UTTAM SINGISETTI
uttamss@gmail.com
www.eng.buffalo.edu/~uttamsin/
Tel: (716)645-1536 Fax: (716) 645 3656

Associate Professor
Electrical Engineering,
University at Buffalo, Buffalo, NY 14260, USA

Education

- **PhD, University of California, Santa Barbara (UCSB).**

Electrical and Computer Engineering. [Sep 2009].
Dissertation : "$In_{0.53}Ga_{0.47}As$ MOSFETs with 5 nm channel and self-aligned Source/Drain by MBE regrowth."
Advisor : Dr Mark Rodwell, Professor, Electrical Engineering, University of California at Santa Barbara.

- **MS, Arizona State University.**

Interdisciplinary Science and Engineering of Materials Program, [May 2004].
Thesis: "Ultra-shallow junctions for sub-100nm Si n-MOSFETs"
Advisor : Dr Stephen M Goodnick, Professor, Electrical Engineering, Arizona State University

- **Bachelor of Technology**, **Indian Institute of Technology (IIT), Madras.**
  Department of Materials Science and Engineering, India [May 2001]. Concentration in Electronic Materials.

Employment History

- **Associate Professor** (Tenured), Electrical Engineering, University at Buffalo (UB), June 2017-present.
- **Assistant Professor,** Electrical Engineering, University at Buffalo (UB), Sep 2011- May 2017.
- **Assistant Project Scientist,** Electrical and Computer Engineering, UCSB, Sep 2009-Aug 2011.
- **Graduate Student Researcher,** Electrical and Computer Engineering, UCSB, Sep 2004-Sep 2009.
- **Summer Research Intern,** Advanced Transistor and Nanotechnology group, Intel Corporation, Jun-2006-Sep-2006.
- **Graduate Research Assistant,** Center for Solid State Electronics Research, Electrical Engineering, Arizona State University- May-2002 –May-2004
- **Undergraduate Researcher,** Magnetism and Magnetic Materials Lab, Dept of Physics, IIT Madras India, May 2000-May 2001

Honors and Awards

- Nominated for SEAS senior researcher of the year (2019-2020) award (under review).
- Advisor to Mohammad Abuwasib, best outstanding EE PhD student of the year, 2015.
- UUP SUNY Discretionary Lump-Sum award in recognition of excellence in research. 2014, 2015.
- Advisor to Mohammad Abuwasib, best poster award winner at 2nd annual review meeting of Center for Nano-Ferroic Devices (CNFD), University of Nebraska, Lincoln, 2013.
- Golden Reviewer list, IEEE Electron Device Letters, 2011.
- Best Poster award at the 2010 International Workshop on Nitride Semiconductors (IWN 2010).
- Co-author, Best Student Paper in Indium Phosphide and Related Materials Conference 2010 (IPRM 2010).
- Best Student Paper finalist in Indium Phosphide and Related Materials Conference 2009 (IPRM 2009).
- Merit Award for Highest Junior GPA in the class at Indian Institute of Technology (IIT) Madras.

Research Publications

54 peer-reviewed journal publications, 59 peer reviewed conference papers, 1 edited book, 3 book chapters, and 1 patent. Total Google Scholar **citations** (Accessed 11/22/2019): **1393, h-index: 19 and i-10 index: 36**. ** Outcome from supervised student research

Journal Publications:

1. M. Randle, A. Lipatov, A. Kumar, P. A. Dowben, A. Sinitskii, U. Singisetti, and J. P. Bird, "Reply to "Comment on 'Gate-Controlled Metal–Insulator Transition in TiS_3 Nanowire Field-Effect Transistors'"," ACS Nano, vol. 13, no. 8, pp. 8498-8500, 2019/08/27 2019. **
2. B. Chatterjee, K. Zeng, C. D. Nordquist, U. Singisetti, and S. Choi, "Device-Level Thermal Management of Gallium Oxide Field-Effect Transistors," IEEE Transactions on Components, Packaging and Manufacturing Technology, pp. 1-1, 2019. IEEE Early Access. DOI: 10.1109/TCPMT.2019.2923356. **
3. "Structural, band and electrical characterization of β-$(Al_{0.19}Ga_{0.81})_2O_3$ films grown by molecular beam epitaxy on Sn doped β-Ga_2O_3 substrate.", Abhishek Vaidya, Jith Sarker, Yi Zhang, Lauren Lubecki, Joshua Wallace, Jonathan Poplawsky, Kohei Sasaki, Akito Kuramata, Amit Goyal, Joseph Gardella, Jr., Baishakhi Mazumder, and Uttam Singisetti, Journal of Applied Physics 126(9): 095702, 2019. **
4. "A field-plated Ga_2O_3 MOSFET with near 2-kV breakdown voltage and 520 mOhm-cm2 on-resistance", Ke Zeng, Abhishek Vaidya and Uttam Singisetti, Applied Physics Express, vol. 12(8): 081003, July 2019. **
5. "Space-charge limited conduction in epitaxial chromia films grown on elemental and oxide-based metallic substrates", C.-P. Kwan, M. Street, A. Mahmood, W. Echtenkamp, M. Randle, K. He, J. Nathawat, N. Arabchigavkani, B. Barut, S. Yin, R. Dixit, U. Singisetti, Ch. Binek, and J. P. Bird, AIP Advances 9(5): 055018, 2019. **
6. "Characterization and Modeling of Co/$BaTiO_3$/$SrRuO_3$ Ferroelectric Tunnel Junction Memory by Capacitance-voltage (C-V), Current-voltage (I-V) and High-frequency Measurements", M. Abuwasib, H. Lee, J-W. Lee, C-B. Eom, A. Gruverman and U. Singisetti. IEEE Transactions on Electron Devices, vol. 66, no. 5, pp. 2186-2191, May 2019. **
7. "Flexible β-Ga_2O_3 Nanomembrane Schottky Barrier Diodes",E. Swinnich, M. N. Hasan, K. Zeng, Y. Dove, U. Singisetti, B. Mazumder, and, J.-H. Seo, Advancel Electronic Materials, vol.5, no. 3, p. 1800714, 2019. DOI: https://doi.org/10.1002/aelm.201800714. **
8. "Gate-Controlled Metal-Insulator Transition in TiS3 Nanowire Field-Effect Transistors", M. Randle, A. Lipatov, A. Kumar, C.-P. Kwan, J. Nathawat, B.Barut, S. Yin, K. He, N. Arabchigavkani, R. Dixit, T. Komesu, J. Avila, M. C. Asensio, P. A. Dowben, A. Sinitskii, U. Singisetti, and J. P. Bird, ACS Nano, 13 (1), pp 803-811, 2019. DOI: 10.1021/acsnano.8b08260. **
9. "Assessment of phonon scattering-related mobility in β-Ga2O3", A. Parisini, K. Ghosh, U. Singisetti, and R Fornari, Semiconductor Science and Technology 33(10), 105008 (2018). **
10. "Impact Ionization in β-Ga2O3", K. Ghosh, and U. Singisetti, Journal of Applied Physics, 124 (8), (2018). **
11. "1.85 kV Breakdown Voltage in Lateral Field-Plated Ga2O3 MOSFETs", K. Zeng, A. Vaidya, and U. Singisetti, IEEE Electron Device Letters, vol. 39, no. 9,pp. 1385-1388, 2018. **

12. "Towards a Strong Spin Orbit Coupling Magnetoelectric Transistor", P. A. Dowben, C. Binek, K. Zhang, L. Wang, W. N. Mei, J. P. Bird, U. Singisetti, X. Hong, K. L. Wang, and D. Nikonov, IEEE Journal on Exploratory Solid-State Computational Devices and Circuits, vol 4, pp. 1-9, 2018. DOI: 10.1109/JXCDC.2018.2809640
13. "Interface characterization of atomic layer deposited high-k on non-polar GaN", Y. Jia, K. Zeng, and U. Singisetti, Journal of Applied Physics, 122, 154104 (2017). **
14. "Electron Mobility in Monoclinic β-Ga2O3 - Effect of Plasmon-phonon Coupling, Anisotropy, and Confinement", K. Ghosh, and U. Singisetti, Journal of Materials Research 32 (22), 4142 (2017). DOI: 10.1557/jmr.2017.398. **
15. "Recent advances in free-standing single crystalline wide band-gap semiconductors and their applications: GaN, SiC, ZnO, β-Ga2O3, and diamond", M.Kim, J.-H. Seo, U.Singisetti, and Z. Ma, Journal of Materials Chemistry C 5(33): 8338-8354, (2017).
16. "Temperature Dependent Quasi-static Capacitance-Voltage Characterization of SiO2/β-Ga2O3", K. Zeng, and U. Singisetti, Applied Physics Letters, 111, 122108, (2017).**
17. "Negative Differential Conductance & Hot-Carrier Avalanching in Monolayer WS2 FETs."G. He, J. Nathawat, C.-P. Kwan, H. Ramamoorthy, R. Somphonsane, M. Zhao, U. Singisetti, K. Ghosh, M. Terrones, R. Vajtai, P. M. Ajayan, D. K. Ferry and J. P. Bird,Scientific Reports 7(1): 11256, (2017). **
18. "Ab initio velocity-field curves in monoclinic β-Ga_2O_3", K. Ghosh, and U. Singisetti, Journal of Applied Physics, 122, 035702, 2017. **
19. "Sub-100 nm Integrated Ferroelectric Tunnel Junction Devices using Hydrogen Silsesquioxane Planarization", M. Abuwasib, J. Lee, H. Lee, C.-B. Eom, A. Gruverman, and U. Singisetti, Journal of Vacuum Science & Technology B, vol. 32, no.2, 021803, 2017 .**
20. "Ga_2O_3 MOSFETs using Spin-on-Glass Source/Drain Doping Technology", K. Zeng, J. Wallace, C. Heimburger, K. Sasaki, A. Kuramata, T. Masui, J. Gardella, and U. Singisetti, IEEE Electron Device Letters, vol. 38, no. 4,pp. 513-516, 2017. **
21. "Interface characterization of atomic layer deposited Al_2O_3 on m-plane GaN", Y. Jia, J. S. Wallace, E. Echeverria, J. A. Gardella Jr, and U. Singisetti, Phys. Status Solidi B, 1600681, 2017. DOI:10.1002/pssb.201600681. **
22. "Ab-initio calculation of electron-phonon coupling in monoclinic β-Ga_2O_3 crystals", K. Ghosh, and U. Singisetti, *Applied Physics Letters*, vol. 109, p. 072102, (2016). **
23. "Interface State Density in Atomic Layer Deposited SiO_2/β-Ga_2O_3 (201) MOSCAPs", K. Zeng, Y. Jia, and U. Singisetti, *IEEE Electron Device Letters*, vol. 37, no. 7, pp. 906-909, July 2016. **
24. "Scaling of Electroresistance Effect in Fully Integrated Ferroelectric Tunnel Junctions", M. Abuwasib, H. Lu, T. Li, P. Buragohain, H. Lee, C.-B. Eom, A. Gruverman and U. Singisetti, *Applied Physics Letters*, vol. 108, p. 152904, (2016). **
25. "Band Offset Characterization of the Atomic Layer Deposited Aluminum Oxide on m-plane Indium Nitride", Y. Jia, J. Wallace, J. A. Gardella Jr, A. M. Dabiran and U. Singisetti, *Journal of Electronic Materials*, 45 (4), pp 2013-2018, (2016). **
26. "Electrical characterization of atomic layer deposited Al_2O_3/InN Interfaces", Y. Jia, A. M. Dabiran and U. Singisetti, *Journal of Vacuum Science & Technology A*, vol. 34, 01A133 (2016). **
27. "Contact resistance to $SrRuO_3$ and $La_{0.67}Sr_{0.33}MnO_3$ epitaxial films", M. Abuwasib, H. Lee, C.-B. Eom, A. Gruverman and U. Singisetti, *Applied Physics Letters*, vol. 107 (24), 242905, (2015). **
28. "Thermoelectric Transport Coefficients in Mono-layer MoS_2 and WSe_2: Role of Substrate, Interface Phonons, Plasmon, and Dynamic Screening", K. Ghosh, and U. Singisetti, *Journal of Applied Physics*, vol. 118 (14), 135711, (2015). **

29. "Atomic Layer Deposition of Hafnium(IV) Oxide on Graphene Oxide: Probing Interfacial Chemistry and Nucleation by using X-ray Absorption and Photoelectron Spectroscopies", T. E. G. Alivio, L. R. De Jesus, R. V. Dennis, Y. Jia, C. Jaye, D. A. Fischer, U. Singisetti, S. Banerjee, *ChemPhysChem*, 16 (13), 2842-2848, 2015. **
30. "Conduction Mechanisms in CVD-Grown Monolayer MoS_2 Transistors: From Variable-Range Hopping to Velocity Saturation", G. He, K. Ghosh, U. Singisetti, H. Ramamoorthy, R. Somphonsane, G. Bohra, S. Najmaei, R. Vajtai, P. M. Ajayan, and J. P. Bird, *ACS Nano Letters*, vol. 15 (8), 5052-5058, 2015. **
31. "Spectroscopic and electrical calculation of band alignment between atomic layer deposited SiO_2 and β-Ga_2O_3 (-201)", Y. Jia, K. Zeng, J. S. Wallace, J. A. Gardella, and U. Singisetti, *Applied Physics Letters,* vol. 106, 102107 (2015). **
32. "Electric-field dependent conduction mechanisms in crystalline chromia", C.-P.Kwan, R. Chen, U. Singisetti, and J.P. Bird, *Applied Physics Letters*, 106, 112901 (2015). **
33. "Control of InGaAs and InAs facets using metal modulation epitaxy", M.A. Wistey, A. K. Baraskar, U. Singisetti, G. J. Burek, B. Shin, E. Kim, P. C. McIntyre, A. C. Gossard, M. J. W. Rodwell, *Journal of Vacuum Science & Technology B*, vol. 33, 011208 (2015). **
34. "Rode's iterative calculation of surface optical phonon scattering limited electron mobility in N-polar GaN devices", K. Ghosh, and U. Singisetti, *Journal of Applied Physics*, vol. 117, 065703 (2015). **
35. "RF performance and avalanche breakdown analysis of InN tunnel FETs", K. Ghosh, and U.Singisetti, *IEEE Transactional on Electron Devices,* vol.61, no.10, pp.3405-3410, Oct. 2014. **
36. "High performance N-polar GaN Enhancement-mode device technology", U. Singisetti, M. H. Wong, and U. K. Mishra, *Semiconductor Science and Technology,* vol. 28, no. 7, p. 074006, 2013.
37. "N-Polar GaN Epitaxy and High Electron Mobility Transistors", M. H. Wong, S. Keller, Nidhi, S. Dasgupta, D. J. Denninghoff, S. Kolluri, D. F. Brown, J. Lu, N. A. Fichtenbaum, E. Ahmadi, S. P. DenBaars, J. S. Speck, U. K. Mishra, U. Singisetti, S. Rajan, and A. Chini, *Semiconductor Science and Technology,* vol. 28, no. 7, p. 074009, 2013.
38. "Anomalous output conductance in N-polar GaN based High Electron Mobility Transistors", M. H. Wong, U. Singisetti, J.Lu, J. S. Speck, U. K. Mishra", *IEEE Transactions on Electron Devices*, vol. 59, no. 11, pp. 2988-2995, 2012.
39. "Interface roughness scattering in ultra-thin N-polar GaN quantum well channels", U.Singisetti, M. H. Wong, and U. K. Mishra, *Applied Physics Letters.*, vol 101, no.1, pp. 012101-4, 2012.
40. "Enhancement-mode N-polar GaN MOS-HFET with 5-nm GaN channel, 510 mS/mm gm and 0.66 Ohm-mm Ron", U.Singisetti, M. H. Wong, J. S. Speck, and U. K. Mishra, *IEEE Electron Device Letters*, vol. 33, no.1, pp. 26-28, 2012.
41. "Enhancement-mode N-polar GaN MISFETs with current gain cutoff frequency (f_t) of 120 GHz", U.Singisetti, M. H. Wong, S. Dasgupta, J. S. Speck, and U. K. Mishra, *Applied Physics Express,* vol. 4, no. 2, p. 024103, 2011.
42. "Enhancement-mode N-polar GaN MISFETs with self-aligned source/drain regrowth", U. Singisetti, M. H. Wong, S. Dasgupta, Nidhi, B. L. Swenson, B. J. Thibeault, J. S. Speck and U. K. Mishra, *IEEE Electron Device Letters*. Vol. 32, no. 2, pp. 137-139, 2011.
43. "Self-aligned technology for N-polar GaN/Al(Ga)N MIS-HEMTs", Nidhi, S. Dasgupta, D. Brown, U. Singisetti, S. Keller, J. S. Speck and U. K. Mishra; *IEEE Electron Device Letters*., vol. 32, no.1, pp. 33-35, 2011.
44. "Ex-situ Ohmic contacts to n-InGaAs", A. Baraskar, M. A. Wistey, V. Jain, E. Lobisser, U. Singisetti, G. Burek, Y. J. Lee, B. J. Thibeault, A. C. Gossard, M. J. W. Rodwell, *J. Vac. Sci. Tech. B*, 28, C517, 2010.

45. "$In_{0.53}Ga_{0.47}As$ channel MOSFETs with self-aligned InAs Source/Drain formed by MEE regrowth", U.Singisetti, M.A. Wistey, G.J. Burek, A.K. Baraskar, J. Cagnon, B.J. Thibeault, A. C. Gossard, S. Stemmer, M. Rodwell, E.Kim, B.Shin, P.C McIntyre; *IEEE Electron Device Letters*, Vol. 30, No. 11, pp 1128-1130,2009.
46. "III-V/Ge Channel Engineering for Future CMOS", M. Wistey, U. Singisetti, G. Burek, E. Kim, B. J. Thibeault, A. Nelson, J. Cagnon, Y. -J. Lee, S. R. Bank, S. Stemmer, P. C. McIntyre, A. C. Gossard, and M. J. Rodwell, *ECS Trans.* 19 (5), 361, 2009.
47. " InGaAs channel MOSFET with novel self-aligned source/drain MBE regrowth technology", U. Singisetti, M.A. Wistey, G.J. Burek, E. Arkun, Y.Sun, E.J. Kiwera, B. J. Thibeault, A.C. Gossard, C.Palmstrom, and M.J.W. Rodwell; *physica solidi status (c);* Vol. 6, No. 6, pp. 1394-1398, 2009.
48. "Ultralow resistance, nonalloyed Ohmic contacts to n-InGaAs", A. Baraskar, M. A. Wistey, V. Jain, U. Singisetti, G. Burek, B. J. Thibeault, Y. J. Lee, A. C. Gossard and M. J. W. Rodwell,, *J. Vac. Sci. Tech. B,* 27, 2036, 2009.
49. "Height-selective etching for regrowth of self-aligned contacts using MBE", G.J. Burek, M.Wistey, U.Singisetti, A.Nelson, B.Thibeault, S.Bank, A.Gossard, M.Rodwell, *Journal of Crystal Growth;* Vol 311, pp 1984-1987, 2009.
50. "ErAs epitaxial Ohmic contacts to InGaAs/InP"; U.Singisetti, J. Zimmerman, M.A.Wistey, J.Cagnon, B.Thibeault, A. Gossard, S.Stemmer, M.Rodwell, S.R.Bank; *Applied Physics Letters,* vol. 94, pp 083505, 2009.
51. "Ultra-Low resistance *in-situ* Ohmic contacts to InGaAs/InP", U.Singisetti, M.A.Wistey, J.Zimmerman, B.Thibeault, A.Gossard, M.Rodwell; *Applied Physics Letters;* Vol 93, pp183502, 2008.
52. "Collector-Pedestal InGaAs/InP DHBTs Fabricated in a Single-Growth, Triple-Implant Process", N. Parthasarathy, C. Kadow, Z. Griffith, U. Singisetti, M. J. Rodwell; *IEEE Electron Device Letters,* vol. 27 (5), pp 313-316, 2006.
53. "Two-dimensional electrical Characterization of ultrashallow Source/Drain Extensions for nanoscale MOSFETs", U. Singisetti, M.R.McCartney, J.Li, P.S.Chakraborty, S.M.Goodnick, T.J.Thornton, M.N.Kozicki; *Superlattices and Microstructures,* Vol 34, pp 301-310, 2004.
54. "Electron Holographic Characterization of Nanoscale Charge Distribution for Ultra Shallow PN Junctions in Si", P.S. Chakraborty, M.R. McCartney, J. Li, C. Gopalan, U. Singisetti, S.M. Goodnick, T.J. Thornton, M.N. Kozicki; Physica E: Low-dimensional Systems and Nanostructures, Vol 19/1-2, pp 167-172, 2003.

Conference Publications:

1. "Ga_2O_3 field plated MOSFETs with ohmic cap layer", K. Zeng, and U.Singisetti, accepted for presentation at the 3rd International Workshop on Gallium Oxide and Related Materials (IWGO-3), August 12-15, The Ohio State University (OSU) in Columbus, Ohio, 2019
2. "Ab-initio Study of the Effects of Stress on the Low Field Electron Mobility in β-Ga_2O_3", A. Sharma, and U.Singisetti, accepted for presentation at the 3rd International Workshop on Gallium Oxide and Related Materials (IWGO-3), August 12-15, The Ohio State University (OSU) in Columbus, Ohio, 2019.
3. Galiy, P. V., M. Randle, A. Lipatov, L. Wang, S. Gilbert, N. Vorobeva, A. Kumar, C. Kwan, J. Nathawat, B. Barut, S. Yin, N. Arabchigavkani, T. M. Nenchuk, T. Komesu, K. He, A. Yost, U. Singisetti, W. Mei, A. Sinitskii, J. P. Bird, and P. A. Dowben, "Building the Quasi One Dimensional Transistor from 2D Materials," in 2019 IEEE 2nd Ukraine Conference on Electrical and Computer Engineering (UKRCON), 2019, pp. 679-682.

4. " Comparison of field plated and non-field plated Schottky barrier diodes in HVPE grown beta-Ga_2O_3", S. Sharma, K. Zeng, A. Vaidya, and U. Singisetti, presented at the IEEE Device Research Conference, June 23-26, Ann Arbor, MI, 2019
5. "710 V Breakdown Voltage in Field Plated Ga_2O_3 MOSFET", K. Zeng, A. Vaidya, and U. Singisetti, , IEEE DRC Tech Digest, 2018 Device Research Conference, June 25-28, 2018, University of California, Santa Barbara, USA.
6. "Mixed-mode circuit simulation to characterize Ga_2O_3 MOSFET in different device Structures", I.H. Lee, A. Kumar, K. Zeng, U.Singisetti, and X. Yao, presented at the 5th IEEE Workshop on Wide Bandgap Power Devices and Applications (WiPDA 2017), Oct 30-Nov-1, 2017, Albuquerque, NM USA.
7. "Modeling and power loss evaluation of ultrawide band gap Ga2O3 device for high power applications,", I. Lee, A. Kumar, K. Zeng, U. Singisetti and X. Yao, 2017 IEEE Energy Conversion Congress and Exposition (ECCE), Cincinnati, OH, 2017, pp. 4377-4382. doi: 10.1109/ECCE.2017.8096753
8. "Hot Electrons in Layered Materials – A First Principles Perspective", K. Ghosh, U.Singisetti, presented at The 20th International Conference on Electron Dynamics in Semiconductors, Optoelectronics and Nanostructures, Buffalo, NY from July 17 – 21, 2017.
9. "Electrical Evaluation of Epitaxial Chromia Thin Films Grown for Spintronic Device Application", C. P. Kwan, M. Street, A. Mahmood, W. Echtenkamp, J. Nathawat, N. Arabchigavkani, M. Zhao, , B. Barut, S. Yin, M. Randle, U. Singisetti, Ch. Binek and J. P. Bird, presented at The 20th International Conference on Electron Dynamics in Semiconductors, Optoelectronics and Nanostructures, Buffalo, NY from July 17 – 21, 2017.
10. "Temperature Dependent Characterization of Ga_2O_3 MOSFETs with Spin-on-Glass Source/Drain Doping", K. Zeng, and U. Singisetti, , IEEE DRC Tech Digest, 2017 Device Research Conference, June 25-28, 2017, University of Notre Dame, USA.
11. "Anisotropy of Electron Transport in Monoclinic β-Ga_2O_3". K. Ghosh, and U. Singisetti, presented at the *2017 MRS Spring Meeting,* April 17-21, 2017, Phoenix, AZ, USA.
12. "High-field Transport in Low Symmetry β-Ga_2O_3 Crystal". K. Ghosh, and U. Singisetti, presented at the *APS March Meeting,* March 13-17, 2017, New Orleans, LA, USA.
13. "Band Offset Characterization of Atomic Layer Deposited Al_2O_3 on m-plane GaN by X-ray Photoelectron Spectroscopy", Y. Jia, J. S. Wallace, E. Echeverria, J. A. Gardella Jr, and U. Singisetti, *2016 International Workshop on Nitride Semiconductors*, Orlando, FL, USA, 2016.
14. "Electrical Characterization of Atomic Layer Deposited SiO_2/ β-Ga_2O_3 interface", K. Zeng, Y.Jia, and U. Singisetti, *2016 IEEE Lester Eastman Conference on High Performance Devices*, August 2-6, 2016, Lehigh University, Bethlehem, PA, USA.
15. "Depletion and Enhancement Mode β-Ga_2O_3 MOSFETs with ALD SiO_2 gate and near 400 V Breakdown Voltage", K. Zeng, K. Sasaki, A. Kuramata, T.Masui, and U. Singisetti, *2016 IEEE Device Research Conference*, June 19-22, University of Delaware, USA.
16. "Conductance spectroscopy study of interface states in ALD deposited SiO_2 on β-Ga_2O_3", K. Zeng, and U. Singisetti, *1st International Workshop on Gallium Oxide and Related Materials,* Kyoto University, Kyoto, Japan.
17. "CMOS compatible integrated ferroelectric tunnel junctions (FTJ)", M. Abuwasib, H. Lee, P. Sharma, C-B. Eom, A. Gruverman and U. Singisetti, *2015 IEEE Device Research Conference*, Ohio State University, Columbus, OH, USA.

18. "Band offset characterization of atomic layer deposited Al_2O_3 on m-plane (1-100) InN", Y. Jia, J. Wallace, J. A. Gardella Jr, A. K. Dabiran and U. Singisetti, *57th Electronic Materials Conference (EMC),* Ohio State University, Columbus, OH, USA.
19. "Calculation of electron impact ionization co-efficient in β-Ga_2O_3 ", K. Ghosh, and U. Singisetti, *2014 IEEE Device Research Conference*, Santa Barbara, USA.
20. "Electrical Characteristics of Atomic Layer Deposited High-k Dielectrics on InN", Y. Jia, A. Dabiran, and U.Singisetti, *2013 IEEE International Semiconductor Devices Research Symposium,* Bethesda, MD, Dec 11-13, 2013.
21. "Enhancment-mode N-polar GaN devices", U. Singisetti, *2013 Materials Research Symposium (MRS)* Fall Meeting, Boston, USA, Dec 03, 2013.
22. "A 50 nm gate length InN tri-gate FET design with gm of 1.07 mS/μm and ft of 495 GHz", K. Ghosh, and U. Singisetti, *2013 IEEE Device Research Conference,* South Bend, Jun 23-26, 2013.
23. "Vertically scaled 5 nm GaN channel Enhancement-mode N-polar GaN MOS-HFET with 560 mS/mm g_m and 0.76 Ohm-mm R_{on} ", U. Singisetti, M. H. Wong, J. S. Speck, U. K. Mishra, *Late News, 2011 IEEE Device Research Conference*, Santa Barbara.
24. "Anomalous output conductance in N-polar GaN based MIS-HEMTs", M. H. Wong, U. Singisetti, J. Lu, J. S. Speck, U. K. Mishra, *2011 IEEE Device Research Conference*, Santa Barbara.
25. "Interface roughness scattering in ultra-thin GaN channels in N-polar enhancement-mode GaN MISFETs", U. Singisetti, M. H. Wong, J. S. Speck and U. K. Mishra, *2011 International Symposium on Compound Semiconductors*, Berlin, 2011.
26. "100 nm gate length self-aligned E-mode N-polar GaN MISFETs with current gain cutoff frequency (f_t) of 120 GHz", U. Singisetti, M. H. Wong, S. Dasgupta, Nidhi, B. L. Swenson, B. J. Thibeault, J. S. Speck and U. K. Mishra, *2010 International Workshop on Nitride Semiconductors*, Tampa, 2010.
27. "Scalable E-mode N-polar GaN MISFET devices and process with self-aligned source/drain regrowth", U Singisetti, M. H. Wong, S. Dasgupta, Nidhi, B. L. Swenson, B. J. Thibeault, J. S. Speck and U. K. Mishra, *2010 IEEE Device Research Conference*, University of Notre Dame, South Bend, IN, USA.
28. "III-V MOSFETs: Scaling Laws, Scaling Limits, Fabrication Processes", M. J. W. Rodwell, U. Singisetti, M.Wistey, G. J. Burek, A. Carter, A. Baraskar, J. Law, B. J. Thibeault, Eun Ji Kim, B. Shin, Yong-ju Lee, S. Steiger, S. Lee, H. Ryu, Y. Tan, G. Hegde, L. Wang, E. Chagarov, A.C. Gossard, W. Frensley, A. Kummel, C. Palmstrøm, Paul C McIntyre, T. Boykin, G. Klimek, P. Asbeck, *IEEE 22nd International Conference on Indium Phosphide and Related Materials* May 31-June 4, 2010, Kagawa, Japan.
29. "A Self-Aligned Epitaxial Regrowth Process for Sub-100-nm III-V FETs", M. J.W. Rodwell, A. D. Carter, G. J. Burek, M. A. Wistey, B. J. Thibeault, A. Baraskar, U. Singisetti, Byungha Shin, E. Kim, J. Cagnon, Y.-J. Lee, S. Stemmer, P. C. McIntyre, A. C. Gossard, C. Palmstrøm, D. Wang, B. Yue, P. Asbeck, Y. Taur, *2010 MRS Spring Meeting- April 5-9, 2010, San Francisco*.
30. "THz Transistors: Design and Process Technologies", M. J.W. Rodwell, V. Jain, E. Lobisser, A. Baraskar, M. A. Wistey, U. Singisetti, G. J. Burek, B. J. Thibeault, A. C. Gossard, E. J Kim, P. C. McIntyre, B. Yu, P. Asbeck, Y. Taur, *2010 Government Microcircuit Applications and Critical Technology Conference,* March 22-25, 2010, Reno, NV.
31. "In0.53Ga0.47As MOSFETs with 5 nm channel and self-aligned InAs source/drain by MBE regrowth", U.Singisetti, M.A. Wistey, G.J. Burek, A.K. Baraskar, J. Cagnon, B.J. Thibeault, A.Gossard, S. Stemmer, M. Rodwell, E.Kim, B.Shin, P.C McIntyre, *WOCSEMMAD 2010*.
32. "Ex-situ Ohmic Contacts to n-InGaAs Prepared by Atomic Hydrogen Cleaning", A. Baraskar, M.A. Wistey, E. Lobisser, V. Jain, U. Singisetti, G. Burek, Y.J. Lee, B. Thibeault, A. Gossard, M. Rodwell,

37th Conference on the Physics and Chemistry of Surfaces and Interfaces, Jan. 10-14, 2010, Santa Fe, New Mexico, USA.

33. "Sub-100-nm Process Technologies For THz InP HBTs & MOSFETs", M. J.W. Rodwell, E. Lobisser, V. Jain, A. Baraskar, M. A. Wistey, U. Singisetti, G. J. Burek, B. J. Thibeault, A. C. Gossard, E. Kim, P. C. McIntyre, B. Yu, P. Asbeck, Y. Taur, *2009 International Workshop on Terahertz Technology*, Osaka, Japan, Nov. 30 -Dec. 3, 2009.
34. "Process Technologies for Sub-100-nm InP HBTs and InGaAs MOSFETs", M. J. W. Rodwell, M. A. Wistey, U. Singisetti, G. J. Burek, E. Kim, A. Baraskar, J. Cagnon, Y.-J. Lee, S. Stemmer, P. C. McIntyre, A.C. Gossard, B. Yu, P. Asbeck, Y. Taur, *8th Topical Workshop on Heterostructure Microelectronics*, Nagano, Japan, Aug. 2009.
35. "Improved Regrowth of Self-Aligned Ohmic Contacts for III-V FETs", M.A. Wistey, A.K. Baraskar, U. Singisetti, B. Shin, E. Kim, G.J. Burek, P.C. Mcintyre, M.J.W. Rodwell, and A.C. Gossard, *26th North American Molecular Beam Epitaxy Conference (NAMBE 2009)*, Princeton, New Jersey, August 2009.
36. "Enhancement Mode In(0.53)Ga(.47)As MOSFET with Self-Aligned Epitaxial Source/Drain", U.Singisetti, M.A. Wistey, G.J. Burek, A.K. Baraskar, J. Cagnon, B.J. Thibeault, A.Gossard, S. Stemmer, M. Rodwell, E.Kim, B.Shin, P.C McIntyre; *2009 TECHCON*, Renaissance Hotel, Austin, TX, September 14 – 15, 2009.
37. "0.37 mS/μm InGaAs MOSFET with 5 nm Channel and self-aligned Source/Drain regrowth", U.Singisetti, M.A. Wistey, G.J. Burek, A.K. Baraskar, J. Cagnon, B.J. Thibeault, A.Gossard, S. Stemmer, M. Rodwell, E.Kim, B.Shin, P.C McIntyre; *2009 Device Research Conference*, Pennsylvania State University, College Park, PA.
38. "Improved Migration Enhanced Epitaxy for Self-aligned InGaAs Devices", M.Wistey, U.Singisetti, A. Baraskar, G.Burek, M.Rodwell, A.Gossarsd; *2009 Electronic Materials Conference,* Pennsylvania State University, PA.
39. "High Doping Effects on the In-Situ and Ex-Situ Ohmic Contacts to n-InGaAs", A. K. Baraskar, M. A. Wistey, V. Jain, U. Singisetti, G. Burek, B. J. Thibeault, Y. J. Lee, A. C. Gossard, and M. J. W. Rodwell, *2009 Electronic Materials Conference,* Pennsylvania State University, PA,USA
40. "Ultra-low contact resistance for Self-aligned HEMT structures on N-polar GaN by MBE regrowth of InGaN-based contact layers", Nidhi, S.Dasgupta, M.Hong, U.Singisetti, M.Wistey, M.Rodwell, U.Mishra; *2009 Electronic Materials Conference,* Pennsylvania State University, PA,USA.
41. "Enhancement Mode InGaAs MOSFET with self-aligned Epitaxial Source/Drain regrowth", U.Singisetti, M.A. Wistey, G.J. Burek, A.K. Baraskar, J. Cagnon, B.J. Thibeault, A.Gossard, S. Stemmer, M. Rodwell, E.Kim, B.Shin, P.C McIntyre; *Indium Phosphide and Related Materials Conference 2009*, Newport Beach, CA, USA.
42. "Effect of Surface Preparations on Contact Resistivity of TiW to Highly Doped n-InGaAs", V. Jain, A.K. Baraskar, M.A. Wistey, U. Singisetti, Z. Griffith, E. Lobisser, B. J. Thibeault, A.C. Gossard, M. J. W. Rodwell, *Indium Phosphide and Related Materials Conference 2009*, Newport Beach, CA, USA.
43. "III-V/Ge Channel Engineering for Future CMOS", M.A.Wistey, U.Singisetti, G.J. Burek, E.Kim, B.J. Thibeault, A.Nelson, J.Cagnon, Y.J.Lee, S.R. Bank, S.Stemmer, P.C. McIntyre, A.C. Gossard, M. Rodwell, presented at *215th ECS Meeting 2009,* San Francisco, May, 2009.
44. "Ultra-low resistance, non-alloyed ohmic contacts to n-InGaAs", A. K. Baraskar, M. A. Wistey, V. Jain, U.Singisetti, G. Burek, B. J.Thibeault, Y. J. Lee, A. C. Gossard and M. J. W. Rodwell, *Physics and Chemistry of Semiconductor Interfaces,* January 2009, Santa Barbara.
45. "InGaAs channel MOSFET with novel self-aligned source/drain MBE regrowth technology ", U. Singisetti, M.A. Wistey, G.J. Burek, E. Arkun, Y.Sun, E.J. Kiwera, B. J. Thibeault, A.C. Gossard,

C.Palmstrom, and M.J.W. Rodwell, *International Symposium on Compound Semiconductors*, Europa-Park, Freiburg, Germany, September 21 - 24, 2008.

46. "Regrowth of Self-Aligned, Ultra Low Resistance Ohmic Contacts on InGaAs", M.A. Wistey, G.J. Burek, U. Singisetti, A. Nelson, B.J. Thibeault, S.R. Bank, M.J.W. Rodwell, and A.C. Gossard, *5th International Conference on Molecular Beam Epitaxy* August 3 – 8, 2008, University of British Columbia, Vancouver, Canada.
47. "MBE Regrown Contacts for InGaAs Field Effect Transistors", M.Wistey, U.Singisetti, G.Burek, J.Cagnon, S.Stemmer, M.Rodwell, A.Gossard, presented at *2008 Electronic Materials Conference.* June 2008, Santa Barbara,CA.
48. "Technology Development & Design for 22 nm InGaAs/InP-channel MOSFETs", M. J. W. Rodwell, U. Singisetti, M. Wistey, G. Burek, A. Gossard, C. Palmstrøm, E. Arkun, P. Simmonds, S. Stemmer, R. Engel-Herbert, Y. Hwang, Y. Zheng, P. Asbeck, Y. Taur, M. V. Fischetti, B. Yu, D. Wang, Y. Yuan, C. Sachs, A. Kummel, P. McIntyre, C. Van de Walle, and J. Harris, *Indium Phosphide and Related Materials Conference 2008*.
49. "On the Feasibility of low-THz InP HBTs", M. Rodwell, Z. Griffith, E. Lind, U. Singisetti, M. Wistey, A. Gossard, *2008 Government Microcircuit Applications and Circuit Technology Conference*, Mar 17-20, 2008, Las Vegas, NV.
50. "Ultra-Low Resistance Ohmic contacts to InGaAs/InP", U. Singisetti, A. M. Crook, J.D. Zimmerman, M. A. Wistey, A.C. Gossard, and M. J. Rodwell; *2007 Device Research Conference*, University of Notre Dame, South Bend, IN, USA, Jun 2007.
51. "On the Feasibility of few-THz Bipolar Transistors", M Rodwell, E. Lind, Z. Griffith, A.M. Crook, S.R. Bank, U. Singisetti, M. Wistey, G. Burek, A.C. Gossard, *2007 IEEE Bipolar/BiCMOS Circuits and Technology Meeting, 2007*. Sept. 30 2007-Oct. 2 2007 Page(s):17 - 21, Boston, Mass.
52. "Frequency Limits of InP-based Integrated Circuits", Mark Rodwell, E. Lind, Z. Griffith, S. R. Bank, A. M. Crook, U. Singisetti, M. Wistey, G. Burek, A.C. Gossard, *IEEE Int. Conf. Indium Phosphide and Related Materials*, Matsue, Japan, May 14-18, 2007.
53. "MBE growth of ErAs/In(Ga)As epitaxial ultra-low resistance ohmic contacts", S.R. Bank, U. Singisetti, A. M. Crook, J.D. Zimmerman, J. M. O. Zide, A.C. Gossard, and M. J. Rodwell; presented at the *2006 North American MBE Conference*, Durham, NC, USA, Oct 2006.
54. "Two-dimensional electrical Characterization of ultrashallow Source/Drain Extensions for nanoscale MOSFETs", U Singisetti, M. R. McCartney, J. Li, P. S. Chakraborty, S. M.Goodnick, T. J. Thornton, M. N. Kozicki; *Sixth International Conference on New Phenomena in Mesoscopic Systems and Fourth International Conference on Surfaces and Interfaces of Mesoscopic Devices*, Maui, Hawaii, USA, December 2003.
55. "Developing Bipolar Transistors for Sub-mm-Wave Amplifiers and Next-Generation (300 GHz) Digital Circuits", Mark Rodwell, Z. Griffith, N. Parthasarathy, E. Lind, C. Sheldon, S. R. Bank, U. Singisetti, M. Urteaga, K. Shinohara, R. Pierson, P. Rowell, *Device Research Conference, June 2006*, State College PA.
56. "Frequency Limits of Bipolar Integrated Circuits", M.Rodwell, Z.Griffith, N.Parthasarathy, U.Singisetti, V.Paidi, M.Urteaga, R.Pierson, B.Brar; *IEEE MTT-S International Microwave Symposium Digest, 2006*. pp 329-332.
57. "Selectively implanted subcollector DHBTs and implanted pedestal-subcollector InP DHBTs", N. Parthasarathy, Z. Griffith, C. Kadow, U. Singisetti, M. Urteaga, K. Shinohara, B. Brar and M. J. Rodwell; presented at the *Indium Phosphide and Related Materials Conference*, Princeton University, USA, May 2006.
58. "InP HBT Digital ICs and MMICs in the 140-220 GHz band", Mark Rodwell, Z. Griffith, V. Paidi, N. Parthasarathy, C. Sheldon, U. Singisetti, M. Urteaga , R. Pierson, P. Rowell, B. Brar, 2005 Joint 30th

International Conference on Infrared and Millimeter Waves and 13th International Conference on Terahertz Electronics, September 19-23, 2005 Williamsburg, Virginia USA.

59. "Electron Holographic Characterization of Nanoscale Charge Distribution for Ultra Shallow PN Junctions in Si", P. S. Chakraborty, M. R. McCartney, J. Li, C. Gopalan, U. Singisetti, S. M. Goodnick, T.J.Thornton, M.N.Kozicki; *The Fourth International Symposium on Nanostructures and Mesoscopic Systems*, Tempe, February 17-21, 2003

Edited Books:

1. Selected Topics in Electronics and Systems, vol 63, "Widebandgap Semiconductor Electronics and Devices" Edited by Uttam Singisetti, Towhidur Razzak, Yuewei Zhang, World Scientific, 2019.

Book Chapter:

1. "Low and High Field Transport in Ga_2O_3", by K. Ghosh, Uttam Singisetti, in Gallium oxide (Ga2O3): Synthesis, Properties and Applications, Elsevier, 2018.
2. "Electron transport studies in β-Ga2O3 ", by K. Ghosh, Avinash Kumar, Uttam Singisetti, in Gallium Oxide: Crystal Growth, Materials Properties, and Devices, Springer, In Press, 2019.
3. "Theory of High Field Transport in β-Ga_2O_3", by K. Ghosh, Uttam Singisetti, in IJHSES Speical Issue on Widebandgap Semiconductors, World Scientific Publishing Company, In Press, 2019.

Patents:

1. "Non-volatile latch using magneto-electric and ferro-electric tunnel junctions", by Andrew Marshall, Jonathan P. Bird, Uttam Singisetti, Dmitri E. Nikonov, US Patent : US9368208 B1, Jun 14, 2016.

Plenary Speaker

1. "Electron transport and high voltage device studies in β-Ga2O3", Uttam Singisetti, Indo-US Workshop on Frontiers of Excellence in Wide and Ultrawide Bandgap Semiconductors and Electronic Systems Sponsored by Indo-US Science and Technology Forum, December 14-15, 2019 Victor Menezes Convention Centre, IIT Bombay.

Invited Presentations

1. "Ga_2O_3 materials and devices" invited talk to be presented at the 237th ECS Spring Meeting, May 10-15, 2020 — Montreal, Canada
2. "Low-field and high field transport in monoclinic β-Ga_2O_3" , Uttam Singisetti, Krishnendu Ghosh, Ankit Sharma, Invited Presentation, 3rd International Workshop on Gallium Oxide and Related Materials (IWGO-3), August 12-15, The Ohio State University (OSU) in Columbus, Ohio, 2019
3. "Transport and device studies in beta-gallium oxide and related alloys", Uttam Singisetti, Invited Presentation, 4th Functional Oxide Thin Films for Advanced Energy and Information Technology Conference, 17 – 20 July 2019, 2019, Lisbon, Portugal
4. "Ga_2O_3 power and RF devices: opportunities and challenges", Uttam Singisetti, Invited Presentation, Third Ultrawide-Bandgap Workshop, May 14-16, 2019, Army Research Laboratory, Adelphi, MD

5. "Transport, interface and device studies in β-Ga_2O_3", Uttam Singisetti, Krishnendu Ghosh, Ke Zeng, Abhishek Vaidya, Ankit Sharma, Avinash Kumar, Invited Presentation, European Materials Research Society (EMRS), Fall 2018 meeting, Symposium P "Epitaxial oxide films for electronic applications", Sept 17-Sept 20, Warsaw, Poland, 2018.
6. "Low-field and high field transport in monoclinic β-Ga_2O_3" Uttam Singisetti, Krishnendu Ghosh, Ankit Sharma, Invited Presentation,2018 Lester Eastman Conference on High Performance Devices (LEC 2018), August 12-14, Ohio State University, Columbus, OH, 2018
7. "Lateral Ga_2O_3 MOSFETs with 1.85 kV breakdown", U. Singisetti, K. Zeng, A. Vaidya, Invited Talk, 3rd US Workshop on Gallium Oxide (GOX 2018), August 15-16, Ohio State University, Columbus, OH, 2018
8. "Ga_2O_3/dielectric interface characterization and transport in Ga_2O_3", 2016 2nd AFRL Workshop on β-Ga_2O_3: Synthesis, Characterization, and Applications, Arlington, VA, Dec 12-13, 2016.
9. "Ferroelectric tunnel junctions for beyond-CMOS computing", Intel-NRI annual meeting, Hillsboro, OR, Sept 8-9, 2016.
10. "Scalability and integration challenges of ferroelectric tunnel junctions (FTJs)", e-workshop to members of Nanoelectronics Research Initiative (NRI) sponsored by Semiconductor Research Corporation (SRC), Tuesday, May 24, 2015.
11. "High power to low power devices: Materials to devices", by Uttam Singisetti, Invited presentation to the Green ICT Device Advanced Development Center at the National Institute of Information and Communication and Technology (NICT), Tokyo, Japan, November 2nd, 2015.
12. "Advanced III-N device technologies for next generation THz devices", AFRL, Dayton, Ohio, April 19, 2013.
13. "GaN HEMTs for More than Moore", SEMATECH Inc, CNSE, University at Albany, Oct 02, 2012.
14. "Enhancment-mode N-polar GaN devices", U. Singisetti, 2013 Materials Research Symposium (MRS) Fall Meeting, Boston, USA, Dec 03, 2013.
15. "High performance III-V and GaN transistors with self-aligned technology: A way to reach intrinsic device performance", Electrical Engineering, University at Buffalo, April 27, 2011.

Professional Service

- Inaugural organizing committee member of GOX 2020, a national workshop on Ga_2O_3 research.
- Guest Editor, IJHSES Special Issue on Widebandgap Semiconductors, invited by IJHSES Editor-In-Chief : Prof. Micheal Shur, RPI
- Senior Member Institute of Electrical and Electronics Engineers (IEEE), IEEE Electron Devices Society, IEEE Microwave Theory and Techniques Society
- IEEE EDS Technical Committee on Compound Semiconductor Devices and Circuits
- Member of American Physical Society (APS)
- Technical Program Committee member: IEEE Device Research Conference (DRC), 2017,2018, 2019.
- Organized a DRC rump session on "Ultrawide-bandgap semiconductors (Ga2O3, Diamond, AlN)...Do we need them beyond GaN/SiC.", June 2018.
- Technical Program Committee member 3rd International Workshop on Gallium Oxide and Related Materials (IWGO-3), 2019.
- Invited to participate, present and provide feedback at the 2nd AFRL Workshop on β-Ga_2O_3: Synthesis, Characterization, and Applications, Arlington, VA, Dec 12-13, 2016.

- Invited to participate and provide feedback at the NSF US EU Workshop on 2D Layered Materials and Devices held in Arlington, VA, April 2015.
- Technical Program Committee member: 2014 IEEE Lester Eastman Conference on High Performance Devices (LEC 2014), sub-committee on high-speed devices and logic switches
- Session chair on high speed electronics session, 2014 IEEE Lester Eastman Conference, Cornell University, 2014.
- Organized panel discussion on THz devices and technology at the 2014 IEEE Lester Eastman conference, Cornell University, 2014
- Technical Program Committee member: 2013 IEEE International Semiconductor Devices Symposium (ISDRS 2013).
- Session chair for the Widebandgap IV, and Radiation and Photonics sessions in 2013 IEEE International Semiconductor Devices Symposium (ISDRS 2013), Baltimore, 2013.
- Session chair, Session T4: III-Nitrides I: Epitaxy and Electronic Devices, 2013 Materials Research Society (MRS) Fall meeting, 2013.
- Organizer: Workshop on Oxide Semiconductors: Properties and Applications, University at Buffalo held on June 4th, 2012.
- Proposal reviewer for National Science Foundation (NSF), Army Research Office (ARO), Defense Threat Reduction Agency (DTRA) and Airforce Office of Scientific Research (AFOSR)
- Reviewer for the following journals:
  IEEE Electron Device Letters
  IEEE Transactions on Electron Devices
  IEEE Journal of Electron Devices Society.
  Journal of Applied Physics
  Applied Physics Letters
  Physica Status Solidi (c)
  Electro chemical and solid state letters
  Solid State Electronics
  ETRI Journal
  IEEE Photonics Technology Letters
  IEEE Transactions on Microwave Theory and Techniques
  Scientific Reports

University Service

- School of Engineering Associate Professor Tenure and Promotions Committee, 2017-present, chair 2019-present
- Electronics and Optics faculty search committee chair, Fall 2017
- Faculty mentor to 2 tenure track Assistant Professors in EE
- Proposal reviewer UB ReNEW program, 2017, 2018.
- Proposal reviewer UB IMPACT program, Summer 2016
- Solid state electronics faculty search committee, Spring 2016
- EE Graduate Poster Competition Judge, Spring 2016.
- Integrated Nanostructure Systems (INS) faculty advisory committee, Fall2013-till date
- Embedded systems and microcontroller faculty search committee member, Spring 2014
- EE technical associate staff search committee member , Fall 2013

- James J. Whalen Memorial Multistage Amplifier Design Competition Judge, Spring 2013.
- Microelectronics Faculty Search Committee Member, Spring 2012.
- EE Marketing and Outreach Committee Member, 2012-2016.
- EE Graduate Poster Competition Judge, Spring 2012.
- James J. Whalen Memorial Multistage Amplifier Design Competition Judge, Spring 2012.
- Freshman Mentorship Program EE Faculty (Spring 2012).

Courses Taught

EE Dept. University at Buffalo

- RF/Microwave Circuits I (EE409/EE569): Spring 2012, Fall 2012, Fall 2013, Fall 2014, Fall 2015, Fall 2016, Fall2018, Fall2019. Senior/ Graduate course. Added Advanced Design System (ADS) software tool for RF design, which is the leading tool for RF, microwave design. Added a laboratory component to the RF/Microwave course from Fall 2012 to give the students hands-on experience with RF design and measurement tools.

- Analog Integrated Circuit Layout (EE449/EE594): Fall 2011, Spring 2013, Spring 2014. Senior/ Graduate course. Added SILVACO TCAD software tool for analog device design in Spring 2014

- RF/Microwave Circuits II (EE 456/564) : Spring 2015, Spring 2016, Spring2017, Spring 2018, Spring 2019. Developed the part 2 of the Rf/Microwave circuits course focusing on active RF circuit design. Laboratory component with design, and implementation of active RF circuits.

- RF/Microwave course series will be used for Keysight RF & Microwave Industry-Ready Student Certification Program (starting 2020).

Student Advisement

4 PhD and 9 MS students graduated, currently advising 6 PhD students. Advised 4 UG student

Graduated PhD:
- Ye Jia (PhD), Dec 2016, now at IM Flash Technologies
- Krishnendu Ghosh (PhD), Jul 2017, now at Intel Corporation
- Mohammad Abuwasib (PhD), Jul 2017, now at Intel Corporation
- Ke Zeng (PhD), Jun 2019), now at Stanford University

Graduated MS/UG:
- Ye Jia (MS, 2013), enrolled for PhD at UB
- Krishnendu Ghosh (MS 2014), enrolled for PhD at UB
- Ke Zeng (MS 2015), enrolled for PhD at UB
- Anna C. Smith (Fall 2015-Spring2016), UG student
- Nicholas Grasso (MS, Fall 2016), currently at Northrup Grumman, Amherst, NY
- Kendall Reneau (Summer 2017), UG student at UB
- Nikhil Chitta (MS, Fall 2017), now at Qualcomm

- Shivam Prakash (MS, Fall 2017) now at Remy international
- Kendall Reneau (Summer 2018), UG student at UB
- Ankit Sharma (MS, Summer 2018), currently enrolled for PhD at UB
- Avinash Kumar (MS, Fall2018), currently enrolled for PhD at UB
- Susmita Gangopadhyay (MS, Spring 2019), now at Intel Corporation
- Jean De Dieu, Niyomugabo (Summer 2019) UG student at UB

Current:

- Abhishek Vaidya (PhD, Expected graduation: Summer 2020)
- Avinash Kumar (PhD, Expected graduation: Dec 2021)
- Chinmoy Shah (PhD, Expected graduation: Aug 2022)
- Ankit Sharma (PhD, Expected graduation Dec 2021)
- Shivam Sharma (PhD, Expected graduation Dec 2022)
- Sudipto Saha (PhD, starting in Jan 2020)

PhD and MS Committee Member:

- Jubin Nathawat (PhD)
- Dongyin Ren (PhD)
- Zhiying Chen (PhD)
- Yaohsuen Lee (PhD)
- Arka Karmakar (PhD)
- Fei Lu (PhD)
- Bilel Neji (PhD)
- Jing Xu (PhD)
- Borui Chen (MS)
- Je Bum Lee (PhD)
- Richard Tarbell (PhD)
- Yuan Yao (PhD)
- Tianmu Zhang (PhD)
- Chong Tong (PhD)
- Zhiying Chen (PhD)
- Zhen Pan (MS)
- Qingyang Liu (MS)
- Harihara Sudahar Ramamoorthy (MS, PhD)