CURRICULUM VITAE

Ravindra P. Joshi

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EDUCATION

Ph.D. Electrical Engineering, Arizona State University, (1988).
M. Tech. Electrical Engineering, Indian Institute of Technology, India, (1985).
B. Tech. Electrical Engineering, Indian Institute of Technology, India, (1983).

EXPERIENCE

1/15– Present Professor, Electrical & Computer Engineering, Texas Tech University

05/01– 12/14 Professor, Electrical & Computer Engineering, Old Dominion University.

05/95–05/01 Associate Professor, Electrical & Comp. Engineering, Old Dominion University.

05/99 - 07/99 Visiting Scientist, Motorola Incorporated.

05/97 - 07/97 ASEE Summer Faculty Fellow, NASA Goddard Space Flight Center.

08/96 - 12/96 Visiting Scientist, Oak Ridge National Laboratory.

06/95 - 07/95 Air Force Summer Faculty Fellow, Philips Laboratory/AFRL.

08/89-05/95 Asst. Prof., Electrical & Computer Engineering, Old Dominion University.

05/88 - 07/89 Post Doctoral Research Fellow, Center for Solid State Electronics Research, Arizona State University.

08/85 - 05/88 Research Associate, Arizona State University.

07/83 - 07/85 Teaching Assistant, Indian Institute of Technology.

PROFESSIONAL ENGINEER

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NATIONALITY: US citizen

CONSULTING ACTIVITIES

08/2009 – 2009	Air Force Research Laboratory, Albuquerque, NM.
08/2003 - 12/2007	Air Force Research Laboratory, San Antonio, TX.
05/1999 - 12/1999	Motorola Incorporated, AZ.
07/1999 – 07/2005	Sandia National Laboratories, NM.
08/1996 - 08/1997	Oak Ridge National Laboratory, TN.
07/1992 - 12/1992	Tetra Corp., NM.

PUBLICATIONS SUMMARY

- Journal Articles Published to Date: **225**
- Citations: **11,514** (http://scholar.google.com/citations?user=5m5bnQUAAAAJ&hl=en)
- **1** Book – *Ultrashort Electric Pulse Effects in Biology and Medicine* (Springer, New York, 2021), ISBN: 978-981-10-5113-5
- **8** Book Chapters
- (Conference Presentations and Proceedings Publications Ignored for Brevity)
- **1** Patent ("Modulation of Neuromuscular Functions with Ultrashort Electrical Pulses," US Patent Pub. No.: US2008/0228244 A1, 8139339)

AWARDS AND RECOGNITIONS SUMMARY (CHRONOLOGICAL)

- Editor of Distinction, Springer Nature – **2025**
- Elected Fellow of the American Association for the Advancement of Science (AAAS) – **2024**
- IEEE William Dunbar Award – **2022** (1 international Award given once every 2 years)
- Fulbright award – **2019**
- Stanford University's list of 100,000 most-cited authors worldwide – (**2017** - present)
- NPSS Merit Award (**2017**) for ″significant and sustained contributions to bioelectrics and physics-based understanding of high field phenomena in pulsed power applications″
- Elected Fellow of the Institute of Engineering and Technology (IET, UK) – **2014**
- Elected Fellow of the Institute of Physics (IOP) – **2014**
- Elected Fellow of the Institution of Electronics & Telecommunication Engineers – **2014**
- Elected Fellow of the Institute of Electrical and Electronics Engineers (IEEE) -- **2008**

REFEREED, INTERNATIONAL JOURNAL PUBLICATIONS (at TTU, 2015-onwards)
(Average Annual Rate of Journal Publications Per Year At TTU = 72/10.5 = 6.85)

1. A. E. Nezhad, T. T. Sabour and **R. P Joshi**, M. S. Javadi, and P. H. J. Nardelli, ″Optimal Operation of Electric Vehicle Supply Equipment by Aggregators in Local Energy Community,″ IEEE Access **13**, 112867 (2025).

2. A Mishra and **R. P. Joshi**, ″Assessing Thresholds for Nerve Activation and Action Potential Block Using a Multielectrode Array to Minimize External Stimulation,″ *Bioengineering* **12**, 372 (2025).

3. A. E. Nezhad, T. T. Sabour and **R. P Joshi**, ″Coordinated TSO-DSO Operational Planning for Congestion Management in Day-ahead and Real-time Markets,″*Elsevier's e-Prime - Advances in Electrical Engineering, Electronics and Energy* **12**, 100981 (2025).

4. Y. M. Pokhrel, S. Portillo, and **R. P. Joshi**, ″Outgassing Reductions via Quasi-Isentropic Ramp Compression: A Molecular Dynamics Study in a Copper Anode,″ *Physics of Plasmas* **32**, 013512 (2025).

5. S. J. Wyss, W. Milestone, **R. P. Joshi**, and A. L. Garner, ″Maps of Membrane Pore Dynamics from Picosecond to Millisecond Pulse Durations,″ *IEEE Trans. Biomed. Engineering* **72**, 768 (2025).

6. C. Baker, A. Willis, W. Milestone, M. Baker, A. L. Garner, and **R. P. Joshi**, ″Numerical Assessments of Geometry, Proximity and Multi-Electrode Effects on Electroporation in Mitochondria and the Endoplasmic Reticulum to Nanosecond Electric Pulses,″ *Scientific Reports* **14**, 23854 (2024).

7. M. S. Munsi, H. Chaoui, and **R. P. Joshi**, ″Comprehensive Analysis of Fuel Cell Electric Vehicles: Challenges, Powertrain Configurations, and Energy Management Systems,″ *IEEE Access* **12**, 145459 (2024).

8. Y. M. Pokhrel, S. C. Shrestha, Y. Iqbal, S. Portillo, and **R. P. Joshi**, ″Calculations for Preemptive Surface Adsorbate Drive Off to Minimize Plasma Formation During Operation of High-Power Microwave Sources,″ *Journ. Appl. Phys.* **136**, 043303 (2024).

9. Y. M. Pokhrel, Y. Iqbal, S. C. Shrestha, M. Sanati, and **R. P. Joshi**, ″Coupled Monte Carlo Density Functional Theory Calculations of Cold and Laser Assisted Electron Field Emission from a Graphene Coated Copper Cathode,″ *Journ. Appl. Phys.* **135**, 223301 (2024).

10. M. Sokol, C. Baker, M. Baker, and **R. P. Joshi**, ″Simple Model to Incorporate Statistical Noise Based on a Modified Hodgkin-Huxley Approach for External Electrical Field Driven Neural Responses,″ *Biomedical Physics & Engineering Express* **10**, 045037 (2024).

11. A. M. Loveless, S. J. Wyss, W. Milestone, **R. P. Joshi**, and A. L. Garner, ″A Simplified Electrical-Based Model for Electroporation Dynamics,″ *IEEE Access* **12**, 8004 (2024).

12. C. Baker, W. Milestone, A. L. Garner, and **R. P. Joshi**, ″Selective Electroporation of Tumor Cells Under AC Radiofrequency Stimulation – A Numerical Study,″ *IEEE Trans. Biomedical Engineering* **71**, 114 (2024).

13. W. Milestone, C. Baker, A. L. Garner, and **R. P. Joshi**, ″Electroporation From Mitochondria to Cell Clusters: Model Development Toward Analyzing Electrically Driven Bioeffects Over a Large Spatial Range,″ *Journal of Applied Physics* **133**, 244701 (2023).

14. **R. P. Joshi**, A. L. Garner, and R. Sundararajan, ″Review of Developments in Bioelectrics as an Application of Pulsed Power Technology,″ *IEEE Trans. Plasma Sci.* 51, 1682 (2023).

15. L. Diaz, A. A. Karkash, S. Alshahri, **R. P. Joshi**, E. Schamiloglu, and M. Sanati, "Importance of Surface Morphology on Secondary Electron Emission: A Case Study of Cu covered with Carbon, Carbon Pairs, or Graphitic-like Layers," *Scientific Reports (Nature Publishing Group)* **13**, 8260 (2023).

16. W. Milestone, Q. Hu, A. L. Garner and **R. P. Joshi**, ″Sinusoidal RF Simulations for Optimized Electroporation Protocols,″ *Journ. Appl. Phys.* **133**, 174702 (2023).

17. M. Maille, N. C. Dennis, Y. M. Pokhrel, M. Sanati, and **R. P. Joshi**, ″Simulation Studies of Secondary Electron Yield With Electron Transport From Cu (110) Surfaces Containing C_2, N_2, CO_2, or NO_2 Adsorbates,″ *Frontiers in Materials* **11**, 1145425 (2023), doi: 10.3389/fmats.2023.1145425.

18. L. Silvestre, J. Stephens, J. Dickens, J. Mankowski, A. Neuber, and **R. P. Joshi**, ″A 1D1V Continuum Vlasov–Poisson Multipactor Analysis From Onset to Saturation Across the Entire First-Order Multipactor Regime,″ *IEEE Trans. Plasma Sci.* **51**, 483 (2023).

19. M. Brown, W. Milestone, and **R. P. Joshi**, "Numerical Analysis for Suppression of Charge Growth Using Nested Grooves in Rectangular Waveguides," *Journal of Applied Physics* **132**, 213304 (2022).

20. X. Qiu, B. Esser, I. Aponte, J. Mankowski, J. Dickens, and A. Neuber, and **R. P. Joshi**, "Assessing the Role of Photon Processes in Facilitating Radio-Frequency Breakdown of Air at Atmospheric Pressure in Millimeter Gap," *IEEE Transactions on Plasma Science* **50**, 4724 (2022).

21. T. Buntin, M. Abide, A. Neuber, J. Dickens, **R. P. Joshi**, and J. Mankowski, "Evaluation of Explosive Emission Carbon Fiber Cathodes for High-Power Microwave Devices," *IEEE Transactions on Plasma Science* **50**, 3459 (2022).

22. W. Milestone, S. Nikishin, and **R. P. Joshi**, "Density Dependent Effects on Pulse Compression in GaN Photodetectors Probed by Monte Carlo Studies," *MDPI Electronics* **11**, 2997 (2022).

23. M. Brown, L. Diaz, A. Aslan, M. Sanati, S. Portillo, E. Schamiloglu, and **R. P. Joshi**, "Carbon-Oxygen Surface Formation Enhances Secondary Electron Yield in Cu, Ag and Au: A coupled first-principles, Monte Carlo Analysis," *Scientific Reports (Nature Publishing Group)* **12**, 15808 (2022).

24. W. Milestone, Q. Hu, A. Loveless, A. Garner, and **R. P. Joshi**, "Modeling Coupled Single Cell Electroporation and Thermal Effects From Nanosecond Electric Pulse Trains," *Journ. Appl. Physics* **132**, 094701 (2022).

25. M. Brown, M. Sanati, and **R. P. Joshi**, "Combined First Principles-Monte Carlo Analyses to Evaluate the Effect of Surface Hydrogen on the Secondary Electron Yield of Nickel," *Journ. Appl. Physics* **131**, 103301 (2022).

26. S. N. Sami, R. Islam, S. Portillo, E. Schamiloglu, and **R. P. Joshi**, "Numerical Evaluations of Hydrogen Outgassing from Cesium Coated Carbon Fiber Electrodes," *Vacuum* **198**, 110869 (2022).

27. A.T. Hewitt, B. Esser, **R. P. Joshi**, J. Mankowski, J. Dickens, A. Neuber, R. Lee, J. Stephens, "Optically Activated, In-waveguide, Semiconductor Attenuators for the Controllable Isolation of Ka-band Microwaves," *IEEE Trans. Microwave Theory and Techniques* **70**, 2217 (2022).

28. L. Silvestre, J. Stephens, J. J. Mankowski, J. Dickens, A. A. Neuber, and **R. P. Joshi**, "A Continuum Approach for Multipactor Using the Vlasov-Poisson Analysis," *J. Phys D: Applied Physics* **55**, 045202 (2022).

29. S. N. Sami, R. Islam, and **R. P. Joshi**, "Atomistic Calculations of Thermal Conductivity in Films Made From Graphene Sheets for Electron Emitter Applications," *AIP Advances* **11**, 105310 (2021).

30. D. Guo, S. N. Sami, L. Diaz, S. Sanati, and **R. P. Joshi**, "Evaluation of Electron Currents from Cesium Coated Tungsten Emitter Arrays with Inclusion of Space Charge Effects, Workfunction Changes and Screening," *Journ. Of Vacuum Science and Technology B* **39**, 054201 (2021).

31. S. N. Sami, R. Islam, R. Khare, and **R. P. Joshi**, "Simulations of Hydrogen Outgassing from Carbon Fibers," *Journ. Applied Phys*. **129**, 213303 (2021).

32. S. J. Beebe, **R. P. Joshi**, K. H. Schoenbach, and S. Xiao, in *Ultrashort Electric Pulse Effects in Biology and Medicine* (Springer, New York, 2021), ISBN: 978-981-10-5113-5.

33. W. Milestone, D. Guo, M. Sanati, K. M. Dowling, S. Hue-Riege, L. F. Voss, A. Conway, and **R. P. Joshi**, "Monte Carlo Transport Analysis to Assess Intensity Dependent Response of a Carbon-Doped GaN Photoconductor," *Journ. Applied Phys*. **129**, 195703 (2021).

34. D. Guo, W. Milestone, and **R. P. Joshi**, "Many-Particle Based Evaluations for Maximum Current Output from Bimodal Electron Emitter Arrays," *Journ. Applied Phys*. **129**, 173301 (2021).

35. S. N. Sami, M. Sanati, and **R. P. Joshi**, "Simulations of Hydrogen Outgassing and Sticking Coefficients at a Copper Electrode Surface: Dependencies on Temperature, Incident Angle and Energy," *Physical Review Research* **3**, 013203 (2021).

36. X. Qiu, M. Saed, J. J. Mankowski, J. Dickens, A. Neuber, and **R. P. Joshi**, "Model Evaluations of Multipactor Suppression in Rectangular Waveguides Through Grooved Surfaces and a Static Magnetic Field," *AIP Advances* **11**, 025039 (2021).

37. Q. Hu and **R. P. Joshi**, "Continuum Analysis to Assess Field Enhancements for Tailoring Electroporation Driven by Monopolar or Bipolar Pulsing Based on Nonuniformly Distributed Nanoparticles," *Physical Review E* **103**, 022402 (2021).

38. S. N. Sami, L. Diaz, M. Sanati, and **R. P. Joshi**, "Simulations of Field Emission from Copper Electrodes with Inclusion of Oxygen Surface Layer and Work Function Changes Based on First-Principles Calculations," *Journ. Applied Physics* **128**, 223302 (2020).

39. X. Qiu, L. Diaz, M. Sanati, J. Mankowski, J. Dickens, A. Neuber, and **R. P. Joshi**, "Coupled Analysis to Probe the Effect of Angular Assignments on the Secondary Electron Yield (SEY) from Copper Electrodes," *Physics of Plasmas* **27**, 093511 (2020).

40. Q. Hu, **R. P. Joshi**, and D. Miklavcic, "Calculations of Cell Transmembrane Voltage Induced by Time Varying Magnetic Fields," *IEEE Trans. Plasma Sci.* **48**, 1088 (2020).

41. D. Guo, S. N. Sami, and **R. P. Joshi**, "Electron Emission from Metal Emitters Subject to a High Intensity Laser in the Presence of DC Electric Fields," *AIP Advances* **9**, 105302 (2019).

42. H. Nguyen, M. Sanati, and **R. P. Joshi**, "Probing Changes in Secondary Electron Yield from Copper Electrodes Due to Surface Defects and Changes in Crystal Orientation," *Journ. Appl. Phys.* **126**, 123301 (2019).

43. J. Acharjee and **R. P. Joshi**, "Numerical Evaluation of Hydrogen Outgassing from Copper Electrodes With Mitigation Based on a Tungsten Capping Layer," *Physics of Plasmas* **26**, 093504 (2019).

44. H. Qiu, X. Wang, **R. P. Joshi**, and W. Zhao, "Numerical Study to Probe Effects of Strain Energy on Pore Formation and Their Density Distribution," *IEEE Journal of Electromagnetics, RF and Microwaves in Medicine and Biology* **3**, 276 (2019).

45. M. Abide, J. Dickens, **R. P. Joshi**, A. Neuber, and J. Mankowski, "Simulation of an S-Band MILO with Adjustable Beam Dump," *Plasma* **2**, 138 (2019).

46. Q. Hu, L. Zhang, and **R. P. Joshi**, "Simulation of Poration by Shockwave Induced Multiple Nanobubble Collapse in Cell Membranes," *AIP Advances* **9**, 045006 (2019).

47. A. R. Chowdhury, S. Nikishin, J. Dickens, A, Neuber, **R. P. Joshi**, and R. Ness, "Numerical Studies into the Parameter Space Conducive to ″Lock-On″ in a GaN

Photoconductive Switch for High Power Applications," *IEEE Trans. Dielectr. and Electrical Insulation* **26**, 469 (2019).

48. H. K. A. Nguyen, J. Mankowski, J. Dickens, A. Neuber, and **R. P. Joshi**, "Calculations of Multipactor Growth in Rectangular Waveguide," *IEEE Trans. Plasma Sci.* **47**, 1364 (2019).

49. X. Qiu, J. Mankowski, J. C. Dickens, A. A. Neuber, and **R. P. Joshi**, "Model Evaluations of Surface Modification by Energetic Incident Carbon Atoms on Graphene Coated Copper Electrodes," *Physics of Plasmas* **26**, 013501 (2019).

50. A. R. Chowdhury, R. Ness, and **R. P. Joshi**, "Assessing Lock-On Physics in Semi-Insulating GaAs and InP Photoconductive Switches Triggered by Sub-Bandgap Excitation," *IEEE Trans. Electr. Devices* **65**, 3922 (2018).

51. Q. Hu and **R. P. Joshi**, "Analysis of a Dual Shock-Wave and Ultrashort Electric Pulsing Strategy for Electro-Manipulation of Membrane Nanopores," *J. Phys. D* **51**, 285403 (2018).

52. A. R. Chowdhury, J. Dickens, A. Neuber, R. Ness, and **R. P. Joshi**, "Lock-On Physics in Semi-Insulating GaAs: Combination of Trap-to-Band Impact Ionization, Moving Electric Fields and Photon Recycling," *Journ. Appl. Phys.* **123**, 085703 (2018).

53. X. Qiu and **R. P. Joshi**, "Dynamic Analysis of Material Ejection from Cathodic Metal Nano-Tips Due to Local Heating and Field Generated Stress," *Physics of Plasmas* **25**, 022109 (2018).

54. H. Nguyen, J. Mankowski, J. C. Dickens, A. A. Neuber, and **R. P. Joshi**, "Calculations of Secondary Electron Yield of Graphene Coated Copper for Vacuum Electronic Applications," *AIP Advances* **8**, 015325 (2018).

55. H. Nguyen, J. Mankowski, J. C. Dickens, A. A. Neuber, and **R. P. Joshi**, "Monte Carlo Analysis of Field-Dependent Electron Avalanche Coefficients in Nitrogen at Atmospheric Pressure," *Physics of Plasmas* **24**, 124501 (2017).

56. Q. Hu and **R. P. Joshi**, "Comparative evaluation of transmembrane ion transport due to monopolar and bipolar nanosecond, high-intensity electroporation pulses based on full three-dimensional analyses," *Journ. Appl. Phys*. 122, 034701 (2017).

57. H. Nguyen, J. Mankowski, J. C. Dickens, A. A. Neuber, and **R. P. Joshi**, "Model Predictions for Atmospheric Air Breakdown by Radio-Frequency Excitation in Large Gaps," *Physics of Plasmas* **24**, 073505 (2017).

58. Z. Zhang, M. Giesselmann, J. Mankowski, J. Dickens, A. Neuber, and **R. P. Joshi**, "Evaluation of High Field and/or Local Heating Based Material Degradation of Nanoscale Metal Emitter Tips: A Molecular Dynamics Analysis," *Journ. Phys. D* **50**, 185202 (2017).

59. M. Janda, **R. P. Joshi**, L. Krasnoperov, Z. Machala, and S. M. Thagard, "Electrical Discharges", in the *Encyclopedia of Physical Organic Chemistry*, vol. 5 (John Wiley, N. York, 2017), pp. 2957-3010.

60. V. Meyers, A. R. Chowdhury, D. Mauch, J. C. Dickens, **R. P. Joshi**, and A. A. Neuber, "Studies of Intensity Dependent Near-Bandedge Absorption in Semi-Insulating SiC for Photoconductive Switch Applications," *Journ. Phys. D* **50**, 135104 (2017).

61. J. Song, A. L. Garner, and **R. P. Joshi**, "Effects of Thermal Gradients Created by Electromagnetic Fields on Cell Membrane Electroporation Probed by Molecular Dynamics Simulations," *Physical Review Applied* **7,** 024003 (2017).

62. A. R. Chowdhury, J. C. Dickens, A. A. Neuber, and **R. P. Joshi**, "Assessing the Role of Trap-to-Band Impact Ionization and Hole Transport on the Dark Currents of 4H-SiC Photoconductive Switches Containing Deep Defects," *Journ. Appl. Phys*. **120**, 245705 (2016).

63. Q. Hu and **R. P. Joshi**, "Cell Electroporation Modeled Using Voronoi Networks," in *Handbook of Electroporation*, edited by D. Miklavcic (Springer International Publishing AG, Cham, Switzerland, 2016), pp. 1-16, ISBN: 978-3-319-26779-1.

64. A. Majzoobi, **R. P. Joshi**, A. A. Neuber, and J. C. Dickens, "Numerical Assessment of the Role of Secondary Electron Emission on the Output Performance of Rising Sun Magnetrons with Axial Output," *IEEE Trans. Plasma Science* **10**, 2272 (2016).

65. A. Chowdhury, D. Mauch, **R. P. Joshi**, A. A. Neuber, and J. C. Dickens, "Contact Extensions Over a High-*k* Dielectric Layer for Surface Electric Field Mitigation in High Power 4H-SiC Photoconductive Switches," *IEEE Trans. Electron Devices* **63**, 3171 (2016).

66. J. Stephens, A. Fierro, S. Beeson, G. Laity, D. Trienekens, **R. P. Joshi**, J. C. Dickens, and A. A. Neuber, "Photoionization Capable, Extreme and Vacuum Ultraviolet Emission in Developing Low Temperature Plasmas in Air," *Plasma Sources Science and Technology* **25**, 025024 (2016).

67. A. Majzoobi, **R. P. Joshi**, A. A. Neuber, and J. C. Dickens, "Heating Based Model Analysis for Explosive Emission Initiation at Metal Cathodes," *AIP Advances* **5**, 127237 (2015).

68. A. Majzoobi, **R. P. Joshi**, A. Neuber, and J. Dickens, "Particle-in-Cell Based Parameter Study of 12-Cavity, 12-Cathode Rising-Sun Relativistic Magnetrons for Improved Performance," *AIP Advances* **5**, 107102 (2015).

69. H. Qiu, **R. P. Joshi**, A. Neuber, and J. Dickens, "A Model Study of the Role of Workfunction Variations in Cold Field Emission From Microstructures With Inclusion of Field Enhancements," *Semicond. Sci. Technol*. **30**, 105038 (2015).

70. R. Tiskumara, **R. P. Joshi**, D. Mauch, J. C. Dickens, and A. A. Neuber, "Analysis of High Field Effects on the Steady-State Current-Voltage Response of Semi-Insulating 4H-

SiC for Photoconductive Switch Applications," *Journal of Applied Physics* **118**, 095701 (2015).

71. **R. P. Joshi** and H. Qiu, "Asymmetric Conduction in Biological Nanopores Created by High-Intensity, Nanosecond Pulsing: Inference on Internal Charge Lining the Membrane Based on a Model Study," *Journal of Applied Physics* **118**, 094701 (2015).

72. D. Nagulapally, **R. P. Joshi**, and A. K. Pradhan, "Simulation Study of HEMT Structures with HfO_2 Cap Layer for Mitigating Inverse Piezoelectric Effect Related Device Failures," *AIP Advances* **5**, 017103 (2015).

REFEREED, INTERNATIONAL JOURNAL PUBLICATIONS (Pre-2015)

73. H. Qiu, **R. P. Joshi**, and A. K. Pradhan, "Simulation of Nanoparticle Based Enhancement of Cellular Electroporation for Biomedical Applications," *J. Appl. Phys*. **116**, 184701 (2014).

74. H. Qiu, S. Xiao, and **R. P. Joshi**, "Simulations of Voltage Transients Across Intracellular Mitochondrial Membranes Due to Nanosecond Electrical Pulsing," *IEEE Trans. Plasma Science*, **42**, 3113 (2014).

75. H. Qiu, S. Prasad, L. Ludeking, **R. P. Joshi**, and E. Schamiloglu, "Assessing the Role of Secondary Electron Emission on the Characteristics of 6-Cavity Magnetrons With Transparent Cathode Through Particle-in-Cell Simulations," *J. Appl. Phys.* **115**, 193303 (2014).

76. V. Sridhara and **R. P. Joshi**, "Evaluations of a Mechanistic Hypothesis for the Influence of Medium Ion Density on Electroporation Due to High-Intensity, Nanosecond Pulsing," *Biochimica et Biophysica Acta – Biomembranes* **1838**, 1793 (2014).

77. V. Sridhara and **R. P. Joshi**, "Numerical Study of Lipid Translocation Driven By Nanoporation Due to Multiple High-Intensity, Ultrashort Electrical Pulses," *Biochimica et Biophysica Acta – Biomembranes* **1838**, 902 (2014).

78. J. Song, **R. P. Joshi**, L. Fung, and R. K. Tripathi, "Evaluation of Current Coil Positioning for An Enhanced Hybrid Active Space-Radiation Bio-Shielding Concept," *Journal of Astrobiology and Outreach* **1**, 1000103/1-5, (2013) (http://dx.doi.org/10.4172/jao.1000103)

79. P. Maleeswaran, D. Nagulapally, **R. P. Joshi**, and A. Pradhan, "Leakage Current in High Dielectric Oxides: Role of Defect-Induced Energies," *Journ. Appl. Phys*. **113**, 184504 (2013).

80. **R. P. Joshi**, H. Qiu, and R. K. Tripathi, "Configuration Studies for Active Electrostatic Space Radiation Shielding," *Acta Astronautica* **88**, 138 (2013).

81. **R. P. Joshi**, H. Qiu, and R. K. Tripathi, "Evaluation of a Combined Electrostatic and Magnetostatic Configuration for Active Space-Radiation Shielding," *Advances in Space*

Research **51**, 1784 (2013).

82. Q. Hu, Z. Zhang, H. Qiu, M. Kong, and **R. P. Joshi**, "Physics of Nanoporation and Water Entry Driven by a High-Intensity, Ultrashort Electrical Pulse in the Presence of Cellular Hydrophobic Interactions," *Physical Review E* 87, 032704/1-9 (2013).

83. **R. P. Joshi** and S. M. Thagard, "Streamer-like Electrical Discharges in Water: Part 1. Fundamental Mechanisms," *Plasma Chemistry and Plasma Processing* **33**, 1 (2013) – ***review article***.

84. **R. P. Joshi** and S. M. Thagard, "Streamer-like electrical discharges in water: Part II. Environmental applications," *Plasma Chemistry and Plasma Processing*, **33**, 17 (2013) – ***review article***.

85. M. A. Stelzer and **R. P. Joshi**, "Evaluation of Wave Energy Generation From Buoy Heave Response Based on Linear Generator Concepts," *Journal of Renewable and Sustainable Energy* **4**, 063137 (2012).

86. **R. P. Joshi** and Q. Hu, "Evolution Dynamics of Pore Sizes, Cell Volumes, Ionic Concentrations Following High-Voltage Pulsing," *IEEE Trans. Plasma Sci*. **40**, 2355 (2012).

87. J. T. Camp, Y. Jing, J. Zhuang, S. J. Beebe, J. Song, **R. P. Joshi** and K. H. Schoenbach, "Cell Death Induced by Subnanosecond Pulsed Electric Fields at Elevated Temperatures," *IEEE Trans. Plasma Sci*. **40**, 2334 (2012).

88. **R. P. Joshi** and Q. Hu, "Energy Based Model Analysis for Membrane Blebbing in Response to a Nanosecond, High-Intensity, Electrical Pulse," *Journ. Appl. Phys*. **112**, 064703 (2012).

89. J. A. White, U. Pliquett, P. F. Blackmore, **R. P. Joshi**, K. H. Schoenbach, and J. F. Kolb, "Plasma Membrane Charging of Jurkat Cells by Nanosecond Pulsed Electric Fields," *European Biophysics Journal* **40**, 947 (2011).

90. **R. P. Joshi** and Q. Hu, "Case for Subnanosecond High-Intensity, Electrical Pulses to Biological Cells," *IEEE Trans. Biomedical Engineering* **58**, 2860 (2011).

91. **R. P. Joshi** and K. H. Schoenbach, "Electric Fields in Biological Cell and Membranes," ***invited*** Chapter in Book titled "Electromagnetic Fields in Biological Systems," *CRC Press*, Boca Raton, 2011, pp. 71-114 [ISBN: 9781439859995].

92. J. Song, **R. P. Joshi**, and K. H. Schoenbach, "Synergistic Effects of Local Temperature Enhancements on Cellular Responses in the Context of High-Intensity, Ultrashort Electric Pulses," *Med. Biol. Eng. Comput.* **49**, 713 (2011).

93. Q. Hu and **R. P. Joshi**, "Model Evaluation of Changes in Electrorotation Spectra of Biological Cells After nsPEF Electroporation," *IEEE Trans. Dielectr. Electr. Insulation* **17**, 1888 (2010).

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204. A. M. Kriman, **R. P. Joshi**, M. J. Kann, and D. K. Ferry, "Exchange Effects in Hot Plasmas in Quantum Wells and Bulk Semiconductors", *Semiconductor Science and Technology* **7**, B243-B247 (1992).

205. K. M. Connolly, S. M. El-Ghazaly, R. O. Grondin, and **R. P. Joshi**, "Dynamic Simulation of a Photoconductive Switching Experiment", *Semiconductor Science and Technology* **7**, B199-B201 (1992).

206. **R. P. Joshi**, A. M. Kriman, M. J. Kann, and D. K. Ferry, "Quantum Molecular Dynamics Treatment of Electronic Relaxation of High Density Plasmas in Two-Dimensional Structures", *Appl. Phys. Lett.* **58**, 2369 (1991).

207. R. Vaidyanathan and **R. P. Joshi**, "Simulations for an Improved Heterostructure Gunn Oscillator Based on Transit Region Doping Variations", *IEE Electr. Lett.* **27**, 1555 (1991).

208. A. N. Dharamsi and **R. P. Joshi**, "An Approximate Rate Equation Analysis for Bleaching and Excitation of Thermoluminescence", *J. Phys. D* **24**, 982 (1991).

209. **R. P. Joshi** and D. K. Ferry, "Effect of Multi-Ion Screening on the Electronic Transport in Doped Semiconductors: A Molecular Dynamics Study", *Phys. Rev. B* **43**, 9734 (1991).

210. A. M. Kriman, D. K. Ferry, M. J. Kann, and **R. P. Joshi**, "Molecular Dynamics Extensions of Monte Carlo Simulation in Semiconductor Device Modeling", *Computer Phys. Communications* **67**, 119 (1991) **– *invited paper***.

211. A. M. Kriman, M. J. Kann, D. K. Ferry, and **R. P. Joshi**, "The Role of ExchangeInteraction in the Short-Time Relaxation of a High Density Electron Plasma", *Phys. Rev. Lett.* **65**, 1619 (1990).

212. **R. P. Joshi**, R. O. Grondin, and D. K. Ferry, "Monte Carlo Simulation of Electron-Hole Thermalization in Photoexcited Bulk Semiconductors", *Phys. Rev. B* **42**, 5685 (1990).

213. **R. P. Joshi**, A. M. Kriman, and D. K. Ferry, "Monte Carlo Study of Minority Electronic Transport in InGaAs: Phonon Mode Splitting and Dynamically Screened Electron-Hole Interactions", *J. Appl. Physics* **68**, 4322 (1990).

214. **R. P. Joshi**, S. El-Ghazaly, and R. O. Grondin, "Anisotropy Effects on the Electronic Transport in Photoexcited Bulk GaAs", *Journal of Applied Physics* **67**, 7388 (1990).

215. **R. P. Joshi**, K. T. Tsen, and D. K. Ferry, "Monte Carlo Study of the Transient Expansion of Photo-Generated Plasma in Semiconductors - Nonequilibrium Phonon Effects", *Phys. Rev. B* **41**, 9899 (1990).

216. S. El-Ghazaly, **R. P. Joshi**, and R. O. Grondin, "Electromagnetic and Transport Considerations in Subpicosecond Photoconductive Switch Modelling", *IEEE Trans. Mic. Theory Tech.* **38**, 629 (1990) **– *invited paper***.

217. **R. P. Joshi** and R. O. Grondin, "Hot Phonon and Electron-Hole Scattering Effects on the Transient Transport of Photogenerated Electrons in GaAs," *J. Appl. Phys.* **66**, 4288 (1989).

218. **R. P. Joshi** and R.O. Grondin, "A Self-Consistent Monte Carlo Method for the Transient Response of Laser Excited Photoconductive Circuits," *Solid State Electr.* **32**, 1813 (1989).

219. A. M. Kriman, **R. P. Joshi**, B.S. Haukness, and D. K. Ferry, "Geometric Effects of Scattering in Microstructures," *Solid State Electronics* **32**, 1597 (1989).

220. Y. Lu, **R. P. Joshi**, S. El-Ghazaly and R. O. Grondin, "Time Domain Finite Difference Study of Hot Carrier Transport in GaAs on a Subpicosecond Scale", *Solid State Electronics* **32**, 1297 (1989).

221. **R. P. Joshi** and R. O. Grondin, "Monte Carlo Analysis of the High Field Hole Diffusion Coefficients in GaAs," *Applied Physics Letters* **54**, 2438, 1989.

222. K. T. Tsen, **R. P. Joshi**, D. K. Ferry, and H. Morkoc, "Time Resolved Raman Scattering of Non Equilibrium LO Phonons in GaAs Quantum Wells," *Phys. Rev. B* **39**, 1446 (1989).

223. S. Chamoun, **R. P. Joshi**, R. O. Grondin, K. Meyer, and G. Mourou, "Theoretical & Experimental Investigations of Subpicosecond Photoconductivity," *Journal of Applied Physics* **66**, 236 (1989).

224. **R. P. Joshi** and D. K. Ferry, "Hot Phonon Effects and Intersubband Relaxation Processes in Photoexcited GaAs Quantum Wells," *Phys. Rev B* **39**, 1180 (1989).

225. D. K. Ferry, M. A. Osman and **R. P. Joshi**, "Ultrafast Relaxation of Hot Photoexcited Carriers in GaAs", *Solid State Electronics* **31**, 401, 1988 **– *invited paper***.

BOOKS AND BOOK CHAPTERS

(1) S. J. Beebe, **R. P. Joshi**, K. H. Schoenbach, and S. Xiao, in Ultrashort Electric Pulse Effects in Biology and Medicine (Springer, New York, 2021), ISBN: 978-981-10-5113-5.

(2) **R. P. Joshi** and K. H. Schoenbach, "Electric Fields in Biological Cell and Membranes," ***invited*** Chapter in Book titled "Electromagnetic Fields in Biological Systems," *CRC Press*, Boca Raton, 2011, pp. 71.-114 [ISBN: 9781439859995]

(3) **R. P. Joshi** and D. C. Stoudt, "Photoconductive Switches", in the IEEE / Wiley Encyclopedia Of Electrical and Electronics Engineering (John Wiley, N. York, March 1999), Vol. 16, pp. 239-257.

(4) **R. P. Joshi** and C. Fazi, "Computer Model Simulation of SiC Diode Reverse-Bias Instabilities Due to Deep Energy Impurity Levels", Materials Science Forum, edited by G. Pensl, H. Morkoc, B. Monemar, and E. Janzen, (Trans. Tech. Publishers, Switzerland, 1998).

(5) **R. P. Joshi** and P. K. Raha, "Monte Carlo Simulations of Temperature Dependent Mobility in GaN," Silicon Carbide and Related Materials, edited by M. Spencer, R.

Devaty, J. Edmond, M. Asif Khan, R. Kaplan, and M. Rahman (IOP Publishers, Bristol, 1994).

(6) K. H. Schoenbach, T. Tessnow, and **R. P. Joshi**, "Spatially Resolved E-Beam Induced Transient Spectroscopy for Deep Centers in Wide Band Semiconductors," Silicon Carbide and Related Materials, edited by M. Spencer, R. Devaty, J. Edmond, M. Khan, and R. Kaplan (IOP Publishers, Bristol, 1994).

(7) **R. P. Joshi**, K. M. Connolly, S. El-Ghazaly, and R. O. Grondin, "Photoconductive Switch Simulation with Absorbing Boundary Conditions", in Computational Electronics: Semiconductor Transport and Device Simulation, edited by K. Hess, J. P. Leburton, and U. Ravaioli, Kluwer Academic Pub., Boston 1991.

(8) D. K. Ferry, A. M. Kriman, M. J. Kann, and **R. P. Joshi**, "Extensions of the Monte Carlo Simulation in Semiconductors to Fast Processes", in Monte Carlo Simulations of Semiconductors and Semiconductor Devices, edited by K. Hess, Kluwer Academic Publishers, Boston, July 1991.

JOURNAL MANUSCRIPTS (ACCEPTED OR UNDER REVIEW)

1. C. Baker, A. V. Idesman, M. C. Baker, and **R. P. Joshi**, ″Modeling Electromagnetically Driven Thermoacoustic Pressure Wave Buildup in the Brain,″ submitted for publication, June 2025

2. Y. Pokhrel, A. L. Garner, and **R. P. Joshi**, ″A Microscopic Study into the Role of Grain Boundaries in Field Assisted Protrusion Growth and Potential for Current Fluctuations in Electron Nanoemitters,″ submitted for publication, June 2025.

3. D. Guo, Y, Pokhrel, and **R. P. Joshi**, ″Evaluating the Effect of Surface Workfunction Variability on Emitter Array Current and Emittance Based on a Patchwork Model,″ submitted for publication, July 2025.

4. A. E. Nezhad, T. T. Sabour, **R. P Joshi**, M. S. Javadi, and P. H. J. Nardelli, ″Robust Chance-constrained Scheduling of Medium-voltage Networks in the Presence of Distributed Energy Resources,″ submitted for publication, August 2025.

5. Y. Pokhrel, S. Portillo, and **R. P. Joshi**, ″Simulation Studies of Dynamic Compression in Metallic Anodes for Outgassing Mitigation,″ submitted for publication, April 2025.

6. M. S. Munsi, M. Chamana, S. Bayne, M. Adeyanju, R. P. Joshi, ″Multi-Algorithm Analysis for Accurate Li-ion Battery SOH Prediction with LSTM and Markov-Chain Optimization,″ submitted for publication, August 2025.

RESEARCH PAPERS PRESENTED AT PROFESSIONAL MEETINGS

(Over 225; details not given here for brevity, but available on request).

SCIENCE CITATIONS

Over **11,514** citations (http://scholar.google.com/citations?user=5m5bnQUAAAAJ&hl=en).

[Google Scholar h-index: 53 // Google Scholar i10-index: 176]

GRANTs AWARDED (TTU)

S. Bayne (PI), H. Nguyen (Co-PI), A. Bernussi (Co-PI), D. Lie (Co-PI), R. P. Joshi (Co-PI), A. Bilbao (Co-PI), and T. Kim (Co-PI), "Research and Development of Wide/Ultrawide Bandgap Semiconductor Materials, Devices and Applications," Texas Semiconductor Innovation Fund -- Office of the Governor (TX), $18,000,000 (Personal share $ 500,000), Jan 2025 – December 2029 (Proposal submitted; 25-0292).

R. P. Joshi (PI), "Investigation of Plasma Mitigation Strategies for High Power Microwaves," Office of Naval Research (ONR), $375,000 (Personal share $ 375,000), May 2025 – April 2028 (Proposal submitted; 25-0056).

H. Nguyen (Co-PI), T. Dallas (Co-PI), A. Bernussi (Co-PI), S. Bayne (PI), R. P. Joshi (Co-PI), J. Gauthier (Co-PI), T. Kim (Co-PI), A. Bilbao (Co-PI), and H. Greenhalgh-Spencer (Co-PI), "Wide/Ultrawide Bandgap Semiconductor Technologies and Applications (WUBSTA)," National Science Foundation (REU), $ 439,233 (Personal share $ 21,000), May 2025 – April 2028 (Proposal submitted; 24-1266).

S. Bayne (PI), H. Nguyen (Co-PI), R. P. Joshi (Co-PI), D. Lie (Co-PI), B. Nutter (Co-PI), A. Bilbao (Co-PI), J. Gauthier (Co-PI), "Instrumentation Acquisition for Advanced Semiconductor Power Devices Research," US Army, $ 6,000,000 (Personal share $ 300,000), January 2025 – December 2027.

S. Bayne (PI), A. Bernussi (Co-PI), H. Nguyen (Co-PI), R. P. Joshi (Co-PI), B. Nutter (Co-PI), D. Lie (Co-PI), A. Bilbao (Co-PI), J. Gauthier (Co-PI), "Advanced Semiconductor Power Devices," US Army, $ 14,000,000 (Personal share $ 1,000,000), January 2025 – December 2029.

H. Nguyen (PI), S. Bayne (Co-PI), R. P. Joshi (Co-PI), C. Li (Co-PI), R. He (Co-PI), K. Wu (Co-PI), T. Karp (Co-PI), A. Bernussi (Co-PI), M. Saed (Co-PI), "A Consortium for Research and Education in Ultrawide Bandgap Materials," Department of Energy, $ 1,099,949 (Personal share $ 362,983), February 2025 – January 2030 (Proposal submitted; 24-1016).

R. P. Joshi (PI), "Multiscale, Multiphysics Study of Thermal and Nonthermal Directed Energy Biological Effects," Army Research Office (ARO), $30,000 (Personal share $30,000), September 2023 – August 2024.

R. P. Joshi (PI), M. Baker (Co-PI), D. Le (Co-PI), B. Ghosh (Co-PI), J. Lawrence (Co-PI), and A. Idesman (Co-PI), "Numerical Simulations of Electromagnetic Bio-Effects," DEFENSEWERX (US Government), $436,000 (Personal share $75,000), June 2023 – June 2024.

R. P. Joshi (PI), "Dielectric Measurements and Modeling to Characterize Pulsed RF Bioeffects," Office of Naval Research (ONR), $109,676 (Personal share $109,676), September 2023 – June 2024.

R. P. Joshi (PI), M. Sanati (Co-PI), A. Neuber (Co-PI), J. Dickens (Co-PI), J. Mankowski (Co-PI), "Characterizing Electron Emission for Nanoemitter Arrays Using Theory and Molecular Level Simulations," Air Force Office of Scientific Research, $358,061 (Personal share $107,418.30), September 2022 – August 2025.

R. P. Joshi (PI), M. Sanati (Co-PI), A. Neuber (Co-PI), J. Dickens (Co-PI), J. Mankowski (Co-PI), "New Anode Materials for High Lethality HPM Sources," Office of Naval Research, $273,522 (Personal share $82,056.60), June 2022 – May 2025.

R. P. Joshi (PI), D. Le (Co-PI), and A. Idesman (Co-PI), "Numerical Simulations of Electromagnetic Bio-Effects," DEFENSEWERX (US Government), $100,000 (Personal share $75,000), February 2022 – October 2022.

R. P. Joshi (PI), "Multiscale, Multiphysics Study of Thermal and Nonthermal Directed Energy Biological Effects," Office of Naval Research (ONR), $345,133 (Personal share $86,283.25), January 2021 – December 2023.

J. Dickens (PI), A. Neuber (Co-PI), J. Mankowski (Co-PI), and R. P. Joshi (Co-PI), "Dynamics of Pulsed Surface Heating," Sandia National Laboratories, $255,000 (Personal share $40,000), January 2019 – December 2021.

R. P. Joshi (PI), "Modeling of Carrier Transport in GaN Following Excitation by a Nanosecond Laser Pulse for Photoconductive Switches," Lawrence Livermore Research Laboratory (LLNL), $90,000 (Personal share $90,000), June 2019 – March 2021.

R. P. Joshi (PI), M. Sanati (Co-PI), A. Neuber (Co-PI), J. Dickens (Co-PI), and J. Mankowski (Co-PI), "Studies of Electrode-Plasma Effects on Breakdown at RF Frequencies," US Air Force of Scientific Research, $366,340 (Personal share $73,2680), January 2019 – December 2021.

J. Mankowski (PI), J. Dickens (Co-PI), A. Neuber (Co-PI), and R. P. Joshi (Co-PI), A. Neuber (Co-PI), J. Dickens (Co-PI), "High Rep Rate Long Lifetime Magnetically Insulated Line Oscillator," Office of Naval Research, $ 545,384.45 (Personal share $ 119,984.58), April 15, 2018 – April 14, 2021.

A. Neuber (PI), R. P. Joshi (Co-PI), J. Dickens (Co-PI), and J. Mankowski (Co-PI), "Lighting and ESD Properties/Hazards," DoE - PANTEX, $ 579,742 (Personal share $ 139,138.08), March 20, 2018 – September 30, 2019.

R. P. Joshi (PI), A. Neuber (Co-PI), J. Dickens (Co-PI), and J. Mankowski (Co-PI), ″Fundamental Studies For Nanoscale Vacuum Electronic Emission Devices″, Office of Naval Research (ONR), $ 299,406, (Personal share: $74,851.5), July 1, 2018 – June 30, 2021.

A. Neuber (PI), R. P. Joshi (Co-PI), J. Dickens (Co-PI), and J. Mankowski (Co-PI), "Ignition Mechanisms of Explosives during Drilling and Skidding,"DoE - PANTEX, $ 807,197 (Personal share $ 242,159.10), Feb. 15, 2018 – Sept. 30, 2019.

A. Neuber (PI), R. P. Joshi (Co-PI), J. C. Dickens (Co-PI), and J. Manlowski (Co-PI), "Accelerator, Electrodynamics, and Pulsed Power Science and Technology Graduate and Undergraduate Research Program," US Department of Energy/Los Alamos National Laboratory, $450,000 (Personal share $112,500), June 28, 2017 – September 30, 2019.

A. Neuber (PI), R. P. Joshi (Co-PI), J. C. Dickens (Co-PI), and J. Manlowski (Co-PI), "RF Power Capacity of SF6 Gas Mixtures, Southwest Research Institute, $ 301,988 (Personal share $60,397.60), September 21, 2017 – March 21, 2019.

A. Neuber (PI), R. P. Joshi (Co-PI), J. C. Dickens (Co-PI), and J. Manlowski (Co-PI), "Hazards of Lightning and ESD," Consolidated Nuclear Security, PANTEX, Dept. Of Energy, $50,000 (Personal share $ 12,500), August 28, 2017 – September 30, 2017.

A. Neuber (PI), J. C. Dickens (Co-PI), J. Manlowski (Co-PI), and R. P. Joshi (Co-PI), "Multipactor and Breakdown Susceptibility in Microwave Frequency High Field Devices," US Department of Defense Multi-University Research Initiative (MURI), $959,945 (Personal share $ 220,787.35), December 2017 – December 2020.

J. C. Dickens (PI), J. Mankowski (Co-PI), A. Neuber (Co-PI) and R. P. Joshi (Co-PI), "Modeling and Experiments in High Magnetic Field Environments," Raytheon, $ 150,000 (Personal share $ 37,500), December 4, 2015 – December 23, 2016.

A. Neuber (PI), J, Yang (Co-PI), J. C. Dickens (Co-PI), J. Mankowski (Co-PI), R. P. Joshi (Co-PI), "HE Machining Limits," PANTEX-Dept. of Energy, $ 704,059 (Personal share $ 161,933.57), January 20, 2016 – December 31, 2017.

R. P. Joshi (PI), "Theoretical Studies and Basic Research on SiC Photoconductive Solid-State Switches (PCSS) for High Power Microwave Generation," Office of Naval Research (ONR), $ 176,928, June 1, 2015 – December 31, 2016.

GRANTS AWARDED (ODU)

(over $9M total, with $3.5 M personal share)

HONORS AND AWARDS

- Editor of Distinction, Springer Nature – 2024
- Elected Fellow of the American Association for the Advancement of Science (AAAS) – 2024
- IEEE William Dunbar Award (2022) – 1 international Award given once every 2 years ("For contributions to the science of electrical breakdown of liquids and biological applications of pulsed high voltage")

. President's Excellence in Research Professorship (TTU, 2022)
. President's Excellence in Research Professorship (TTU, 2019)
. Fulbright Research Scholar Award (2019)
. TTU Barnie Rushing Jr. Faculty Distinguished Research Award (2019)
. Stanford University's list of 100,000 most-cited authors worldwide (2017 - present)
. NPSS Merit Award (2017) for ″significant and sustained contributions to bioelectrics and physics-based understanding of high field phenomena in pulsed power applications″
. Accreditation Board for Engineering and Technology (ABET) Evaluator (since 2014)
. Elected Fellow of the Institute of Engineering and Technology (IET, UK) – 2014
. Elected Fellow of the Institute of Physics (IOP) – 2014
. Elected Fellow of the Institute of Electrical and Electronics Engineers (IEEE) -- 2008
. Elected Fellow of the Institution of Electronics & Telecommunication Engineers – 2014
. Most Influential Paper Citation Award. Bioelectromagnetics Journal (2013)
. Model Partnership Award (ODU-Ocean Lakes High School, Virginia Beach, 2013)
. IEEE Distinguished Lecturer (2012)
. Winner – Shining Star Award, Student Affairs, Old Dominion University (2010, 2011)
. Designated Eminent Scholar, Old Dominion University (2010)
. ODU Doctoral Mentor Award (2008)
. ODU University Professor (2007)
. ODU Nominee for Virginia SCHEV Outstanding Faculty Award (2006)
. Outstanding Teaching Award, Batten College of Engr. & Tech., ODU (2006)
. Martin Black Prize -- Institute of Physics & Engineering in Medicine (2005)
. Rufus Tonelson Award for Research, Teaching & Service, ODU (2004)
. Outstanding Teaching Award, Dept. of Electrical & Computer Engr., ODU, 2003
. Certificate of Appreciation, Air Force Research Laboratory, San Antonio, TX (2003)
. 18th Annual Research Award, Old Dominion University (2002)
. Who's Who in American Education (since 2007)
. United Who's Who Among Professionals (UWW – 2002)
. Research Excellence Award, Dept. of Electrical & Computer Engr., ODU (2002)
. Who's Who in Engineering Education (WWEE – 2002)
. Research Excellence Award, College of Engineering, ODU (2001)
. Listed in Marquis Who's Who in America (Science & Engineering, since 1996)
. Listed in Who's Who Among America's Teachers (since Oct. 1996)
. Listed in American Men and Women of Science (since 1995)
. Most Inspiring Faculty Award (College of Engineering), ODU, 1990.
. National Talent Scholarship, India, (1977).
. National Merit Award, India, (1977).

PATENTS

A. Pakhomov, K. Schoenbach, J, Kolb and R. P. Joshi, "Modulation of Neuromuscular Functions with Ultrashort Electrical Pulses," US Patent Pub. No.: US2008/0228244 A1, 8139339.

PROFESSIONAL RECOGNITION AND SERVICE

. Editor of Distinction, Springer Nature – 2025
. Office of Naval Research (ONR) for Directed Energy Research (2022-Present)
. National Science Foundation Graduate Research Fellowship Program (2022 – 2023)
. Fulbright US Scholars Program Reviewer in Electrical Engineering (2022-Present)
. Graduate Programs Reviewer in Electrical Engineering (US Universities 2018-2019)
. Senior Editor, IEEE Transactions on Plasma Science 2018-Present
. Editorial Board – Scientific Reports 2023-Present
. Editorial Board – Plasma (http://www.mdpi.com/journal/plasma/editors) 2017-Present
. Advisory Panel of Journal of Physics D: Applied Physics (2017-2018)
. Adhoc Committee to improve IEEE Transactions on Plasma Science (2016-2017)
. Accreditation Board for Engineering and Technology (ABET) Evaluator (since 2014)
. Professional Engineer (PE) -- Registered in Texas, No. 119803.
. Professional Engineer (PE) -- Registered in Virginia, No. 0402048456

. Elected Fellow of the American Association for the Advancement of Science (AAAS) – 2024
. Elected Fellow of the Institute of Physics (IOP) in 2014.
. Elected Fellow of the Institute of Engineering and Technology (IET, UK) – 2014
. Elected Fellow of the Institution of Electronics &Telecommunication Engineers – 2014
. Elected Fellow of the Institute of Electrical and Electronics Engineers (IEEE) in 2008 for: "Contributions to bio-electrics and simulation of cellular responses to pulsed power excitation."
. IEEE Distinguished Lecturer (2012).
. Guest Editor, Editor, IEEE Trans. Plasma Science (2014; 2012; 2011; 2008; 2004).
. Board Member -- IEEE Committee on Pulsed Power Technology (2010-2016).
. Reviewer -- Air Force Office of Scientific Research (2011, 2013)
. Reviewer -- National Science Foundation (2012, 2013), and NSF IUCRC (2016, 2018, 2019) and NSF GSRP (2022)
. Reviewer -- US Fulbright Program (2022 , 2004))
. Organizing Committee -- 2010 IEEE International Conference on Plasma Science.
. Session Chair – Compact Pulse Power and Applications, for 2010 IEEE International Conference on Plasma Science (ICOPS).
. Elected Board Member (IEEE Society on Dielectrics and Electrical Insulation, 2009-2011 term)
. Organizing Committee -- SPIE Conference on Nano-, Bio-, Info-Tech Sensors (2010)
. Executive Committee -- Chair, Publications and Publicity Committee for IEEE Conference on Electrical Insulation and Dielectric Phenomena (Oct. 2009)

. Executive Committee -- Chair, Publications and Publicity Committee for IEEE Conference on Electrical Insulation and Dielectric Phenomena (Quebec City, Canada, Oct. 26-29, 2008)

. Session Organizer: "Medical, Environmental, and Biological Applications" for the Intl. Conf. on Plasma Science (Albuquerque, NM, 2006) and "Medical, Environmental, and Biological Applications" for the Intl. Conf. on Pulsed Power (Chicago, IL, 2011).

. Judge-- IEEE Best Student Paper Contest, IEEE International Conference on Pulsed Power and Plasma Science (Albuquerque, NM, 2007 and Norfolk, VA, 2010).

. Organizing Committee -- 2007 IEEE International Conference on Pulsed Power and Plasma Science (PPPS).

. Elected Board Member (IEEE Society on Dielectrics and Electrical Insulation, 2006-2008 term)

. Session Organizer ("Medical, Environmental, and Biological Applications") for the 2006 Intl. Conf. On Plasma Science (Michigan).

. Organizing Committee (SPIE Conf. on Ultrafast Electronics, San Jose, 2000)

. Session chair (IEEE Southeast Conference, 1991).

. Member of the American Physical Society and Biomedical Engineering Society

. Member of the American Vacuum Society (AVS)

. Technical Reviewer for following journals: IEEE Transactions on Electron Devices; IEEE Transactions on Plasma Science; Journal of Applied Physics and Applied Physics Letters; Physica Status Solidi; Solid State Electronics; Solid State Sciences; Microelectronics Reliability; Journal of Computational Electronics; Physical Review B & E; Physical Review Applied; Journal of Biological Physics; Physical Review Letters, Journal of Physics D, Journal of Bio-Electromagnetics, Biophysical Journal, Critical Reviews in Biomedical Engineering, Bioelectrochemistry Journal, Reviews of Scientific Instruments, Journal of American Ceramic Society, New Journal of Physics, Microwave Review, Journal of Mathematics and Computers in Simulation, IEEE Transactions on Dielectrics and Electrical Insulation; Plasma Sources Science and Technology; Journal of Theoretical and Applied Physics; Biochimica et Biophysica Acta – Biomembranes, IEEE Transactions on Radiation and Plasma Medical Sciences, IEEE Transactions on Radiation and Plasma Medical Sciences; BioMed Research International.

. Technical Reviewer: Air Force Office of Scientific Research (2011, 2013); National Science Foundation (2012, 2013), and NSF IUCRC (2016, 2018, 2019) and NSF GSRP (2022); US Fulbright Program (2022); National Institutes of Health (NIH); US Civilian Research & Development Foundation for Former Soviet Union; US Department of State; Whittaker Foundation; Virginia Center for Innovative Research; Israel Science Foundation ; Agence Nationale Recherche (ANR -- France's National Research Agency); Czech Science Foundation (GACR).

. Book Reviewer for J. Wiley & Sons, Prentice Hall, Oxford University Press, and Addison-Wesley.

UNIVERSITY-RELATED SERVICE ACTIVITY (Texas Tech University)

Chair, ECE Faculty Search Committee for Bio-engineering Position (2024-2025)
Departmental Committee on new Engineering Technology Program (2024-Present)
College Faculty Research Awards Committee, 2018-Present
College Undergraduate Curriculum Committee, 2024
Associate Chair – Assessment and Recruitment (2023-2024)
Chair, Public Relations Committee, ECE Department, Texas Tech Univ. (2017-2019)
ABET Co-ordinator for Electrical Engineering programs (2015 - Present)
Whitcare College of Engineering Institutional Effectiveness (IE) committee (2018)

UNIVERSITY-RELATED SERVICE ACTIVITY (Old Dominion University)

ECE Departmental Undergraduate Committee (2013-Present)
University Eminent Scholar's Committee (2013-Present)
Committee G of University Faculty Senate - Nominations (2009-2012)
Committee H of the University Faculty Senate – Nominations (1998-1999; 2002-2012)
University Honorary Degrees Committee (2001-Present)
College Promotion & Tenure Committee (2010-2012)
ODU "University Professor" Committee (2009 – 2011)
ODU Research and Scholarship Subcommittee of Strategic Plan Task Force (2009)
ODU Morgan Named Professor Committee (2009)
ODU Provost Search Committee (2007)
University Faculty Senate Committee F-Tenure and Promotion (2007-2011)
Center for Bio-Electrics Research Faculty Search Committee (2007)
Computer Science Department-Chair Search Committee (2006-2007)
ECE Departmental Graduate Committee (2006-2013)
University Faculty Senate Committee D-Scholarly Activities (2005-2010)
University Student Conduct Committee (2001-2006)
University Self-Study Committee (1999-2000)
University Library Committee (1996-2000)
University Students Who's Who Selection Committee (1994-2000)
College Awards and Recognitions Committee (2010-2011)
College Promotion & Tenure Committee (2003-2008)
College Scholarship Committee (1992-2003)
College Task Force on Distance Education (1998)

Departmental Coordinator for Web-site Development & Maintenance (2006-2008)
Departmental Promotion & Tenure Committee (1996-Present)
Departmental ABET Preparation Team (2003)
Departmental Recruiting Committee (2000)
Departmental Graduate Committee (1999-Present)
Departmental Undergraduate Committee (1998-99)
Department Physical Electronics Committee (1990-1998)

STUDENT SUPERVISION AND MENTORING
(#Current students being mentored)

At Texas Tech University

(1) #Sabyasachi Chakraborty Shrestha, PhD student, currently enrolled, expected completion May 2026.

(2) Ali Esmaeelnezhad, PhD completed August 2025 "Day-Ahead Operational Strategies for Distribution and Transmission Systems".

(3) Sabyasachi Chakraborty Shrestha, MS completed May 2025 "Wigner Function Monte Carlo Implementation for Modeling of Electron Emission from Copper Cathodes".

(4) Yagnya M. Pokhrel, PhD completed May 2025, "Innovative Computational Strategies for Minimizing Plasma Formation, and Reducing Outgassing in High-Power Microwave (HPM) Devices".

(5) Ali Esmaeelnezhad, MS completed December 2024 "Day-Ahead Operational Strategies for Distribution and Transmission Systems".

(6) Alyson Willis, MS completed May 2025, "Numerical Assessments of Subcellular Electroporation Driven by Ultrashort Electric Pulses".

(7) Matthew Sokol, MS completed December 2024, "Development of Simple Model to Incorporate Statistical Noise on the Basis of a Modified Hodgkin-Huxley Approach for Neural Responses".

(8) Kelsey Gatlin, MS completed August 2024, "Multiphysics Based Parameterized Numerical Study of Pressure Wave Generation in Head Models Induced by Incident Electromagnetic Radiation".

(9) Cody Baker, MS completed May 2024, "Development of a Finite Element Method Based Model of Thermoacoustic Pressure Wave Generation in Spherical Geometries due to Microwave".

(10) Yagnya M. Pokhrel, MS completed May 2024, "Molecular Dynamics Analysis of Outgassing With Self-Consistent Temperature Calculations for High Power Devices".

(11) William Milestone, PhD completed May 2023, "Self-Consistent Analysis of Microsecond Irreversible Electroporation with Cellular Heating in Individual and Cell Clusters".

(12) Raul Perez, MS completed December 2022, "Simulation Studies of Frequency-Dependent Action Potentials in Cell Axons".

(13) Sayeed Sami, PhD completed May 2022, ″Studies of Field Emission Current Density and Outgassing in Copper and Carbon Fiber Electrodes Based on Microscopic Material Models″.

(14) Luke Silvestre, MS completed December 2021, "A Continuum Approach for Multipactor Using the Vlasov-Poisson Analysis".

(15) Sayeed Sami, MS completed December 2021, "Molecular Dynamics Simulations of Outgassing from Copper Electrodes".

(16) William Milestone, MS completed May 2021, "Monte Carlo Analysis of Carrier Dynamics in GaN Photoconductive Switches for Pulses in the 100 GHz Range".

(17) Dong Guo, PhD completed August 2021, "Simulations for Electron Emission and Maximum Current Output from Metal Emitter Arrays".

(18) Yi Yi, MS completed May 2021, "Simulations for Bio-Impedance in Cancer Tissues".

(19) Xiaoli Qiu, PhD completed December 2020, "Studies on Secondary Electron Yield and Multipactor Mitigation in Rectangular Waveguides based on Monte Carlo Methods".

(20) Animesh Chowdhury, PhD completed May 2019, "Investigating Possibility of Lock-On in a Photo-Conductive Semiconductor Switch (PCSS) for High Power Applications".

(21) Hieu Nguyen, PhD completed May 2019, "Simulation Studies of Breakdown and Charge Growth in Pulsed Power Systems Driven by Microwave Excitation".

(22) Joy Acharjee, MS completed May 2019, "Numerical Studies of Hydrogen Outgassing from Copper Electrodes".

(23) Ze Zhang, MS completed December 2017, "Studies on Explosive Emission and Material Degradation of Nanoscale Metal Emitter Tips Based on Molecular Dynamics Analysis".

RECENT GRADUATE STUDENT COMMITTEE MEMBER (TTU)

(1) Tyler Buntin -- PhD student
(2) Moran Daniel -- PhD student
(3) Samuel Denard -- PhD student.
(4) Vincent Meyers -- MS student
(5) Daniel Mauch -- MS student
(6) William Sullivan -- MS student
(7) Patrick Kelley -- PhD student

At Old Dominion University

(1) Alireza Majzoobi, PhD completed May 2016, "Studies for Improved Microwave Performance of Relativistic Magnetrons".

(2) Rajintha Tiskumara, PhD completed May 2016, "Evaluation of 4H-SiC Photoconductive Switches for Pulsed Power Applications Based on Numerical Simulations".

(3) Meena Sreekantamurthy, MS completed August 2015, "Classification of Digital Communication Signal Modulation Schemes in Multipath Environments Using Higher Order Statistics".

(4) Vineetha Jujjavarapu, MS completed December 2014, "Numerical Studies of the A6 Relativistic Magnetron Using Particle-in-Cell Simulations".

(5) Satish Kota, MS completed December 2014, "Simulation Studies of Organic Solar Cell Structure and Morphology on the Device Efficiency".

(6) Daniel Sexton, MS completed August 2014, "High Dynamic Range Current Measurements for Electron Beam Diagnostics".

(7) Leroy Fung, MS completed August 2014, "The Study of Electrostatic and Magnetostatic Shielding for Deep Space Missions".

(8) Felicia Farrow, MS completed August 2013, "Optimization of Solar Cell Arrays Using the Fibonacci Search Algorithm".

(9) Trac Nguyen, MS completed December 2012, "Configurational Studies of Electrostatic and Magnetostatic Active Space radiation Shielding".

(10) Ashish P. Bathini, M.E. completed May 2013, "Monte Carlo Algorithm for Secondary Electron Yield".

(11) Hao Qiu, PhD completed August 2014, "Numerical Study of Cell Poration and Ionic Conduction in Nanopores Caused by High-Intensity, Nanosecond Pulses".

(12) Deepthi Nagulapally, PhD completed August 2014, "Evaluation of Degradation in GaN Based High Electron Mobility Transistors due to the Inverse Piezoelectric Effect".

(13) Priyamvada Maleeswaran, MS completed December 2012, "Modeling Leakage Currents in Metal Insulator Metal Structures With High-*k* Materials".

(14) Yue Feng, PhD completed August 2012, dissertation: "Multi-term Approximation to the Boltzmann Transport Equation for Electron Energy Distribution Functions in Nitrogen".

(15) Michael Stelzer, PhD completed May 2012, "Evaluation of Ocean-Energy Conversion Based on Linear Generator Concepts".

(16) Aydin Meric, MS completed May 2011, thesis: "Electronic Warfare by Using Unmanned Aerial Vehicles".

(17) Atila Ozdemir, MS completed May 2011, thesis: "Unmanned Aerial Vehicles Collision Avoidance From Moving Obstacles".

(18) Ertac Olgun, MS completed May 2011, thesis: "Investigation and Comparison of Proportional Navigation Guidance and Beam Rider Guidance".

(19) Jiahui Song, Ph.D. completed May 2010, "Simulation Studies of Pulsed Voltage Effects on Cells".

(20) Deepthi Nagulapally, MS completed August 2010, thesis: "Simulation of Temperature Distributions in Tissue Upon Laser Pulse Irradiation Including Water Mass Transfer".

(21) Pavithra Gudur, MS completed May 2010, thesis: "A Genetic Algorithm Solution for Optimized Routing".

(22) George Annobil, MS completed December 2010, thesis: "Growth of Alkali Antimonide Photosensitive Thin Films".

(23) Rakesh Choula, MS completed December 2009, "Monte Carlo Model of Light Propagation in Tissue and the Effects of Phase Changes on the Light Intensity".

(24) Venkata R Guggilam, MS completed December 2008, "Monte Carlo Simulation for Electron Swarm Parameters in Atmospheric Nitrogen, Oxygen, and Air".

(25) Stuart Rogers, MS completed May 2008, thesis: "Numerical Simulations of a Nonlinear Transmission Line".

(26) Madhuri Ganapathiraju, MS completed May 2008, thesis: "Stochastic Calculations for Computation of Radiation Effects and Cell Survivability Under Voltage Pulsing".

(27) Guogang Zhao, Ph. D. completed December 2007, dissertation: "Modeling and Simulations of Electrical Breakdown and Thermal Failure in Zinc Oxide and Titanium Dioxide for High Voltage Dielectric Applications".

(28) Fatim Mbaye, MS completed December 2007, thesis: "Electroactive Polymers (EAP): Simulation Studies of the Actuation Mechanisms in a Cantilever Cellulose Electroactive Paper Actuator Device".

(29) Deepesh Koppunuru, MS completed December 2007, thesis: "PARMELA Based Simulations on Jefferson Laboratory Free Electron Laser Injector".

(30) Ashutosh Mishra, Ph.D. completed December 2007, dissertation: "Development of Fast, Distributed Computational Schemes For Full-Body Bio-Models and Their Application to Novel, Action Potential Block in Nerves Using Ultra-Short, High-Intensity Electric Pulses".

(31) Anh Nguyen, M.S. completed August 2007, thesis: "Simulations of Intracellular Calcium Release In Response to High-Intensity, Ultrashort Electric Pulses".

(32) Nidhi Nahar, M.S. completed May 2007, thesis: "Simulation Modeling Of Nerve Impulse Propagation And Its Blockage By External Electrical Stimulation".

(33) Sridhara Viswanadham, Ph. D. completed May 2007, dissertation: "Molecular Dynamics Simulations to Probe Effects of Ultra-Short, Very-High Voltage Pulses on Cells".

(34) James Bolitho, M.S. completed August 2005, thesis: "Monte Carlo Simulation Analysis of Electron Bombardment of GaN for Particle Detector Applications".

(35) Jun Qian, Ph. D. completed August 2005, dissertation: "Modeling and Simulation of Sub-Microsecond Electrical Breakdown in Liquids with Application to Water".

(36) Qin Hu, Ph. D. completed August 2004, dissertation: "Dynamical Studies of Model Membrane and Cellular Response to Nanosecond, High-Intensity Pulsed Electric Fields".

(37) Feng Chen, M.S. completed August 2004, thesis: "Modeling Nerve Electro-Stimulation in the Nanosecond Regime".

(38) Juan A. Gonzalez-Cuevas, M.S. completed December 2003, thesis: "Brownian Dynamics Simulation Studies of Ion Throughput During Cellular Electroporation".

(39) Sridhara Viswanadham, M.S. completed August 2003, thesis: "Monte Carlo Analysis of Millimeter-wave GaN Based Gunn Effect Oscillators ".

(40) Phani Pendyala, MS completed August 2003, thesis: "Analysis Of InGaAsSb/AlGaAsSb Photodetectors For Applications At The 2.0 Micron Wavelengths" .

(41) Satyanadh Gundimada, M.S. completed August 2002, thesis: "Study of Transport Properties of InAs Using the Monte Carlo Method".

(42) Srinivas Chuddapah, M.S. completed August 2002, thesis: "Evaluation of Distributed Effects in Field Effect Transistors for High Frequency Applications".

(43) J. Gringmuth, Thesis Project completed August 2001, (International Masters Program, University of Applied Science, Leipzig, Germany), "Design and Development of Electronic Circuits to Measure Noise and Responsivities of Photodiodes".

(44) Hisham Merhi, M.S. completed August 2001, thesis: "Pulsed Electron Heating of Atmospheric Pressure Air Glow Discharges".

(45) Tao Li, Ph. D. completed July 2001, dissertation: "Ensemble Monte Carlo Based Simulation Analysis of GaN HEMTs for High Power Microwave Device Applications".

(46) Rami Hanbali, M.S. completed August 2001, thesis: "Development of ATLAS Based Simulation Capability for Automated Testing".

(47) Satish Ravichandran, M.S. completed August 2001, thesis: "Simulation Optimization Studies Of Routing And Process Flow Problems ".

(48) Michael Stelzer, M.S. completed May 2001, thesis: "SPICE Based Heat Transport Model for Non-Intrusive Thermal Diagnostic Applications".

(49) Peter Tillberg, Thesis Project completed December 2000, (International Masters Program, Dalarna University), "Spray Evaluation of New Injector Design".

(50) J. E. Stenblom, Thesis Project completed December 2000, (International Masters Program, Dalarna University), "Verification and Evaluation of Hot Fuel Handling Test Procedures ".

(51) Martin Boremyr and T. Gustavsson, Thesis Project completed July 2000, (International Masters Program, Dalarna University), "Hardware and Software Design for an Automated Fuel Injector Test Cell".

(52) Gayathri Barthaki, M.S. completed June 2000, thesis: "Simulations of Electroporation in Single Cells Subject to a Ultrafast High Voltage Pulse".

(53) Madhusudhan Akundi, M.S. completed May 2000, thesis: “Routing Optimization Through Computer-Aided Simulations".

(54) Milind Chokshi, M.S. completed May 2000, thesis: "Process Flow Optimization Studies Through Discrete Event Simulations".

(55) Damayanthi Palaniappan, M.S. completed December 1999, thesis: "Evaluation of the Transport Properties of GaSb for Bipolar Applications Through Monte Carlo Simulations".

(56) Lifeng Zheng, M.S. completed May 1999, thesis: "Theory of SiC Schottky Barrier Conduction and Model Analysis for Diode Breakdown With and Without Screw Dislocations".

(57) Thomas Caldwell, M.S. completed May 1999, thesis: "Development and Testing of an AC Micro Hollow Cathode Simulator".

(58) Prayasit Kayasit, M.S. completed December 1998, thesis: "Two Dimensional, Time Dependent Modeling and Simulation of Semi-Insulating GaAs High-Power Switches".

(59) John Peake, M.S. completed December 1998, thesis: "Computer Simulations of Electromigration Based on a Molecular Dynamics Approach".

(60) Sanjay Pathak, Ph.D. completed December 1998, dissertation: "Modeling and Simulations of High Field, High Temperature SiC Devices".

(61) Jing Li, M.S. completed May 1998, thesis: “Coupled Electrodynamic-Monte Carlo Simulations of Nanoscale GaAs Terahertz Optical Mixers”.

(62) Abhishek Srivastava, M.S. completed August 1996, thesis: "Monte Carlo Simulations of the Photoemission Characteristics from GaAs and Diamond".

(63) Hamid Jalali, M.S. completed July 1996, thesis: "Two-Dimensional Drift-Diffusion Simulations of Silicon Avalanche Shaper (SAS) Devices for High Power Applications".

(64) Prasun Kumar Raha, MS completed July 1994, thesis: "Transient Simulations and Modeling of Semi-Insulating GaAs Photoconductive Switches".

(65) Ramani Vaidyanathan, MS completed April 1992, thesis: "Monte Carlo Simulations of Millimeter-Wave Gunn-Effect Oscillators".

POST-DOCTORAL AND VISITING RESEARCHERS

- Aamer Al Ali, Visiting Faculty, January 2009 – December 2009.
- Xiaoqian Hu, Visiting Scholar, September 2007 – August 2008.
- J. Qian, Post Doctoral Researcher, August 2005 – December 2005.
- Q. Hu, Post Doctoral Researcher, August 2004 – May 2007.

SOME STUDENT ACCOMPLISHMENTS

. **47** journal papers by graduate students at TTU

. Over **160** journal papers overall by graduate students

. Ph.D. student (Madeline Brown) – applied Summer Internship at Kirtland Base for 2022.

. Ph.D. student (Luke Silvestre) – Summer Internship at Sandia National Laboratory in 2022.

. MS student (Raul Perez) – Summer Internship at Kirtland Base, Albuquerque, NM in 2021.

. Ph.D. student (Sayeed Sami) won Magne Kristiansen scholarship (TTU) in 2021.

. MS student (William Milestone) – Summer Internship at Lawrence Livermore National Laboratory, 2020 and 2021.

. Ph.D. student (Animesh R. Chowdhury) – Summer Internship at Micron Inc., Boise, ID in 2019.

. Ph.D. student (Hieu Nguyen) – Summer Internship at Kirtland Base, Albuquerque, NM in 2018.

. Ph.D. student (Animesh R. Chowdhury) won the 2018 Ph.D. Graduate Student Award in the Electrical & Computer Engineering Department, Texas Tech University.

. Ph.D. student (Animesh R. Chowdhury) won the 2017 International Graduate Fellowship from the Dielectrics and Electrical Insulation Society of the Institute of Electrical and Electronics Engineers (IEEE). He was 1 of 3 annual recipients internationally.

. B.S. student (Kenan Blackerby) – Summer Internship at Texas Instruments, TX in 2016.

. B.S. student (Jason Green) – Summer Internship at Idaho National Laboratory, ID in 2016.

. Ph.D. student (Hao Qiu) – Asst. Professor at University of Georgia since 2016.
. Ph.D. student (Jiahui Song) –Professor at Wentworth Institute of Technology since 2015.
. M.S. student (George Annobil) won 1st Place at the Virginia Microelectronics Scholars Competition, Richmond, 2009.
. Ph.D. student (Ashwini Jayaprakash) selected for Accelerator Physics Summer School at Univ. of Maryland (instructors from Brookhaven National Laboratory), June 16-27, 2008.
. BS-M.S. student (George Annobil) selected as Virginia Microelectronics Consortium Summer 2008 Intern at Micron Inc., Manassas, VA.
. Ph.D. student (Ashwini Jayaprakash) spent 4 weeks at Cornell University (NY) in connection with JLAB-related project on electron accelerators (2008) – Summer 2008.
. BS-Ph.D. student (Felicia Farrow) received the Virginia Space Grant Consortium Scholarship (2008) and working on NASA project.
. BS-M.S. student (George Annobil) selected as Virginia Microelectronics Consortium Summer 2008 Intern at Qimonda Inc., Richmond, VA.
. M.S. student (Anh Nguyen) recipient of the Virginia Micro-Electronics Consortium (VMEC) internship at Micron, Manassas, VA (2007).
. Ph.D. student (Guogang Zhao) working at Siemens, Atlanta, GA as Research Engineer.
. Ph.D. student (Qin Hu) -- Professor at Central Michigan University.
. Ph.D. student (Viswanadham Sridhara) -- staff scientist at the National Institutes of Health (NIH), MD.
. Ph.D. student (Viswanadham Sridhara) won the best Ph.D. student award in the ECE department (2007).
. Ph.D. student (Ashutosh Mishra) won the best GTA award in the ECE department (2007).
. Ph.D. student (Jiahui Song) won the 2006 International Graduate Fellowship from the Dielectrics and Electrical Insulation Society of the Institute of Electrical and Electronics Engineers (IEEE). She was 1 of 3 annual recipients.
. Ph.D. student (A. Mishra) received a TA award from College of Engineering and Technology in the 2006.
. Ph.D. student (V. Sridhara) placed second in the 2005 Annual ODU Research Day Poster.
. Ph.D. student (Guogang Zhao) won the 2005 International Graduate Fellowship from the Dielectrics and Electrical Insulation Society of the Institute of Electrical and Electronics Engineers (IEEE). He was 1 of 3 annual recipients.
. Ph.D student Qin Hu won 3rd place at 2005 ODU Annual Research Exposition.
. Ph.D. student Jun Qian won 2005 ODU Outstanding Graduate Research Assistant Award.
. Ph.D. student Qin Hu won 2004 ODU Outstanding Graduate Research Assistant Award.
. Ph.D. student A. Mishra won 2003 ECE Outstanding Graduate Teaching Assistant Award.
. MS student (P. Raha) went on for Ph.D. at the University of Illinois Urbana-Champaign (UIUC), and is now a manager at Intel Corporation.
. MS student (M. Akundi) now a design manager at Motorola Inc.

TEACHING ACTIVITY (Texas Tech University)

- Probability, Statistics and Discrete Mathematics (ECE 3308 - *Developed*)
- Nanoelectronics: Material Physics, Devices and Applications (ECE 4332/5332 - *Developed*)
- Linear System Analysis (ECE 3303)
- Electromagnetic Theory I (ECE 3341)
- Solid State Devices (ECE 4314 / ECE 5314)
- Engineering Analysis (ECE 5371)

TEACHING ACTIVITY (Old Dominion University)

(A) COURSES TAUGHT (FROM 1989 – 2014)
Total of 23: New Developed (13) + Existing Courses Taught (10)

- Numerical Methods and Mathematical Model-Based Analyses for Engineering (ECE 795/895 - *Developed*)
- Biostatistics: Fundamentals and Applications (ECE 751/851 - *Developed*)
- Engineering Analysis and Tools (ECE 200 - *Developed*)
- Statistical Analysis and Simulation (ECE 651 - *Developed*)
- Semiconductor Characterization (ECE 774/874 - *Developed*)
- Graduate Seminar Topics (ECE 796/896 - *Developed*)
- Applied Non-Linear Optics (ECE 695/795 - *Developed*)
- Advanced Semiconductor Devices & Modeling (ECE 696/796 - *Developed*)
- Semiconductor Optoelectronic Devices (ECE 696/796 - *Developed*)
- Physical Electronics (ECE 332 - *Team Developed with Prof. Albin*)
- Physical Electronics Laboratory (ECE 387 - *Team Developed*)
- Bioelectrics (ECE 454/554 - *Team Developed*)

- Electromagnetic Field Theory (ECE 625/725 - Graduate)
- Solid State Electronics (ECE 473/573 - Undergraduate/Graduate)
- Gaseous Electronics (ECE 471/571 - Undergraduate/Graduate)
- Quantum Electronics & Lasers (ECE 476/576 - Undergraduate/Graduate)
- Electromagnetics I (ECE 321 - Undergraduate)
- Electromagnetics II (ECE 322 - Undergraduate)
- Probability and Random Processes (ECE 304 - Undergraduate)
- Signals and Systems (ECE 202 - Undergraduate)
- Circuit Theory I (ECE 201 - Undergraduate)
- Circuits Laboratory Recitation (ECE 281 - Undergraduate)

(B) TEACHING RELATED AWARDS (Old Dominion University)

ODU Shining Star Award (Student Affairs -- 2011)
ODU Shining Star Award (Student Affairs -- 2010)
ODU Doctoral Mentor Award (2008)
ODU University Professor (2007)

Outstanding Teaching Award, College of Engineering, ODU (2006)
Tonelson Faculty Award, ODU (2004)
Outstanding Teaching Award, Electrical & Computer Engineering, ODU (2003)
Who's Who in American Education (since– 2007)
Who's Who in Engineering Education (WWEE – 2002)
Listed in Who's Who Among America's Teachers (Oct. 1996)
Most Inspiring Faculty Award, Old Dominion University (1990)