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

9/25– Present Department Chair, Electrical & Computer Engineering, Texas Tech University

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

01/2016 – 2019	PepsiCo, USA – various locations and sites.
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: **227**
- Citations: **11,843** (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)

- Life Fellow of the Institute of Electrical and Electronics Engineers (IEEE) – **2025**
- 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 Fellow 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**

CHRONOLOGICAL INTERNATIONAL JOURNAL PUBLICATION LIST

(227 International, Peer-Reviewed Journal Publications to Date)

1. 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,″ *IEEE Access* **14**, ?? (2026).

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,″ *Journ. Appl. Physics* **138**, 143303(2025).

3. 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).

4. 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).

5. 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).

6. 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).

7. 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).

8. 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).

9. 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).

10. 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).

11. 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).

12. 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).

13. 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).

14. 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).

15. 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).

16. **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).

17. 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).

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

19. 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.

20. 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).

21. 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).

22. 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).

23. 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).

24. 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).

25. 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).

26. 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).

27. 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).

28. 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).

29. 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).

30. 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).

31. 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).

32. 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).

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

34. 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.

35. 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).

36. 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).

37. 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).

38. 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).

39. 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).

40. 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).

41. 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).

42. 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).

43. 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).

44. 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).

45. 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).

46. 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).

47. 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).

48. 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).

49. 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).

50. 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).

51. 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).

52. 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).

53. 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).

54. 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).

55. 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).

56. 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).

57. 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).

58. 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).

59. 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).

60. 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).

61. 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.

62. 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).

63. 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).

64. 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).

65. 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.

66. 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).

67. 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).

68. 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).

69. 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).

70. 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).

71. 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).

72. 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).

73. **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).

74. 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).

75. 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).

76. 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).

77. 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).

78. 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).

79. 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).

80. 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)

81. 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).

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

83. **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).

84. 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).

85. **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***.

86. **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***.

87. 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).

88. **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).

89. 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).

90. **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).

91. 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).

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

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203. **R. P. Joshi**, "Intersubband Relaxation Dynamics in Ternary/Binary Quantum Wells: Role of the Electron-Phonon Interaction", *J. Appl. Phys.* **71**, 3827 (1992).

204. **R. P. Joshi**, "Quantum Corrections to Ultrafast Thermalization in Binary/Ternary Double Heterostructures", *Appl. Phys. Lett.* **59**, 1572 (1991).

205. **R. P. Joshi** and D. K. Ferry, "Effects of Multi-Ion Scattering on Electron Velocities in Bulk GaAs", *Semiconductor Science and Technology* **7**, B319-B321 (1992) – ***invited paper***.

206. 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).

207. 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).

208. **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).

209. 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).

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

211. **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).

212. 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***.

213. 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).

214. **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).

215. **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).

216. **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).

217. **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).

218. 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***.

219. **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).

220. **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).

221. 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).

222. 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).

223. **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.

224. 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).

225. 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).

226. **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).

227. 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, September 2025.

2. 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.

3. 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.

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

RESEARCH PAPERS PRESENTED AT PROFESSIONAL MEETINGS

(Over 250; details not given here for brevity, but available on request).

SCIENCE CITATIONS

Over **11,843** citations (http://scholar.google.com/citations?user=5m5bnQUAAAAJ&hl=en).

[Google Scholar h-index: 53 // Google Scholar i10-index: 186]

GRANTs AWARDED (TTU)

Over $50 Million from various federal sources within the US.

Too many to enumerate, but sources include the following:

US Federal: US Air Force Office of Scientific Research; US Office of Naval Research, US Army, Army Research Laboratories, Sandia National Laboratories, Oak Ridge National Laboratories, Thomas Jefferson National Accelerator Facility, National Science Foundation (NSF), National Institutes of Health (NIH), DEFENSEWERX, US Fulbright

State Funding: Commonwealth of Virginia, Governor's fund from State of Texas, Virginia Center for Innovative Research

Industry Support: PANTEX, PepsiCo, Motorola, Siemens Corporation

HONORS AND AWARDS

- Life Fellow of the Institute of Electrical and Electronics Engineers (IEEE) – 2025
- 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

. Life Fellow of the Institute of Electrical and Electronics Engineers (IEEE) – **2025**
. Guest Editor, Special Issue on "Charge transport mechanism in energy materials," Scientific Reports – 2025-2026
. 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, Electrical and Computer Engineering Department (2025 – Present)
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

Over 60 graduate students mentored and led to successful completion

Recent students enrolled (#) or graduated

(1) #Pramit Ghosh, MS student, currently enrolled, expected completion May 2027.
(2) #Matthew Farris, MS student, currently enrolled, expected completion December 2026.
(3) #Sai P. Beeram, PhD student, currently enrolled, expected completion December 2027.
(4) #Tanuja Nath, MS student, currently enrolled, expected completion December 2026.
(5) #Sabyasachi Chakraborty Shrestha, PhD student, currently enrolled, expected completion May 2026.
(6) M. Arafat Hossain, MS student completed December 2025, "An FEM Model of Cell Membrane Electroporation in Single and Multiple Aggregates of Biological Cells for Electrochemotherapy Applications".
(7) Ali Esmaeelnezhad, PhD completed August 2025 "Day-Ahead Operational Strategies for Distribution and Transmission Systems".

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

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

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

(11) 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".

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

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

(14) 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".

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

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

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

(18) 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″.

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

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

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

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

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

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

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

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

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

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

POST-DOCTORAL AND VISITING RESEARCHERS

- Aamer Al Ali.
- Xiaoqian Hu.
- Jun Qian.
- Qin Hu.

COURSES TEAGHT AND DEVELOPED (D)

- Probability, Random Processes, and Statistics
- Nanoelectronics: Material Physics, Devices and Applications (D)
- Bio-Electrics for Engineers (D)
- Electromagnetic Theory
- Solid State Devices
- Engineering Analysis
- Numerical Methods and Mathematical Modeling for Engineers
- Biostatistics: Fundamentals and Applications (D)
- Semiconductor Characterization (D)
- Applied Non-Linear Optics (D)
- Advanced Semiconductor Devices & Modeling (D)
- Semiconductor Optoelectronic Devices
- Physical Electronics
- Gaseous Electronics
- Quantum Electronics & Lasers
- Signals and Systems
- Circuit Theory

TEACHING RELATED AWARDS

Barnie Rushing Distinguished Faculty Award (2019)
Shining Star Award (2010, 2011)
Doctoral Mentor Award (2008)
University Professor (2007)
Outstanding Teaching Award (2006)
Tonelson Faculty Award (2004)
Who's Who in American Education (since– 2007)
Listed in Who's Who Among America's Teachers (1996, 1997)
Most Inspiring Faculty Award (1990)