



**Name:** Dr. Aritra Acharyya

**Experience:** 7 Years

**Qualification:** Ph.D. (Tech.), M.Tech., B.E.

**Designation:** Assistant Professor

**Area of Specialization:** Semiconductor Devices and Transport Phenomena

## LIST OF PUBLICATIONS

NATURE OF PUBLICATIONS	JOURNALS (58)		CONFERENCES (54)		BOOKS AUTHORED/ EDITED	TOTAL <sup>†</sup>
	INTERNATIONAL	NATIONAL	INTERNATIONAL	NATIONAL		
NUMBER OF PUBLICATIONS	48	13	37	17	6	121

### JOURNAL PAPERS: (Total Impact Factor: 34.937 (2016))

- [1] **Aritra Acharyya**, "Diminution of Impact Ionization Rate of Charge Carriers in Semiconductors due to Acoustic Phonon Scattering," Applied Physics A [Germany], Springer, pp. 1-12, 2017, Published Online: DOI 10.1007/s00339-017-1245-2. (**Impact Factor: 1.455 (2016)**)
- [2] **Aritra Acharyya**, "Gallium Phosphide IMPATT Sources for Millimeter-Wave Applications," Iranian Journal of Electrical and Electronic Engineering, Accepted, 2017.
- [3] Monisha Ghosh, Somrita Ghosh, Prasit Kumar Bandyopadhyay, Arindam Biswas, A.K. Bhattacharjee and **Aritra Acharyya**, "Noise Performance of 94 GHz Multiple Quantum Well Double-Drift Region IMPATT Sources," Journal of Active and Passive Electronic Devices [USA], Old City Publishing, vol.00, pp. 1-13, 2017.
- [4] Prajukta Mukherjee, Debjyoti Chatterjee and **Aritra Acharyya**, "Influence of Oblique Magnetic Field on the Impact Ionization Rate of Charge Carriers in Semiconductors," Journal of Computational Electronics [USA], Springer, vol. 16, issue 3, pp. 503-513, 2017. (**Impact Factor: 1.526 (2016)**)

- [5] **Aritra Acharyya** and Somrita Ghosh, "Dark Current Reduction in Nano-Avalanche Photodiodes by Incorporating Multiple Quantum Barriers," International Journal of Electronics [UK], Taylor & Francis, vol. 104, issue 12, pp. 1957-1973, 2017. **(Impact Factor: 0.729 (2016))**
- [6] Monisha Ghosh, Somrita Ghosh and **Aritra Acharyya**, "Self-Consistent Quantum Drift-Diffusion Model for Multiple Quantum Well IMPATT Diodes," Journal of Computational Electronics [USA], Springer, vol. 15, issue 4, pp. 1370-1387, 2017. **(Impact Factor: 1.526 (2016))**
- [7] Prasit Kumar Bandyopadhyay, Subhendu Chakraborty, Arindam Biswas, **Aritra Acharyya** and A.K. Bhattacharjee, "Large-Signal Characterization of Millimeter-Wave IMPATTs: Effect of Reduced Impact Ionization Rate of Charge Carriers due to Carrier-Carrier Interactions," Journal of Computational Electronics [USA], Springer, vol. 15, pp. 646-656, 2016. **(Impact Factor: 1.526 (2016))**
- [8] Antara Bhowmick, Apala Banerjee, Aditya Pandey, Alope Yadav, Purbita Pallye and **Aritra Acharyya**, "Impact Ionization Rate of Electrons in Monolayer Graphene Nanoribbons," IETE Journal of Research [India], Taylor & Francis, pp. 645-653, 2016, published online, DOI: 10.1080/03772063.2016.1147390. **(Impact Factor: 0.909 (2016))**
- [9] Partha Banerjee, **Aritra Acharyya**, Arindam Biswas and A. K. Bhattacharjee, "Effect of Magnetic Field on the RF Performance of Millimeter-Wave IMPATT Source," Journal of Computational Electronics [USA], Springer, vol. 15, pp. 210-221, 2016. **(Impact Factor: 1.526 (2016))**
- [10] **Aritra Acharyya**, Subhashri Chatterjee, Adrija Das, Apala Banerjee, Aditya Raj Pandey, Alope Yadav, and J. P. Banerjee, "Additional Confirmation of a Generalized Analytical Model Based on Multistage Scattering Phenomena to Evaluate the Ionization Rates of Charge Carriers in Semiconductors," Journal of Computational Electronics [USA], Springer, vol. 15, pp. 34-39, 2016. **(Impact Factor: 1.526 (2016))**
- [11] Utsab Mukherjee, Sonali Banerjee, Rituparna Sarkar, Upama Ghosh, Jyotisman Sarkar, Saikat Sinha, Shovan Mukherjee, Debalina Ghosh, and **Aritra Acharyya**, "Single Quantum Well p-n Junction Diode Based on Graphene Nanoribbon," Graphene [USA], American Scientific Publishers, vol. 3, pp. 6-15, 2015.
- [12] **Aritra Acharyya**, Jayabrata Goswami, Suranjana Banerjee and J. P. Banerjee, "Quantum Corrected Drift-Diffusion Model for Terahertz IMPATTs Based on Different Semiconductors," Journal of Computational Electronics [USA], Springer, vol. 14, pp. 309-320, 2015. **(Impact Factor: 1.526 (2016))**
- [13] **Aritra Acharyya**, Moumita Mukherjee and J. P. Banerjee, "Effects of Tunnelling Current on mm-wave IMPATT Devices," International Journal of Electronics [UK], Taylor & Francis, vol. 102, no. 9, pp. 1429-1456, 2015. **(Impact Factor: 0.729 (2016))**
- [14] Bhadrani Banerjee, Anvita Tripathi, Adrija Das, Kumari Alka Singh, **Aritra Acharyya** and J. P. Banerjee, "IMPATT Diodes Based on <111>, <100> and <110> Oriented GaAs: A Comparative Study to Search the Best Orientation for Millimeter-Wave Atmospheric Windows," International Scholarly Research Notices, vol. 2015, pp. 1-11, 2015.
- [15] **Aritra Acharyya**, Subhashri Chatterjee, Adrija Das and Kumari Alka Singh, "Self-Consistent Solution of Schrödinger-Poisson Equations in a Reverse Biased Nano-Scale p-n Junction Based on

- Si/Si<sub>0.4</sub>Ge<sub>0.6</sub>/Si Quantum Well," Journal of Computational Electronics [USA], Springer, vol. 14, pp. 180-191, 2015. **(Impact Factor: 1.526 (2016))**
- [16] **Aritra Acharyya** and J. P. Banerjee, "A Generalized Analytical Model Based on Multistage Scattering Phenomena for Estimating the Impact Ionization Rate of Charge Carriers in Semiconductors," Journal of Computational Electronics [USA], Springer, vol. 13, pp. 917-924, 2014. **(Impact Factor: 1.526 (2016))**
- [17] Suranjana Banerjee, **Aritra Acharyya**, Monojit Mitra and J. P. Banerjee, "A Four-Step Iterative Design Optimization Technique for DLHL IMPATTs," IETE Journal of Research [India], Taylor & Francis, pp. 1-6, 2014, published online: DOI: 10.1080/03772063.2014.961982. **(Impact Factor: 0.909 (2016))**
- [18] **Aritra Acharyya**, Subhashri Chatterjee, Jayabrata Goswami, Suranjana Banerjee and J. P. Banerjee, "Quantum Drift-Diffusion Model for IMPATT Devices," Journal of Computational Electronics [USA], Springer, vol. 13, pp. 739-752, 2014. **(Impact Factor: 1.526 (2016))**
- [19] Atindra Mohan Bandyopadhyay, **Aritra Acharyya** and J. P. Banerjee, "Multiple-Band Large-Signal Characterization of Millimeter-Wave Double Avalanche Region Transit Time Diode," Journal of Computational Electronics [USA], Springer, vol. 13, pp. 769-777, 2014. **(Impact Factor: 1.526 (2016))**
- [20] **Aritra Acharyya**, Aliva Mallik, Debopriya Banerjee, Suman Ganguli, Arindam Das, Sudepto Dasgupta and J. P. Banerjee, "IMPATT Devices Based on Group III-V Compound Semiconductors: Prospects as Potential Terahertz Radiators," HKIE Transactions [Hong Kong], Taylor & Francis, vol. 21, issue 3, pp. 135-147, 2014.
- [21] **Aritra Acharyya**, Jayabrata Goswami, Suranjana Banerjee and J. P. Banerjee, "Estimation of Most Favorable Optical Window Position Subject to Achieve Finest Optical Control of Lateral DDR IMPATT Diode Designed to Operate at W-Band," Radioengineering [Czech and Slovak], vol. 23, no. 2, pp. 739-753, 2014. **(Impact Factor: 0.945 (2016))**
- [22] **A. Acharyya**, P. Sen, E. Chakraborty, P. Sarkar, N. Banerjee, R. Dey, A. R. Mondal, S. Chatterjee and T. K. Sengupta, "A Proposed Modified Constant Frequency Variable Duty PWM Based Speed Control Technique for DC Motor Drives: A New Method to Achieve More Precise Control over Speed," Physical Science International Journal [India], vol. 4, issue 6, pp. 825-841, 2014.
- [23] **Aritra Acharyya**, Suranjana Banerjee and J. P. Banerjee, "Optical Control of Large-Signal Properties of Millimeter-Wave and Sub-Millimeter-Wave DDR Si IMPATTs," Journal Computational Electronics [USA], Springer, vol. 13, pp. 408-424, 2014. **(Impact Factor: 1.526 (2016))**
- [24] **Aritra Acharyya**, Aliva Mallik, Debopriya Banerjee, Suman Ganguli, Arindam Das, Sudepto Dasgupta and J. P. Banerjee, "Large-Signal Characterizations of DDR IMPATT Devices Based on Group III-V Semiconductors at Millimeter-Wave and Terahertz Frequencies," Journal of Semiconductors [China], IOP Science, 2014, in press.
- [25] **Aritra Acharyya**, Suranjana Banerjee and J. P. Banerjee, "Effect of Photo-Irradiation on the Noise Properties of Double-Drift Silicon MITATT Device," International Journal of Electronics [UK], Taylor & Francis, vol. 101, no. 9, 1270-1286, 2014. **(Impact Factor: 0.729 (2016))**

- [26] **Aritra Acharyya** and J. P. Banerjee, "Prospects of IMPATT Devices based on Wide Bandgap Semiconductors as Potential Terahertz Sources," *Applied Nanoscience*, Springer, vol. 4, pp. 1-14, 2014. **(Impact Factor: 3.325 (2016))**
- [27] **Aritra Acharyya**, Suranjana Banerjee and J. P. Banerjee, "Influence of Skin Effect on the Series Resistance of Millimeter-Wave of IMPATT Devices," *Journal Computational Electronics [USA]*, Springer, vol. 12, issue 3, pp. 511-525, 2013. **(Impact Factor: 1.526 (2016))**
- [28] **Aritra Acharyya**, Suranjana Banerjee and J. P. Banerjee, "Potentiality of Semiconducting Diamond as Base Material of Millimeter-Wave and Terahertz IMPATT Devices," *Journal of Semiconductors [China]*, IOP Science, vol. 35, no. 3, pp. 034005-1-11, 2013.
- [29] **Aritra Acharyya**, Jit Chakraborty, Kausik Das, Subir Datta, Pritam De, Suranjana Banerjee and J. P. Banerjee, "Large-Signal Characterization of DDR Silicon IMPATTs Operating up to 0.5 THz," *International Journal of Microwave and Wireless Technologies*, Cambridge University Press and the European Microwave Association [UK], vol. 5, no. 5, pp. 567-578, 2013. **(Impact Factor: 0.976 (2016))**
- [30] **Aritra Acharyya**, Jit Chakraborty, Kausik Das, Subir Datta, Pritam De, Suranjana Banerjee and J. P. Banerjee, "Large-Signal Characterization of DDR Silicon IMPATTs Operating in Millimeter-Wave and Terahertz Regime," *Journal of Semiconductors [China]*, IOP Science, vol. 34, no. 10, 104003-8, 2013.
- [31] **Aritra Acharyya**, Koyel Datta, Raya Ghosh, Monalisa Sarkar, Roshmy Sanyal, Suranjana Banerjee and J. P. Banerjee, "Diamond Based DDR IMPATTs: Prospects and Potentiality as Millimeter-Wave Source at 94 GHz Atmospheric Window," *Radioengineering [Czech and Slovak]*, vol. 22, no. 2, pp. 624-631, 2013. **(Impact Factor: 0.945 (2016))**
- [32] **Aritra Acharyya** and J. P. Banerjee, "Studies on Anisotype Si/Si<sub>1-x</sub>Ge<sub>x</sub> Heterojunction DDR IMPATTs: Efficient Millimeter-Wave Sources at 94 GHz Window," *IETE Journal of Research [India]*, vol. 59, issue 4, pp. 424-432, July-August 2013. **(Impact Factor: 0.909 (2016))**
- [33] Suranjana Banerjee, **Aritra Acharyya** and J. P. Banerjee, "Noise Performance of Heterojunction DDR MITATT Devices Based on Si-Si<sub>1-x</sub>Ge<sub>x</sub> at W-Band," *Active and Passive Electronic Components [USA]*, vol. 2013, pp. 1-7, 2013.
- [34] Moumita Ghosh, Mangolika Mondal and **Aritra Acharyya**, "The Effect of Electron versus Hole Photocurrent on Opto-Electric Properties of *p<sup>+</sup>-p-n-n<sup>+</sup>* Wz-GaN Reach-Through Avalanche Photodiodes," *Advances in Optoelectronics [USA]*, vol. 2013, pp. 1-12, 2013.
- [35] **Aritra Acharyya**, Suranjana Banerjee and J. P. Banerjee, "A Proposed Simulation Technique to Study the Series Resistance and Related Millimeter-Wave Properties of Ka-Band Si IMPATTs from the Electric Field Snap-Shots," *International Journal of Microwave and Wireless Technologies*, Cambridge University Press and the European Microwave Association [UK], vol. 5, no. 1, pp. 91-100, 2013. **(Impact Factor: 0.976 (2016))**
- [36] **Aritra Acharyya** and J. P. Banerjee, "Potentiality of IMPATT Devices as Terahertz Source: An Avalanche Response Time Based Approach to Determine the Upper Cut-off Frequency Limits,"

IETE Journal of Research [India], vol. 59, issue 2, pp. 118-127, March-April 2013. (**Impact Factor: 0.909 (2016)**)

- [37] **Aritra Acharyya**, Suranjana Banerjee and J. P. Banerjee, "Effect of Junction Temperature on the Large-Signal Properties of a 94 GHz Silicon Based Double-Drift Region Impact Avalanche Transit Time Device," Journal of Semiconductors [China], IOP Science, vol. 34, issue 2, pp. 024001-12, 2013.
- [38] L. P. Mishra, **Aritra Acharyya** and Monijit Mitra, "Transient Thermal Analysis of Pulsed Silicon SDR IMPATT at 35 GHz," International Journal of Soft Computing and Engineering, vol. 3, issue 1, pp. 102-106, 2013.
- [39] **Aritra Acharyya**, Suranjana Banerjee and J. P. Banerjee, "Large-Signal Simulation of 94 GHz Pulsed DDR Silicon IMPATTs Including the Temperature Transient Effect," Radioengineering [Czech and Slovak], vol. 21, no. 4, pp. 1218-1225, 2012. (**Impact Factor: 0.945 (2016)**)
- [40] **Aritra Acharyya**, Suranjana Banerjee and J. P. Banerjee, "Optical Control of Millimeter-wave Lateral Double-Drift Region Silicon IMPATT Device", Radioengineering [Czech and Slovak], vol. 21, no. 4, pp. 1208-1217, 2012. (**Impact Factor: 0.945 (2016)**)
- [41] Moumita Ghosh, Mangolika Mondal and **Aritra Acharyya**, "4H-SiC Avalanche Photodiodes as UV Sensors: A Brief Review," Journal of Electron Devices [France], vol. 15, pp. 1291-1295, 2012.
- [42] **Aritra Acharyya** and J. P. Banerjee, "Design and simulation of silicon carbide poly-type double-drift region avalanche photodiodes for UV sensing," Journal of Optoelectronics and Advanced Materials [Romania], vol. 14, issue 7 - 8, pp. 630-639, 2012. (**Impact Factor: 0.290 (2016)**)
- [43] **Aritra Acharyya**, Debalina Chatterjee, Aritra Mondal and Nayan Banerjee, "Experimental Study on the Effect of Magnetic Field on Current-Voltage Characteristics of *n*-Channel Enhancement-type MOSFET", Journal of Electron Devices [France], vol. 13, pp. 945-948, 2012.
- [44] **Aritra Acharyya** and J. P. Banerjee, "Analysis of Photo-Irradiated Double-Drift Region Silicon Impact Avalanche Transit Time Devices in the Millimeter-wave and Terahertz Regime," Terahertz Science and Technology [China], vol. 5, no. 2, pp. 97-113, 2012.
- [45] **Aritra Acharyya**, Suranjana Banerjee and J. P. Banerjee, "Effect of Package Parasitics on the Millimeter-wave Performance of DDR Silicon IMPATT Device Operating at W-band," Journal of Electron Devices [France], vol. 13, pp. 960-964, 2012.
- [46] **Aritra Acharyya**, Suranjana Banerjee and J. P. Banerjee, "Calculation of Avalanche Response Time for Determining the High Frequency Performance Limitations of IMPATT Devices," Journal of Electron Devices [France], vol. 12, pp. 756-760, 2012.
- [47] **Aritra Acharyya**, Suranjana Banerjee and J. P. Banerjee, "Dependence of DC and Small-signal Properties of Double Drift Region Silicon IMPATT Device on Junction Temperature," Journal of Electron Devices [France], vol. 12, pp. 725-729, 2012.
- [48] **Aritra Acharyya** and J. P. Banerjee, "Numerical Modeling of Series Resistance of Millimeter-wave DDR IMPATTs", International Journal of Electronics and Electrical Engineering [India], vol. 2, issue 3, pp. 9-10, 2012.

- [49] Jit Chakraborty, Kausik Das, Subir Kumar Datta, Pritam De and **Aritra Acharyya**, "R-2R Ladder D/A Converter Circuit Performance Optimization for Mixed-Signal VLSI Chips via Generalized Geometric Programming", *International Journal of Scientific & Engineering Research [India]*, vol. 3, issue 5, pp. 1-5, 2012.
- [50] **Aritra Acharyya** and J. P. Banerjee, "A Comparative Study on the Effect of Optical Illumination on  $\text{Si}_{1-x}\text{Ge}_x$  and Si Based DDR IMPATT Diodes at W-Band," *Iranian Journal of Electronics and Electrical Engineering [Iran]*, vol. 7, no. 3, pp. 179-189, 2011.
- [51] **Aritra Acharyya**, Moumita Mukherjee and J. P. Banerjee, "Influence of Tunnel Current on DC and Dynamic Properties of Silicon Based Terahertz IMPATT Source," *Terahertz Science and Technology [China]*, vol. 4, no. 1, pp. 26-41, 2011.
- [52] **Aritra Acharyya**, Moumita Mukherjee and J. P. Banerjee, "Noise in Millimeter-wave Mixed Tunneling Avalanche Transit Time Diodes," *Archives of Applied Science Research [India]*, vol. 3, issue 1, pp. 250-266, 2011.
- [53] **Aritra Acharyya** and J. P. Banerjee, "Design and Optimization of Pulsed Mode Silicon Based DDR IMPATT Diode Operating at 0.3 THz," *International Journal of Engineering Science and Technology [India]*, vol. 3, no. 1, pp. 332-339, 2011.
- [54] **Aritra Acharyya** and J. P. Banerjee, "Heat Sink Design and Temperature Distribution Analysis for Millimeter Wave IMPATT Oscillators using Finite Difference Method," *Archives of Applied Science Research [India]*, vol. 3, issue 2, pp. 107-120, 2011.
- [55] **Aritra Acharyya**, Jayanta Mukherjee, Moumita Mukherjee and J. P. Banerjee, "Heat Sink Design for IMPATT Diode Sources with Different Base Materials Operating at 94 GHz," *Archives of Physics Research [India]*, vol. 2, issue 1, pp. 107-126, 2011.
- [56] **Aritra Acharyya**, "A Novel Approach to Design ASV Based Security System Using Neural Network", *International Journal of Electronic Engineering Research [India]*, vol. 3, no. 1, pp. 45-54, 2011.
- [57] **Aritra Acharyya**, Moumita Mukherjee and J. P. Banerjee, "Noise Performance of Millimeter-wave Silicon Based Mixed Tunneling Avalanche Transit Time (MITATT) Diode," *International Journal of Electrical and Electronics Engineering [Malaysia]*, vol. 4, no. 8, pp. 577-584, 2010.
- [58] **Aritra Acharyya** and J. P. Banerjee, "Heat Sink Temperature Profile of Ring Geometry DDR IMPATT Diode," *Journal of Telecommunications [UK]*, vol. 6, issue 1, pp. 27-31, 2010.
- [59] **Aritra Acharyya**, Baisakhi Pal and J. P. Banerjee, "Temperature Distribution inside Semi-Infinite Heat Sinks for IMPATT Sources," *International Journal of Engineering Science and Technology [India]*, vol. 2, issue-10, pp. 5142-5149, 2010.
- [60] **Aritra Acharyya**, Baisakhi Pal and J. P. Banerjee, "Comparison Between 2-D Temperature Distribution Analysis Inside a Semi-infinite Copper Heat Sink for Mesa and Ring Structure of Si-IMPATT Diodes using Analytical Method and Finite Difference Method," *International Journal of Electronic Engineering Research [India]*, vol. 2, no. 4, pp. 553-567, 2010.

- [61] **Aritra Acharyya**, Arijit Das and J. P. Banerjee, "Design of Bias Filter for Waveguide Structure of Millimeter Wave Si-IMPATT Diode Oscillator at 94 GHz," International Journal of Electronic Engineering Research [India], vol. 2, no. 4, pp. 543-552, 2010.

## CONFERENCE PAPERS:

- [1] Somrita Ghosh, Prasit Kumar Bandhyopadhyay, Arindam Biswas, A. K. Bhattacharjee and **Aritra Acharyya**, "Avalanche Noise in MQW DDR IMPATTs," Accepted in IEEE International Conference on Devices for Integrated Circuits (DevIC 2017), Kalyani Government Engineering College, Kalyani, West Bengal India, 23<sup>rd</sup> and 24<sup>th</sup> March, 2017.
- [2] Prasit Kumar Bandhyopadhyay, Arindam Biswas, A. K. Bhattacharjee and **Aritra Acharyya**, "Enhancement of Avalanche Noise in IMPATT Diodes due to E-E and H-H Collisions," Accepted in IEEE International Conference on Devices for Integrated Circuits (DevIC 2017), Kalyani Government Engineering College, Kalyani, West Bengal India, 23<sup>rd</sup> and 24<sup>th</sup> March, 2017.
- [3] Partha Banerjee, Qing Hao, Arindam Biswas, A. K. Bhattacharjee and **Aritra Acharyya**, "Avalanche Noise in Magnetic Field Tunable Avalanche Transit Time Device," in Proceedings of IEEE International Conference on Computer, Electrical and Communication Engineering (ICCECE), Kolkata, West Bengal, India, 16<sup>th</sup> and 17<sup>th</sup> December, 2016.
- [4] Apala Banerjee, Shreosi Roy, Sayanti Guha, Sayantan Kundu, Subhanjan Mitra and **Aritra Acharyya**, "Multiple Quantum Barrier Nano-Avalanche Photodiodes based on Si~3C-SiC Material System," in Proceedings of National Conference on Materials, Devices and Circuits on Communication Technology (MDCCT – 2016), IETE Burdwan Sub-Center, Department of Physics, University of Burdwan, 19<sup>th</sup> and 20<sup>th</sup> February, 2016.
- [5] Antara Banerjee Bhowmick, Apala Banerjee and **Aritra Acharyya**, "An Analytical Model based on Multistage Scattering Phenomena to Determine the Impact Ionization Rate of Electrons in Monolayer GNRs," in Proceedings of National Conference on Materials, Devices and Circuits on Communication Technology (MDCCT – 2016), IETE Burdwan Sub-Center, Department of Physics, University of Burdwan, 19<sup>th</sup> and 20<sup>th</sup> February, 2016.
- [6] Subhashri Chatterjee, Adrija Das, Alka Singh, Tripti Guin Biswas and **Aritra Acharyya**, "A Microscopic View on the Effect of Anisotropy on the Breakdown Phenomena of 4H-SiC Power Diodes," in Proceedings of 3<sup>rd</sup> International Conference on Foundations and Frontiers in Communication, Computer and Electrical Engineering (C2E2 – 2016) held on 15<sup>th</sup> – 16<sup>th</sup> January, 2016 at SKFGI, Mankundu, Hooghly, WB, India, pp. 1-4, CRC Press, Taylor & Francis Group. DOI: 10.1201/b20012-2.
- [7] Nirvik Patra, Debodyuti Banerjee, Subhashri Chatterjee, T. K. Sengupta, Subhendu Chakraborty and **Aritra Acharyya**, "Wireless Power Transmission – Part I: A Brief History," in Proceedings of 3<sup>rd</sup> International Conference on Foundations and Frontiers in Communication, Computer and Electrical Engineering (C2E2 – 2016) held on 15<sup>th</sup> – 16<sup>th</sup> January, 2016 at SKFGI, Mankundu, Hooghly, WB, India, pp. 5-8, CRC Press, Taylor & Francis Group. DOI: 10.1201/b20012-3.

- [8] Nirvik Patra, Debodyuti Banerjee, Subhashri Chatterjee, T. K. Sengupta, Subhendu Chakraborty and **Aritra Acharyya**, "Wireless Power Transmission – Part II: Theoretical Modeling of Transmitting and Receiving Electrically-Small Loop Antennas," in Proceedings of 3<sup>rd</sup> International Conference on Foundations and Frontiers in Communication, Computer and Electrical Engineering (C2E2 – 2016) held on 15<sup>th</sup> – 16<sup>th</sup> January, 2016 at SKFGI, Mankundu, Hooghly, WB, India, pp. 9-12, CRC Press, Taylor & Francis Group. DOI: 10.1201/b20012-4.
- [9] Nirvik Patra, Debodyuti Banerjee, Subhashri Chatterjee, T. K. Sengupta, Subhendu Chakraborty and **Aritra Acharyya**, "Wireless Power Transmission – Part III: Experimental Study," in Proceedings of 3<sup>rd</sup> International Conference on Foundations and Frontiers in Communication, Computer and Electrical Engineering (C2E2 – 2016) held on 15<sup>th</sup> – 16<sup>th</sup> January, 2016 at SKFGI, Mankundu, Hooghly, WB, India, pp. 13-16, CRC Press, Taylor & Francis Group. DOI: 10.1201/b20012-5.
- [10] Apala Banerjee, Subhashri Chatterjee, Adrija Das, Subhendu Chakraborty and **Aritra Acharyya**, "Evaluation of Ionization Rates of Charge Carriers in a Semiconductor via a Generalized Analytical Model Based on Multistage Scattering Phenomena – Part I: Wurtzite-GaN," in Proceedings of 3<sup>rd</sup> International Conference on Foundations and Frontiers in Communication, Computer and Electrical Engineering (C2E2 – 2016) held on 15<sup>th</sup> – 16<sup>th</sup> January, 2016 at SKFGI, Mankundu, Hooghly, WB, India, pp. 17-20, CRC Press, Taylor & Francis Group. DOI: 10.1201/b20012-6.
- [11] Apala Banerjee, Adrija Das, Subhashri Chatterjee, Subhendu Chakraborty and **Aritra Acharyya**, "Evaluation of Ionization Rates of Charge Carriers in a Semiconductor via a Generalized Analytical Model Based on Multistage Scattering Phenomena – Part II: Type-IIb Diamond and 6H-SiC," in Proceedings of 3<sup>rd</sup> International Conference on Foundations and Frontiers in Communication, Computer and Electrical Engineering (C2E2 – 2016) held on 15<sup>th</sup> – 16<sup>th</sup> January, 2016 at SKFGI, Mankundu, Hooghly, WB, India, pp. 21-24, CRC Press, Taylor & Francis Group. DOI: 10.1201/b20012-7.
- [12] Partha Banerjee, Prasit Kumar Bandyopadhyay, Subhendu Chakraborty **Aritra Acharyya**, "Influence of Band-to-Band Tunneling Induced Shift of ATT Phase Delay on Millimeter-Wave Properties of DDR IMPATTs – Part I: Theoretical Modeling," in Proceedings of 3<sup>rd</sup> International Conference on Foundations and Frontiers in Communication, Computer and Electrical Engineering (C2E2 – 2016) held on 15<sup>th</sup> – 16<sup>th</sup> January, 2016 at SKFGI, Mankundu, Hooghly, WB, India, pp. 29-33, CRC Press, Taylor & Francis Group. DOI: 10.1201/b20012-9.
- [13] Partha Banerjee, Prasit Kumar Bandyopadhyay, Subhendu Chakraborty **Aritra Acharyya**, "Influence of Band-to-Band Tunneling Induced Shift of ATT Phase Delay on Millimeter-Wave Properties of DDR IMPATTs – Part II: Simulation Results," in Proceedings of 3<sup>rd</sup> International Conference on Foundations and Frontiers in Communication, Computer and Electrical Engineering (C2E2 – 2016) held on 15<sup>th</sup> – 16<sup>th</sup> January, 2016 at SKFGI, Mankundu, Hooghly, WB, India, pp. 35-38, CRC Press, Taylor & Francis Group. DOI: 10.1201/b20012-10.
- [14] Partha Banerjee, Prasit Kumar Bandyopadhyay, Subhendu Chakraborty **Aritra Acharyya**, "Influence of Band-to-Band Tunneling Induced Shift of ATT Phase Delay on Millimeter-Wave Properties of DDR IMPATTs – Part III: Calculation of Shift of ATT Phase Delay due to Tunneling," in Proceedings of 3<sup>rd</sup> International Conference on Foundations and Frontiers in Communication,



- Computer and Electrical Engineering (C2E2 – 2016) held on 15<sup>th</sup> – 16<sup>th</sup> January, 2016 at SKFGI, Mankundu, Hooghly, WB, India, pp. 39-41, CRC Press, Taylor & Francis Group. DOI: 10.1201/b20012-11.
- [15] Subhendu Chakraborty, Shuvajit Roy, Subhashri Chatterjee, Adrija Das, Monisha Ghosh and **Aritra Acharyya**, “50 Hz Cascaded Twin-Tee Notch Filter for Removal of Power Line Interference from Human Electrocardiogram – Part I: Circuit Design,” in Proceedings of 3<sup>rd</sup> International Conference on Foundations and Frontiers in Communication, Computer and Electrical Engineering (C2E2 – 2016) held on 15<sup>th</sup> – 16<sup>th</sup> January, 2016 at SKFGI, Mankundu, Hooghly, WB, India, pp. 49-51, CRC Press, Taylor & Francis Group. DOI: 10.1201/b20012-13.
- [16] Subhendu Chakraborty, Shuvajit Roy, Subhashri Chatterjee, Adrija Das, Monisha Ghosh and **Aritra Acharyya**, “Research on the 50 Hz Cascaded Twin-Tee Notch Filter for Removal of Power Line Interference from Human Electrocardiogram – Part II: Simulation Study,” in Proceedings of 3<sup>rd</sup> International Conference on Foundations and Frontiers in Communication, Computer and Electrical Engineering (C2E2 – 2016) held on 15<sup>th</sup> – 16<sup>th</sup> January, 2016 at SKFGI, Mankundu, Hooghly, WB, India, pp. 53-56, CRC Press, Taylor & Francis Group. DOI: 10.1201/b20012-14.
- [17] Partha Banerjee, **Aritra Acharyya**, Arindam Biswas, and A. K. Bhattacharjee, “Magnetic Field Tunable Avalanche Transit Time (MAGTATT) Device,” in Proceedings of 3<sup>rd</sup> International Conference on Foundations and Frontiers in Communication, Computer and Electrical Engineering (C2E2 – 2016) held on 15<sup>th</sup> – 16<sup>th</sup> January, 2016 at SKFGI, Mankundu, Hooghly, WB, India, pp. 213-216, CRC Press, Taylor & Francis Group. DOI: 10.1201/b20012-45.
- [18] Prasit Kumar Bandyopadhyay, Subhendu Chakraborty, Arindam Biswas, **Aritra Acharyya**, and A.K. Bhattacharjee, “Effect of Carrier-Carrier Collisions on RF Performance of Millimeter-Wave IMPATT Sources,” in Proceedings of 3<sup>rd</sup> International Conference on Foundations and Frontiers in Communication, Computer and Electrical Engineering (C2E2 – 2016) held on 15<sup>th</sup> – 16<sup>th</sup> January, 2016 at SKFGI, Mankundu, Hooghly, WB, India, pp. 409-413, CRC Press, Taylor & Francis Group. DOI: 10.1201/b20012-80.
- [19] Bijoy Mandal, Shashank Singh, **Aritra Acharyya**, A. Ghosal, A. K. Bhattacharjee, D. P. Chakraborty, “A Unified FDTD Approach in Electromagnetics Metamaterials,” in Proceedings of 3<sup>rd</sup> International Conference on Foundations and Frontiers in Communication, Computer and Electrical Engineering (C2E2 – 2016) held on 15<sup>th</sup> – 16<sup>th</sup> January, 2016 at SKFGI, Mankundu, Hooghly, WB, India, pp. 83-86, CRC Press, Taylor & Francis Group. DOI: 10.1201/b20012-20.
- [20] Reetwik Bhadra, and **Aritra Acharyya**, “A Proposed DC Line Current Measurement Technique Based on Current Induced Magnetic Field Sensing Using  $n$ -Channel Enhancement-type MOSFET,” in Proceedings of Michel Faraday IET International Summit – 2015 (MFIIS 2015), Kolkata, India, 12<sup>th</sup> and 13<sup>th</sup> September, 2015.
- [21] Suranjana Banerjee, **Aritra Acharyya**, and Monijit Mitra, “Design Optimization and Large-Signal Simulation of DLHL Si IMPATT Diode at 60 GHz,” in Proceedings of IEEE International Conference on Computer, Communication, Control and Information Technology (C3IT), Academy of Technology, Adisaptagram, Hooghly 712121, West Bengal, India, February 7-8, 2015, pp. 1-4.

- [22] Suranjana Banerjee, **Aritra Acharyya**, J. P. Banerjee, and Monijit Mitra, "94 GHz Multiquantum Well IMPATT Diodes based on 3C-SiC/Si Material System," in Proceedings of IEEE International Conference on Computer, Communication, Control and Information Technology (C3IT), Academy of Technology, Adisaptagram, Hooghly 712121, West Bengal, India, February 7-8, 2015, pp. 1-5.
- [23] Anuva Ganguly, Jayabrata Goswami, **Aritra Acharyya** and J. P. Banerjee, "Optimization of High Performance GNR TFETs," in Proceedings of 2<sup>nd</sup> International Conference on Foundations and Frontiers in Communication, Computer and Electrical Engineering (C2E2 – 2015) held on 9<sup>th</sup> – 10<sup>th</sup> January, 2015 at SKFGI, Mankundu, Hooghly, WB, India, pp. 174-176.
- [24] **Aritra Acharyya**, Bhadrani Banerjee, Anvita Tripathi, Aman Kumar Verma, Manohar Verma, Rituparna Sarkar, Utsab Mukherjee, Upama Ghosh, Sonali Banerjee, "Single Quantum Well Graphene Nanoribbon  $p$ - $n$  Junction – Part I: Quantum Confinement," in Proceedings of 2<sup>nd</sup> International Conference on Foundations and Frontiers in Communication, Computer and Electrical Engineering (C2E2 – 2015) held on 9<sup>th</sup> – 10<sup>th</sup> January, 2015 at SKFGI, Mankundu, Hooghly, WB, India, pp. 54-57.
- [25] **Aritra Acharyya**, Rituparna Sarkar, Sonali Banerjee, Utsab Mukherjee, Upama Ghosh, Subhashri Chatterjee, Bhadrani Banerjee, Anvita Tripathi, Adrija Das, and Alka Singh, "Single Quantum Well Graphene Nanoribbon  $p$ - $n$  Junction – Part II: Quantum Tunneling," in Proceedings of 2<sup>nd</sup> International Conference on Foundations and Frontiers in Communication, Computer and Electrical Engineering (C2E2 – 2015) held on 9<sup>th</sup> – 10<sup>th</sup> January, 2015 at SKFGI, Mankundu, Hooghly, WB, India, pp. 58-60.
- [26] **Aritra Acharyya**, Bhadrani Banerjee, Anvita Tripathi, Adrija Das, Alka Singh, and Subhashri Chatterjee, "Quantum Mechanical Properties of a Nano-Scale  $p$ - $n$  Junction Based on Si/Si<sub>0.4</sub>Ge<sub>0.6</sub>/Si Quantum Well," in Proceedings of 2<sup>nd</sup> International Conference on Foundations and Frontiers in Communication, Computer and Electrical Engineering (C2E2 – 2015) held on 9<sup>th</sup> – 10<sup>th</sup> January, 2015 at SKFGI, Mankundu, Hooghly, WB, India, pp. 27-31.
- [27] Suranjana Banerjee, **Aritra Acharyya**, J. P. Banerjee, and Monojit Mitra, "Large-Signal and Noise Properties of Heterojunction DDR IMPATTs Based on Al<sub>x</sub>Ga<sub>1-x</sub>N~GaN Material System at 1.0 THz," in Proceedings of 2<sup>nd</sup> International Conference on Foundations and Frontiers in Communication, Computer and Electrical Engineering (C2E2 – 2015) held on 9<sup>th</sup> – 10<sup>th</sup> January, 2015 at SKFGI, Mankundu, Hooghly, WB, India, pp. 61-65.
- [28] Bratati Maity, **Aritra Acharyya**, and T. K. Sengupta, "Design and Realization of a Hardware Set-up of Smart Energy Meter for Energy Consumption Monitoring from Remote through 433 MHz Point to Point RF Link," in Proceedings of 2<sup>nd</sup> International Conference on Foundations and Frontiers in Communication, Computer and Electrical Engineering (C2E2 – 2015) held on 9<sup>th</sup> – 10<sup>th</sup> January, 2015 at SKFGI, Mankundu, Hooghly, WB, India, pp. 38-41.
- [29] Suranjana Banerjee, **Aritra Acharyya**, Bhadrani Banerjee, Anvita Tripathi, Adrija Das, Alka Singh, and J. P. Banerjee, "Si/3C-SiC Multiquantum Well IMPATT Diodes," in Proceedings of National Conference on Electrical, Electronics, and Computer Engineering (CALCON) 2014, IEEE, Park Prime, Kolkata, India, November 7-8, 2014, pp. 1-4.

- [30] **Aritra Acharyya**, Jayabrata Goswami, Suranjana Banerjee, and J. P. Banerjee, "Effects of Quantum Correction on the Large-Signal Characteristics of DDR IMPATTs Based on Silicon," in Proceedings of National Conference on Materials, Devices and Circuits in Communication Technology, Burdwan, 7<sup>th</sup> and 8<sup>th</sup> February, 2014, pp. 1-4.
- [31] Arnab Bijoy Mondal, **Aritra Acharyya** and J. P. Banerjee, "Large-Signal Characterization of Millimeter-Wave DDR IMPATTs Based on <111>, <100> and <110> Oriented GaAs," in Proceedings of National Conference on Materials, Devices and Circuits in Communication Technology, Burdwan, 7<sup>th</sup> and 8<sup>th</sup> February, 2014, pp. 5-8.
- [32] Bratati Maity, Subhashri Chatterjee, **Aritra Acharyya** and T. K. Sengupta, "Design and Development of a Hardware Set-up of Smart Energy Meter for Energy Consumption Monitoring from Remote through Point to Point Free Space Optical Communication Link," 4<sup>th</sup> National Conference on Frontiers in Instrumentation, Control, Computer and Communications (IC3-2014), Supreme Knowledge Foundation Group of Institutions, Mankundu Hooghly, West Bengal, India, pp. 1-4, 10-11<sup>th</sup> January, 2014.
- [33] **Aritra Acharyya**, Aliva Mallik, Debapriya Banerjee, Suman Gaguli, Arindam Das, Sudeepta Das Gupta and J. P. Banerjee, "Millimeter-Wave and Terahertz IMPATTs based on Group III-V Compound Semiconductors," 4<sup>th</sup> National Conference on Frontiers in Instrumentation, Control, Computer and Communications (IC3-2014), Supreme Knowledge Foundation Group of Institutions, Mankundu Hooghly, West Bengal, India, pp. 1-4, 10-11<sup>th</sup> January, 2014.
- [34] Suranjana Banerjee, **Aritra Acharyya**, Monojit Mitra and J. P. Banerjee, "Large-signal Properties of 3C-SiC/Si Heterojunction DDR IMPATT Devices at Terahertz Frequencies," The 34<sup>th</sup> PIERS in Stockholm, Sweden, pp. 462-467, August 12-15, 2013.
- [35] **Aritra Acharyya**, Koyel Datta, Raya Ghosh, Monalisa Sarkar, Roshmy Sanyal, Jit Charkraborty, Kausik Das, Subir Datta, Pritam De and J. P. Banerjee, "Large-signal characterization of 94 GHz diamond based DDR IMPATT device," 3<sup>rd</sup> National Conference on Engineering Education in the New Century (E2NC-2013), pp 1-4, 2013.
- [36] Moumita Ghosh, Mangolika Mondal, Jit Charkraborty and **Aritra Acharyya**, "Design and simulation of  $p^+p-n-n^+$  structured Wz-GaN RAPDs for UV sensing," 3<sup>rd</sup> National Conference on Engineering Education in the New Century (E2NC-2013), pp 5-7, 2013.
- [37] **Aritra Acharyya**, Suranjana Banerjee and J. P. Banerjee, "A Proposed Method to Study the Parasitic Resistance of Ka-Band Silicon IMPATT Diode From Large-Signal Electric Field Snap-Shots," IEEE Conference CODIS-2012, Jadavpur University, W. B., India, December 28-29, 2012, pp. 133-136.
- [38] **Aritra Acharyya**, J. P. Banerjee and Suranjana Banerjee, "Temperature Transient Effect on the Large-Signal Properties and Frequency Chirping in Pulsed Silicon DDR IMPATTs at 94 GHz," IEEE Conference CODEC 2012, Kolkata, India, December 17-19, pp. 5-7, 2012.
- [39] Suranjana Banerjee, **Aritra Acharyya** and J. P. Banerjee, "Millimeter-wave and Noise Properties of Si-Si<sub>1-x</sub>Ge<sub>x</sub> Heterojunction Double-Drift Region MITATT Devices at 94 GHz," IEEE Conference CODEC 2012, Kolkata, India, December 17-19, pp. 1-4, 2012.

- [40] **Aritra Acharyya** and J. P. Banerjee, "Dependence of Avalanche Response Time on Photon Flux Incident on DDR Silicon IMPATT Devices," The 32<sup>nd</sup> PIERS in Moscow, Russia, pp. 867-872, August 19-23, 2012.
- [41] **Aritra Acharyya** and J. P. Banerjee, "A Proposed Lateral DDR IMPATT Structure for better Millimeter-wave Optical Interaction," IEEE International Conference on Devices, Circuits and Systems 2012, Karunya University, Coimbatore, Tamil Nadu, India, pp. 599-602, March 15-16, 2012.
- [42] **Aritra Acharyya** and J. P. Banerjee, "A Comparative Study on the Effects of Tunneling on W-Band Si and Si<sub>1-x</sub>Ge<sub>x</sub> based Double-Drift IMPATT Devices," IEEE International Conference on Electronics Computer Technology, Kanyakumari, India, pp. 29-33, April 06-08, 2012.
- [43] Suranjana Banerjee, **Aritra Acharyya** and M. Mitra, "Dependence of noise properties on photon flux incident on Silicon MITATT device at millimeter-wave window frequencies," International Conference on Computer, Communication, Control and Information Technology 2012, Academy of Technology, W. B., India, Procedia Technology, Elsevier, vol. 4, pp. 431-436, February 25-26, 2012.
- [44] **Aritra Acharyya**, Suranjana Banerjee and J. P. Banerjee, "Effect of Junction Temperature on the Millimeter-wave Performance of DDR Silicon IMPATT Device," Proceedings of National Conference on MDCCT 2012, Burdwan, W. B., India, February 6-7, 2012.
- [45] **Aritra Acharyya**, Suranjana Banerjee and J. P. Banerjee, "High Frequency Performance limitations of Si, GaAs and InP IMPATTs based on Avalanche Response Time," Proceedings of National Conference on E2NC 2012, SKFGI, Mankundu, Hooghly, W. B., India, February 3-4, 2012.
- [46] **Aritra Acharyya**, Anshu Khandelwal and J. P. Banerjee, "Optimal Heat Sink Design for Terahertz IMPATT Source via Geometric Programming", Proceedings of National Conference on E2NC 2012, SKFGI, Mankundu, Hooghly, W. B., India, February 3-4, 2012.
- [47] **Aritra Acharyya**, Moumita Mukherjee and J. P. Banerjee, "Studies on the Millimeter-wave Performance of MITATTs from Avalanche Transit Time Phase Delay," IEEE Applied Electromagnetics Conference 2011, Kolkata, India, pp. 1-4, December 18-22, 2011.
- [48] **Aritra Acharyya** and J. P. Banerjee, "Design of Pulsed Mode 0.3 THz Si DDR IMPATT Diode with Optimized Bias Current," Proceedings of 3<sup>rd</sup> International Conference on Recent Advances in Mathematics, Technology and Management, Bengal Institute of Technology & Management, Santiniketan, Birbhum, W. B., India, 21-22 March 2011.
- [49] **Aritra Acharyya** and J. P. Banerjee, "Thermal Resistance Formulation for Ordinary Mesa Structure of DDR IMPATT Diodes," Proceedings of National Conference on E2NC 2011, SKFGI, Mankundu, Hooghly, W. B., India, pp. 113-116, January 20-21, 2011.
- [50] **Aritra Acharyya**, Moumita Mukherjee and J. P. Banerjee, "Effect of Carrier Diffusion on the Parasitic Positive Series Resistance of Millimeter Wave DDR Si-IMPATT Diodes [W-Band]," International Conference on Communication, Computers and Devices, Indian Institute of Technology, Kharagpur, W. B., India, December 10-12, Paper ID- 118, 2010.
- [51] **Aritra Acharyya**, Baisakhi Pal and J. P. Banerjee, "2-D Temperature Distribution Analysis inside a Semi-infinite Copper Heat Sink for Mesa and Ring Structure of Si-IMPATT Diodes using Finite

Difference Method," International Conference on Communication, Computers and Devices, Indian Institute of Technology, Kharagpur, W. B., India, December 10-12, Paper ID- 59, 2010.

- [52] Baisakhi Pal, **Aritra Acharyya**, Arijit Das and J. P. Banerjee, "Temperature Distribution in a Mesa Structure of Si-IMPATT Diode on a semi-infinite copper heat-sink," Proceedings of National Conference on MDCCT 2010, Burdwan, W. B., India, 27-28 March 2010, p. 58-59.
- [53] **Aritra Acharyya** and J. P. Banerjee, "Series Resistance Determination of Millimeter Wave Si-IMPATT Diode at W-Band," Proceedings of National Conference on E2NC 2010, SKFGI, Mankundu, Hooghly, W. B., India, 03-04 April 2010.
- [54] **Aritra Acharyya** and Parimal Acharyya, "Design of Automatic Speaker Verification (ASV) System Using Neural Network," Proceedings of National Conference on E2NC 2010, SKFGI, Mankundu, Hooghly, W. B., India, 03-04 April 2010.

### **BOOKS (Authored/Edited):**

- [1] **Aritra Acharyya**, "A Fresh View on Impact Ionization Process: Multistage Scattering Model," Lambert Academic Publishing, Germany, 2017, ISBN: 978-3-659-93259-5.
- [2] Parimal Acharyya and **Aritra Acharyya**, "Electromagnetic Field Theory and Transmission Lines," Aryan Publishing House, India, 2017.
- [3] **Aritra Acharyya** (*Editor in Chief*), "Frontiers and Foundations of Computer Communication and Electrical Engineering," Proceedings of 3<sup>rd</sup> International Conference on Foundations and Frontiers in Communication, Computer and Electrical Engineering (C2E2 – 2016) held on 15<sup>th</sup> – 16<sup>th</sup> January, 2016 at SKFGI, Mankundu, Hooghly, WB, India, CRC Press, Taylor & Francis Group, 2016, ISBN: 9781138028777.
- [4] **Aritra Acharyya**, "Thermal Analysis of Millimeter-Wave IMPATTs," Lambert Academic Publishing, Germany, 2015, ISBN: 978-3-659-69208-6.
- [5] **Aritra Acharyya**, "RF Performance of IMPATT Sources and Their Optical Control," Lambert Academic Publishing, Germany, 2015, ISBN: 978-3-659-68422-7.
- [6] Parimal Acharyya and **Aritra Acharyya**, "Electromagnetic Waves and Radiating Systems," Aryan Publishing House, India, 2011.