

2020 Device Research Conference Poster Program

Monday, June 22, 2020, 19:00PM – 21:00PM (Eastern Daylight Time)

Poster Session I	
#1A	Shun-ichiro Ohmi (Tokyo Institute of Technology, Japan) Low-Voltage Operation of MFSFET with Ferroelectric Nondoped HfO ₂ Formed by Kr/O ₂ -Plasma Sputtering
#1B	Han-Yin Liu (National Sun Yat-Sen University, Taiwan) Enhanced Performance of Amorphous InGaZnO-based Transparent Thin-Film Transistors by Modifying Precursors for Mist Atmospheric Pressure Chemical Vapor Deposition (Paper Withdrawn)
#1C	James L Doherty (Duke University) Capping Layers to Improve the Electrical Stress Stability of MoS ₂ Transistors
#1D	Wenjian Liu (University of California, Santa Barbara) Near-ideal Ru/N-polar GaN Schottky diode with ultralow reverse leakage
#1E	Jun Tao (University of Southern California) Monolithic InAs Photoconductive Detectors on Si/SiO ₂ substrates
#1F	Pai-Ying Liao (Purdue University) Scaling of Electric Transport Properties of Tellurium Atomic Chains
#1G	Chih-Pin Lin (National Chiao Tung University, Taiwan) Phase and Carrier Polarity Control of Sputtered MoTe ₂ by Plasma-induced Defect Engineering
#1H	Jun Tao (University of Southern California) A Platform for Monolithic Back End of Line III-V Integration (Paper Moved to Session II. 2AB)
#1I	John D. Stearns (University of Colorado, Boulder) High Frequency Characteristics of Graphene Geometric Diodes
#1J	Takumi Negoro (Tohoku University, Japan) A Novel Grating-Gate Plasmonic THz Detector with Photovoltage Gate-Readout for Use in High-Speed Wireless Communications
#1K	Jimin Kwon (Pohang University of Science and Technology, South Korea) Printed 2-V Dual-Gate CNFETs with an Enhanced Depletion Behavior
#1L	Yi-Ping Huang (National Cheng Kung University, Taiwan) Normally-Off InAlN/GaN Fin-MOSHEMT with Fluorine Treatment
#1M	Omor Shoron (University of California Santa Barbara) 3D Dirac Semimetal Channel Field Effect Transistor with 4 A/mm Current Density and Transconductance greater than 120 mS/mm (Paper Withdrawn)
#1N	Elliott Brown (Wright State University) RTD Light Emission around 1550 nm with IQE up to 6% at 300 K

#1O	Dongqi Zheng (Purdue University) Concisely Bi-Directional Controlling Flat-Band and Threshold Voltage Using Single-Cycle ALD Intermixed-Dipole Engineering
#1P	Seunghyun Lee (The Ohio State University) Multiplication characteristics of $\text{Al}_{0.4}\text{Ga}_{0.07}\text{In}_{0.53}\text{As}$ avalanche photodiodes grown as digital alloys on InP substrates
#1Q	Hadrian Aquino (University of Notre Dame) Using Coplanar Waveguides as Spin-Wave Sources with Improved Bandwidth
#1R	Saurav Roy (University of Utah) Improving the BV-Ron trade-off of $\beta\text{-Ga}_2\text{O}_3$ vertical Schottky barrier diode Using Dielectric Superjunction
#1S	Chao-Yin Kuo (National Cheng Kung University, Taiwan) Near-Nernstian pH Sensors Based on Hydrothermally Grown NiO Nanosheets on Hierarchically Roughened Si Substrates
#1T	Tianning Liu (Pennsylvania State University) High Frequency Flexible Thin-Film PZT Ultrasonic Transducers
#1U	Jinhyun Noh (Purdue University) Robust $\beta\text{-Ga}_2\text{O}_3$ Ferroelectric Field-Effect Transistors in Harsh Environments
#1V	Xiaohan Wu (The University of Texas at Austin) Understanding of Multiple Resistance States by Current-sweep Measurement and Compliance Current Modulation in 2D MoS_2 -based Non-volatile Resistance Switching Devices
#1W	Chia-Chun Yen (National Taiwan University) Mobility Enhancement and Reliability Characterization of Back-Channel-Etch Amorphous InGaZnO TFT with Double Layers
#1X	Yuan-Chun Luo (Georgia Institute of Technology) Modeling Multi-states in Ferroelectric Tunnel Junction
#1Y	Aravindh Kumar (Stanford University) Doped WS_2 transistors with large on-off ratio and high on-current
#1Z	KyungEun Park (Tokyo Institute of Technology, Japan) High-k LaB_xN_y gate insulator formed by the Ar/ N_2 plasma sputtering of N-doped LaB_6 metal thin films and its application to floating-gate memory

Wednesday, June 24, 2020, 14:00PM – 16:00PM (Eastern Daylight Time)

Poster Session II	
#2A	Dong Ji (Stanford University) Demonstration of GaN Impact Ionization Avalanche Transit-Time (IMPATT) Diode
#2B	Molla Manjurul Islam (University of Central Florida) Optoelectronic Synapse Using Monolayer MoS ₂ Field Effect Transistors for Neuromorphic Applications
#2C	Andrew H. Jones (University of Virginia) 2- μ m-Compatible AlInAsSb Avalanche Photodiodes
#2D	Mehdi Saremi (Applied Materials) Modeling and Optimization of Advanced 3D NAND Memory
#2E	Yury Yu. Illarionov (TU Wien, Austria) Anomalous Instabilities in CVD-MoS ₂ FETs Suppressed by High-Quality Al ₂ O ₃ Encapsulation
#2F	Kartikey Thakar (Indian Institute of Technology Bombay, India) Optically-induced Frequency and Phase Modulation in Electrostatically Doped Anti-ambipolar WSe ₂ Transistors
#2G	Zhe Ashley Jian (University of Michigan) Deep UV-assisted C-V Characterization of Post-deposition Annealed Al ₂ O ₃ / β -Ga ₂ O ₃ (001) MOSCAPs
#2H	Jinyoung Park (University of Massachusetts, Amherst) High-Density Multilayer Graphene Microelectrode Arrays for Optogenetic Electrophysiology in Human Embryonic Kidney Cells
#2I	Adithi Krishnaprasad (University of Central Florida) Engineering Linear and Symmetric Synaptic Weight Update in Graphene/MoS ₂ Cross-point Devices
#2J	Niharika Thakuria (Purdue University) Polarization-induced Strain-coupled TMD FETs (PS FETs) for Non-Volatile Memory Applications
#2K	Christopher R. Allemang (University of Michigan) Area-selective Atomic Layer Deposition of High Mobility Zinc-Tin-Oxide for Thin-film Transistors Patterned by Electrohydrodynamic-jet Printing
#2L	Durjoy Dev (University of Central Florida) Artificial Nociceptor Using Two-terminal 2D MoS ₂ Threshold Switch
#2M	Isaac Ruiz (Sandia National Laboratories) Deeply Depleted Graphene-Oxide-Semiconductor Junctions on III-V Semiconductor Substrates for High Responsivity Photodetection (Paper Withdrawn)
#2N	Jeevesh Kumar (Indian Institute of Science, India) Defect Assisted Metal-TMDs Interface Engineering: A First Principle Insight

#2O	Peng Cui (University of Delaware) Enhanced Electrical Performance of Forming Gas Annealed InAlN/GaN HEMTs on Silicon with f_T/f_{max} of 165/165 GHz
#2P	Raihan Sayeed Khan (University of Connecticut) Stopping Resistance Drift in Phase Change Memory Cells
#2Q	Samiran Ganguly (University of Virginia) Proposal for a Magnetic Racetrack based Temporal Memory for Race Logic
#2R	Muhammad Bilal Khan (Helmholtz-Zentrum Dresden-Rossendorf, Germany) Towards Scalable Reconfigurable Field Effect Transistor using Flash Lamp Annealing
#2S	Sebastian Lukas (RWTH Aachen University, Germany) Correlation of Material Structure and Electronic Properties in 2D Platinum-Diselenide-based Devices
#2T	Akanksha Rohit (Ohio University) Ultra-Durable and Reliable High-k Textile Capacitors for Wearables and Robotics
#2U	Junkang Li (Purdue University) Ferroelectric Tunnel Junction Memory by the Intrinsically Asymmetric Structure of $Hf_{0.5}Zr_{0.5}O_2/Al_2O_3$ Ferroelectric/Dielectric Stack
#2V	Himani Jawa (IIT Bombay, India) Enhanced Photo-response of an MoS_2 Transistor Using Embedded BP
#2W	Fiheon Imroze (Indian Institute of Technology Madras, India) Effect of Recessed Electrodes on Contact Resistance in Organic Thin Film Transistor Based on Polymer Dielectric
#2X	Zhihui Cheng (NIST & Purdue) Are 2D Interfaces Really Flat?
#2Y	Nicolas Wainstein (Technion - Israel Institute of Technology) Electrothermal Compact Modeling of Indirectly Heated Phase Change RF Switches
#2Z	Yu Shen (University of California Riverside) Fully integrated paper microfluidic single-walled carbon nanotubes chemiresistive biosensor arrays for multiplexed point-of-care diagnostics
#2AA	Matthew Hartensveld (Rochester Institute of Technology) Field Effect Light-Emitting Diode Integration for Enhanced Hole Utilization
#2AB	Jun Tao (University of Southern California) A Platform for Monolithic Back End of Line III-V Integration