**

Jaehee So, Taemin Kim, Donguk Kim and Felix Sunjoo Kim

*Chung-Ang University*

**[P-088]**

**Abnormal Behaviors of B Excitons in hBN-Encapsulated $MoSe_2$**

Seong Chul Hong[1], Yeonjoon Jung[1], Ji-Hwan Baek[1], Youngbum Kim[2], Jeongyong Kim[2] and Gwan-Hyoung Lee[1]

*[1]Seoul National University, [2]Sungkyunkwan University*

**[P-089]**

**Quasi-van der Waals Epitaxial Recrystallization of Gold Thin Film into Crystallographically Aligned Single Crystals**

Yunah Lee[1], Yunyeong Chang[1], Huije Ryu[1], Jong Hun Kim[1], Kenji Watanabe[2], Takashi Taniguchi[2], Miyoung Kim[1] and Gwan-Hyoung Lee[1]

*[1]Seoul National University, [2]National Institute for Materials Science*

**[P-090]**

**Van der Waals Epitaxial Growth of One-Dimensional Chalcogen Single Crystals on Two Dimensional Material Templates**

Jaewoong Joo, Yeonjoon Jung and Gwan-Hyoung Lee

*Seoul National University*

**[P-091]**

**Operando TEM Study of Pinning Behavior in Twisted Bilayer Transition Metal Dichalcogenides**

Kahyun Ko, Ayoung Yuk and Hyobin Yoo

*Sogang University*

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# 7th IEEE Electron Devices Technology and Manufacturing (EDTM) Conference 2023

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**[P-093]**

**Graphene Origami with Bi-Directional and Reversible Foldability**

Donghoon Moon, Jiwoo Kim and Gwan-Hyoung Lee

*Seoul National University*

**[P-094]**

**Commercial Chemical Vapour Deposited Hexagonal Boron Nitride: How Far Is It from Mechanically-Exfoliated-Like Quality?**

Yue Yuan, Wenwen Zheng, Yaqing Shen and Mario Lanza

*King Abdullah University of Science and Technology*

**[P-095]**

**Exciton-Dominant Photoluminescence of $MoS_2$ by a Functionalized Substrate**

Kyungmin Yang[1], Eunji Ji[2], June-Chul Shin[1], Youngbum Kim[3], Jin-Woo Park[2], Jeongyong Kim[3] and Gwan-Hyoung Lee[1]

*[1]Seoul National University, [2]Yonsei University, [3]Sungkyunkwan University*

**[P-096]**

**Integrate-And-Fire Neurons for Spiking Neural Networks Based on Threshold Resistive Switching in Multilayer Hexagonal Boron Nitride**

Osamah Y. Alharbi, Fernando Aguirre, Sebastian Pazos and Mario Lanza

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**[P-097]**

**Unveiling Root Cause of Defect Assisted Filamentation and Implication on Resistive Switching in $MoS_2$ Atomristor**

Asif A. Shah, Jeevesh Kumar, Aadil Bashir Dar and Mayank Shrivastava

*Indian Institute of Science*

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**Schottky Barrier MOSFET Enabled Ultra-Low Power Real-Time Neuron for Neuromorphic Computing**

Shubham Patil, Jayatika Sakhuja, Ajay Kumar Singh, Anmol Biswas, Vivek Saraswat, Sandeep Kumar, Sandip Lashkare and Udayan Ganguly

*Indian Institute of Technology Bombay*

**[P-099]**

**System-Level Performance of $MoS_2$ Synaptic Transistors in MLP and DNN Architectures**

Aaseesh Rallapalli and Shubhadeep Bhattacharjee

*Indian Institute of Technology Hyderabad*

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**[P-100]**

**High-Speed 405nm Violet Superluminescent Diode for 3.6 Gbps Visible Light Communication**

Mengxi Dong[1], Junfei Wang[1], Chicheng Ma[1], Dong Li[1], Shanshan Wang[1], Lulu Zha[1], Nan Chi[1,2] and Chao Shen[1,2]

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**[P-101]**

**Enhanced Efficiency Roll-off Characteristics in Quantum Dot Light-Emitting Diodes by Engineering Interface of Bilayer Electron Transport Layers**

Kyoung Eun Lee[1], Jaeyeop Lee[1], Jaehoon Kim[2] and Jeongkyun Roh[1]

*[1]Pusan National University, [2]Dong-A University*

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**Photonically Generated Waveforms Based on Single and Double Injection in a Semiconductor Laser for RADAR Applications**

Anuar Turekhanov[1], Suanu Nwigbo[1], Arman Lee[1], Bikash Nakarmi[2], Ikechi A. Ukaegbu[1]

*[1]Nazarbayev University, [2]Nanjing University of Aeronautics and Astronautics*

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**Improved Performance of InP-Based Quantum Dot Light-Emitting Diodes by Employing a Cascading Hole Injection/Transport Layer**

Yeyun Bae, Jaeyeop Lee and Jeongkyun Roh

*Pusan National University*

**[P-104]**

**Asymmetric Pair of Current Assisted Photonic Demodulator for Low Power, High Modulation Performances**

Hoon-Moo Choi, Jaehyung Jang, Wooju Jeong, Jongchae Kim, Jaewon Lee, Gyubeom Hwang, Kyungdo Kim, Hoon-Sang Oh and Chang-Rock Song

*SK hynix Inc.*

**[P-105]**

**Investigation of DIBS-Deposited $Mg_{0.05}Zn_{0.95}O$ Film for Optoelectronic Application**

Ruchi Singh[1], Ritesh Bhardwaj[2], Gaurav Siddharth[3], Pawan Kumar[1] and Shaibal Mukherjee[1]

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**[P-106]**

**Performance Variation with Changes In Ultrathin Ge film Thickness of Self-Aligned Double-Gate Cu-MIC Low-Temperature Poly-Ge TFTs on Glass Substrates**

Sho Suzuki and Akito Hara

*Tohoku Gakuin University*

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**A Multiple Junction Photonic Demodulator with Low Power Consumption for Time-Of-Flight Application**

Shun-Qi Dai[1,2], Cristine Jin Estrada[1,2,] Annan Xiong[1,2], Huanmei Yuan[1,2], Songcen Xu[1], Chen Xu[3], Jie George Yuan[1,2] and Mansun Chan[1,2]

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