

2024 COE Poster List

	Title	Presenter
1	Multiscale approach for charged point defects in Bulk and Slab SiC, SiO ₂ , and GaN	Renee van Ginhoven, AFRL/RD
2	Intrinsic and extrinsic defects in AlN and AlGaN	Art Edwards, AFRL/RV
3	Alloying and doping effects on radiation hardening properties of wide gap semiconductors and scintillator crystals	Arnold Burger of Fisk University
4	Heterogeneous integration of GaN-HEMTs for RF applications	Mona Ebrish of Vanderbilt University
5	Extreme permittivity for electric field management: overcoming SEEs in wide bandgap space power electronics	Shin Mou of AFRL/Materials and Manufacturing
6	Beyond shielding: toward intrinsic and extrinsic radiation resistance in polymer-based hybrid materials for space environments	Larry Drummy of AFRL/ Materials and Manufacturing
7	2D material-polymer multilayers for simultaneous IR-RF detection	Jarrett Vella of AFRL/Sensors
8	Model for ultrafast carrier scattering in semiconductors	Danhong Huang of AFRL/RV
9	Exploring AlGaIn defects with molecular dynamics	Farshid Reza, Penn State
10	First-principles calculations of nonradiative carrier capture rates for defect complexes in AlGaIn systems	Alex Hauck, Penn State
11	Mechanisms of cavity formation in GaN devices induced by swift heavy ion irradiation	Mahjabin Mahfuz, Penn State
12	Investigating the Impact of Radiation on AlGaIn with Varying Aluminum Composition Using High-Resolution X-Ray Diffraction	TBD, CMU
13	High Resolution X-Ray Diffraction Analysis of Proton Irradiated GaN	TBD, CMU
14	GaN device test structures	Yuxin Du, Penn State
15	Heavy Ion Irradiation Experiments	TBD, Penn State
16	AC-Gm method to identify defects in GaN	TBD, Duke U
17	1/f noise in GaN MESFETs and JFETs	TBD, Duke U
18	Design and Operation of an In Situ NZFMR Spectrometer for Utilization at the Sandia Ion Beam Lab	Ashton Higgins, Penn State
19	Studies of Multiple Types of GaN and SiC Devices with NZFMR and EDMR	Dustin Hassenmayer, Penn State
20	Hyperfine coupling of native defects in wurzite GaN from hybrid ab initio/real-space propagator simulations	Joe Sink, U Iowa
21	The effect of multiple cell upsets on the probability of error correcting codes failures	Stefania Esquer, Vanderbilt U
22	Role of epitaxial layer thickness in single-event burnout of Ga ₂ O ₃ Schottky diodes	Sajal Islam, Vanderbilt U
23	Molecular dynamics for silicon single-event displacement damage	Grant Mayberry, Vanderbilt U
24	Development of high Al-content AlGaIn vertical diodes for radiation studies	Ashley Wissel and Griffin Tong, UCSB
25	Research and Education for Enhancing Reliability and Performance of GaN Devices	Enxia Zhang, U Central Florida
26	Enabling High-Speed Characterization of Radiation Effects in Electronic-Photonic Integrated Circuits	James Trippe and Robert Reed, Vanderbilt U

27	Dielectric Engineering for Radiation-Tolerant WBG and UWBG Electronics Siddharth Rajan	Ohio State U
28	The SCALE Workforce Development Program in Radiation Hardened Microelectronics Brian Sierawski	Vanderbilt U
29	Radiation Effects on Gallium Oxide MOSFETs	Ricky Cadena, Vanderbilt