Dr. Anindya Jana

Professor Dept. of ECE Dean, IIC JB Institute of Engineering & Technology (Autonomous) Hyderabad Reach me: <u>deaniiic@jbiet.edu.in</u>; 9432824701, 7908058895



Anindya Jana received his B. Tech degree from Haldia Institute of Technology, WBUT and M. Tech. degree from Jadavpur University in 2007 and 2010 respectively. He has completed his PhD (Tech.) from Department of Electronics and Telecommunication Engineering, Jadavpur University in 2015. After completion of B.Tech he served Grunanak Institute of Technology for more than a year as a visiting faculty member. In 2010 he joined Jadavpur University as Senior Research Fellow. Apart from his research activities, he was associated with tutorial classes inb Dept. of ETE, Jadavpur University. He served as an Assistant Professor in the Department of Electronics & Telecommunication Engineering at University of Science and Technology Chittagong, Bangladesh for two years. Presently he is working as an Associate Professor, ECE & Dean at JB Institute of Engineering & Technology (Autonomous), Hyderabad, India since 2017. He has more than 30 technical research papers in archived journals and peer - reviewed conferences. He has three book chapters in Springer and Taylor & Francis. He is a regular reviewer of Elsevier, Springer and Journal of Applied Physics. He has completed one project in Bangladesh. He is a PI of currently ongoing DST project, worth 46 Lakhs. Currently his research initiatives are focused in the areas of Bioelectronics, Semiconductor devices, simulations of nanodevice models, transport phenomenon, single electron & spintronics devices and their applications in VLSI circuits, low power VLSI design and Robotics.

1. Academic Qualifications:

- a. Ph. D (Tech.) from Jadavpur University in 2015 (SRF).
- b. M. Tech. in VLSI Design and Microelectronics Technology from Jadavpur University in 2010.
- c. B. Tech. in Electronics and Communication Engineering from Haldia Institute of Technology in 2007
- d. Higher Secondary in Science from Mohanananda Vidyamandir, Midnapore in 2003.
- e. Secondary from Sri Ramakrishna Mission Vidyabhawan in 2001.
- 2. Ph. D Thesis: Modeling of Nanoscale Devices and Exploring their Applications.
- 3. M. Tech. Thesis: Extraction of RF-Parameters in a Bulk Fin-MOSFET.
- 4. B. Tech. Project: Two Channel TDM-PCM using Telephone sets.

5. Experiences:

Teaching Experience

- Presently working as an Associate Professor in the Department of Electronics & Communication Engineering at JB Institute of Engineering & Technology (Autonomous, NAAC & NBA accredited), Hyderabad, India from August 2017- till date.
- Served as an Associate Professor in the Department of Electronics & Communication Engineering at Sree Vidyanikethan Engineering College (Autonomous, NAAC & NBA accredited), Tirupati, India from June 2016- July 2017.
- Served as an Assistant Professor in the Department of Electronics & Telecommunication Engineering at University of Science and Technology Chittagong, Bangladesh from 1st September, 2014 to 27th May, 2016.
- Served for more than four years at Jadavpur University as Senior Research Fellow from 2010 to 2014
- Served as a Visiting faculty in the Department of Electronics & Communication Engineering at Grunanak Institute of Technology, Kolkata, India from 27th March 2009 to 9th August 2010.

Research Experience

- 05 years of research experience as Senior Research Fellow at Jadavpur University from 06th October 2010.
- 08 years of research experience as individual faculty and supervisor of M. Tech and B. Tech projects.
- Supervised more than 30 students of M. Tech and B.Tech.

Administrative Experience

- Serving as Dean, Institution Innovation Council, JBIET
- Served as Advisor, NAAC, JBIET, Hyderabad.
- Served as NBA Coordinator, ECE, JBIET.
- Served as R&D Coordinator, R& D Cell, JBIET.
- Served as IEEE SB Councillor of JBIET.
- Served as HOD, Electronics & Communication Engineering at JBIET
- Served as BOS Chairman of ECE, JBIET for B. Tech & M. Tech (VLSI).
- Served as coordinator for R20 regulation.
- Served as coordinator of Electronics & Telecommunication Engineering (B. Sc) at USTC, Chittagong, Bangladesh.

6. Research Publications:

- More than 30 in International Journals including SCI Journals and Conference Proceedings including IEEE Conferences
- Two book chapters in Taylor & Francis and one in Springer.

7. Patents:

Patent on Automated IOT Based Smart Toilet for Kidney Diagnosis with Application Number (202041026097), published on 10.07.2020. Indian Patent.

Patent on A Robotics Based Muscular SPASM Relief Device with Patent Number (2020102322), granted on 14.10.2020. IP Australia.

8. Areas of Teaching Assignments:

Solid State Devices, Analog CMOS IC Design, VLSI Design, TSSN, Renewable Energy, Pulse & Digital Circuits, Digital IC Applications, Numerical Analysis.

9. Conferences Attended (as author):

- 16th International Conference on Sensing Technology (ICST2023), BITS Pilani, Hyderabad, India, 17-20 December 2023.
- 2nd International Conference on Data, Electronics and Computing (ICDEC-2023), Mizoram University, 15th 16th December, 2023.
- International Conference on Computational Science and Engineering (ICCSE 2016), RCC Institute of Information Technology, Kolkata.
- 2016 International Conference on Intelligent Control Power and Instrumentation (ICICPI), RCC Institute of Information Technology, Kolkata.
- 17th Int'l Conf. on Computer and Information Technology, 22-23 December 2014, Daffodil International University, Dhaka, Bangladesh.

- International Conference on Microelectronics, Communication and Renewable Energy (AICERA-2013 ICMiCR), Amol Jyothi College of Engineering, Kanjirappally, Kerala 4-6 June, 2013.
- International Conference on Sustainable Energy and Intelligent Systems (SEISCON 2011), Dr. M.G.R University, Chennai, 20-22, July 2011.

10. Online Certification Programs Attended:

- Attended 'Road Map to Get a Patent' webinar by JBIET on 21st May, 2020.
- Attended 'Introduction to Machine Learning' webinar on 31st May, 2020.
- Attended 'BIG Data AI' webinar by University of Wisconsin Platteville on 12th June, 2020.
- Attended 'BIG Data AI' webinar by University of Wisconsin Platteville on 19th June, 2020.
- Attended One week STC on 'Data Analytics with Python' by NITTR Chandigarh during 22nd -26th June, 2020.
- Attended National Quiz on 'VLSI Design' and secured full marks on 23rd June, 2020.
- Attended 'Advance Fiber Technology for various sensing Applications' webinar by RMK College of Engineering & Technology, Chennai on 29th July, 2020.

11. Online Certification Programs Conducted:

- Conducted as Convener for One week FDP on 'Recent Trends in Electronics & Communication Engineering'. Organized by JBIET during 26th April- 2nd May, 2020.
- Conducted as Coordinator for faculty Group Discussion on 'Online Learning Vs Classroom Learning'. Organized by JBIET on 30th May, 2020.
- Conducted as Coordinator for IEEE National webinar for students on 'Research Insight of Deep Learning & Career Scope for ECE & EEE' on 19th June, 2020.
- Conducted as Coordinator for faculty Group Discussion on 'How to make online learning more effective?." Organized by JBIET on 9th July, 2020.
- Conducted as Coordinator for 3 days National workshop on 'Eradicating Pandemic Effects with the help of 5Q'. Technical co sponsored by IEEE, SB, JBIET during 23rd -25th July, 2020.

12. Organizing Capability:

- Organized as coordinator, Alumni Meet 2022 at JBIET, Hyderabad in 2023.
- Organized as coordinator, Alumni Meet 2021 at JBIET, Hyderabad in 2021.
- Served as **Program Chair** for Springer International Conference on Devices, Intelligent Systems & Communications (DISC 2020) during 9th -10th January, 2020.
- Served as **Convener** for One week online FDP on 'Recent trends in Electronics & Communication Engineering' during 26th April- 2nd May, 2020 during COVID-19 lockdown.
- Served as **coordinator** for online Faculty Group Discussion on 'Online learning Vs Classroom learning', organized by JBIET, Hyderabad, on 30th May, 2020.
- Served as **coordinator** for IEEE online webinar on 'Research insight of Deep Learning & Career scope for ECE & EEE' on 19th June, 2020.
- Served as **coordinator** for online Faculty Group Discussion on 'How to make online learning more effective?, organized by JBIET, Hyderabad, on 9th July, 2020.
- Served as **Convener** for Three Days IEEE Online Workshop on 'Eradicating Pandemic Effects with the help pf 5Q' during 23rd July- 25th July, 2020.
- Organized as coordinator Alumni Meet 2019 at JBIET, Hyderabad in 2019.
- Organized as coordinator One Week IETE sponsored Faculty Development Program on 'Pedagogical

Research, Technical Writing and Publications' at JBIET, Hyderabad in August 2019.

- Organized Faculty Development Program on 'Microteaching' at JBIET, Hyderabad in 2018.
- Organized National level Technology fest in University of Science and Technology Chittagong in 2015 & 2016 as coordinator and convener respectively.
- Organized IEEE sponsored International Conference on Communications, Devices and Intelligent Systems (CODIS 2012) during 28-29 December 2012 at Jadavpur University as an active member.
- Organized an UGC-ASC Refresher Course on "Nanodevices and low power VLSI design", held between 11 December, 2013 and 2 January, 2014, in the department of ETCE, Jadavpur University.

13. Experience as Reviewer:

Reviewer for Elsevier, Journal of Applied Physics, Springer.

14. Projects Completed/ Ongoing:

- Serving as PI for DST Sponsored project, worth 46 Lakhs (Ongoing).
- Completed a consultancy project 'Smart Movement Security System for VIPs use (SMSS)', of INR 4,67,000/- in 2021. Funding Agency: Interactive Electronics Research and Development Laboratories (Pvt.) (Completed).
- Supervised a Project "Automatic Eye ball sensing Wheelchair for complete disabled Persons," funded by ICT Ministry, Bangladesh (Completed).

15. Books/ Book Chapters published:

- One chapter on hybrid SET/CMOS technology in 'Computational Science and Engineering' by Taylor & Francis in 2017.
- One chapter on hybrid SET/CMOS technology in 'Computational Advancement in Communication Circuits and Systems' by Springer in 2015.
- One Chapter on hybrid SET/CMOS technology in 'Computational Intelligence in Data Mining' Springer in 2015.

16. Honours & Awards:

- Received Scholarship from Pukyong National University, Busan, South Korea to pursue Post Doctorate in Smart Robotics Convergence Laboratory.
- Awarded for Successful completion of Junior Diploma and Senior Diploma Course in Painting, from Bangiya Sangeet Parishad, affiliated to Rabindra Bharati University.
- Awarded for successful completion of Junior Diploma in Recitation from Bangiya Sangeet Parishad, affiliated to Rabindra Bharati University.
- Won several prizes at school for standing amongst the top three in the class.

17. Publications

International Journals:

- A. Jana et. al., "Studies on thermal, morphological, electrical conductivity and LPG sensing behavior polyaniline/In2O3 nano composites thin films," Ferroelectrics, Taylor & Francis, 613(1), pp. 129– 136, 2023.
- 2. A. Jana et. al., "Synthesis, electrical, magnetic and LPG sensing behavior of conducting polymer/ZnO nanocomposites," Ferroelectrics, Taylor & Francis, 599(1), pp. 128–134, 2022.

- 3. Delwar, T.S., Siddique, A., Jana, A. et al. "Signal power optimization technique in optical wireless link: a comparative study with GA and PSO," Opt Quant Electronics, Springer, Vol 53, 483 (2021).
- Tahesin Samira Delwar, Anindya Jana, Abrar Siddique, Manas Ranjan Biswal, Jee Youl Ryu, "Novel multi-user MC-CSK modulation technique in Visible Light Communication," Opt Quant Electron, Springer 53, 196 (2021).
- Biswabandhu Jana, Anindya Jana, J. K. Sing and Subir Kumar Sarkar, "Performance of Multigate Single electron transistor in wide temperature range and 22nm hybrid technology," Journal of Nanoelectronics and Optoelectronics, ASP, Volume 9, Number 3, Pp. 357-362(6), June 2014.
- Anindya Jana, N. Basanta Singh, J.K. Sing, Subir Kumar Sarkar, "Design and simulation of hybrid CMOS–SET circuits", Microelectronics Reliability, Elsevier, Volume 53, Issue 4, Pages 592-599, ISSN 0026-2714, April 2013.
- Anindya Jana, Rajat Suvra Halder, J. K. Sing, Subir Kumar Sarkar, "Design and Implementation of a Hybrid SET-CMOS Based Sequential Circuits," Journal of Nano- and Electronic Physics, Vol. -4, Issue-2, Pages/record No.: 02004-1-02004-5, 2012.
- Anindya Jana, Rajat Suvra Halder, J. K. Sing, Subir Kumar Sarkar, "Design and Implementation of a Hybrid SET-CMOS Based Sequential Circuit," International Journal of Computer Science & Informatics (IJCSI), ISSN (PRINT): 2231–5292, Vol. - II, Issue-1, 2, 2012.
- Debasis Samanta, Anindya Jana, A. K. De, and Subir Kumar Sarkar, "SET_MOS Hybrid Logic Circuit", International Journal of Recent Trends in Engineering & Technology [IJRTE & T], Vol.-4, pp. 42-45, 2010.
- Suman Basu, Anindya Jana, Dr. Samir Kumar Sarkar, Dr. Subir Kumar Sarkar, "Influence of High K Dielectric as Gate Material in the Response Characteristics of Nanoscale DG MOSFET," International Journal on Electronics & Communication Technology (IJECT), ISSN: 2230-7109, Vol.-3, Issue-1, January – March, 2012.
- 11. Subhramita Basak, Anindya Jana and Subir Kumar Sarkar, "Design and Analysis of a High Speed, Power Efficient 8 Bit ALU Based on SOI / SON MOSFET Technology," Journal of Nano and Electronic Physics, Vol. 5 No 4, 04062(5pp) ,2013.
- Biswabandhu Jana, Anindya Jana, Jamuna Kanta Sing and Subir Kumar Sarkar," Realization of Static Write Margin of Hybrid SET-CMOS based 6-T SRAM cell," International Journal of Electrical, Electronics and Computer Engineering 2(2): 77-79(2013), ISSN: 2277-2626.
- A. Manjula, Anindya Jana, "Implementation of Adaptive BUS encoding for transition reduction on OFF-CHIP buses," IJRECE, Vol. 6, Issue 4, Pp 1337-1440, ISSN: 2348-2281 (UGC Approved), 2018.
- 14. Anindya Jana, N. B. Singh, A. K. De, J. K. Sing, Subir Kumar Sarkar, "Design and simulation of Hybrid SET-CMOS based combinational circuits," accepted in IJE, Taylor & Francis.
- 15. Anindya Jana, Rajat Suvra Halder, J. K. Sing, Subir Kumar Sarkar, "Noise Margin Modeling for estimation of robustness of Hybrid SET-MOS logic", communicated to IEEE Transactions on Nanotechnology.
- 16. Biswabandhu Jana, Anindya Jana, and Subir Kumar Sarkar, "A comparative performance study of hybrid SET-CMOS based logic circuits for the estimation of robustness," "Journal of Nano and Electronic Physics, Vol. 5 No 4, 03057(6pp) ,2013.
- 17. Biswabandhu Jana, Anindya Jana, and Subir Kumar Sarkar, "Room temperature operable hybrid Single Electron Transistor based shift register circuit in 22 nm technologies," accepted in World Scientific Journal.
- 18. Anindya Jana, T. S. Delwar, P.K. Pradhan, "Low Power Application of 22 nm technology based hybrid SET-CMOS circuits in room temperature," Communicated to Journal of Nano and Electronic Physics.

International Conferences

19. Kiran Pakmode, Towheed Sultana, Sayan Chatterjee, Prasanta Kumar Pradhan and Anindya Jana, "Biosensors : Pioneering Progress in Sensing Technologies across Generations" in 16th International Conference on Sensing Technology (ICST2023), BITS Pilani, Hyderabad, India, 17-20 December 2023.

- 20. Kiran Pakmode, Sayan Chatterjee, Prasanta Kumar Pradhan and Anindya Jana, "Nanomaterials for Biosensing Applications," in 2nd International Conference on Data, Electronics and Computing (ICDEC-2023), Mizoram University, 15th - 16th December, 2023.
- 21. Abrar Siddique, Tahesin Samira Delwar, Anindya Jana and JeeYoul Ruy, "A 24 GHz Wide-Tuning-Range CMOS Digitally Controlled Oscillator for Automotive Radar," Springer International Conference RICE 2020, Vietnam.
- 22. Tahesin Samira Delwar, Anindya Jana, Abrar Siddique and JeeYoul Ruy, "Genetic algorithm aided received signal strength maximization in non-line-of-sight visible light communication," Springer International Conference RICE 2020, Vietnam.
- Anindya Jana *et. al.*, "Performance of Agro-Sensors: Assessment of optimality in routing protocols of MANET in wireless sensor networks," IEEE International Conference on Intelligent Control, Power and Instrumentation (ICICPI 2016), India, 2016.
- Anindya Jana *et. al.* "Design and simulation of 22nm technology based hybrid SET-CMOS digital logic circuits for low power applications," International Conference on Computational Science and Engineering (ICCSE 2016), Kolkata, India, 2016.
- 25. Anindya Jana, Biswabandhu Jana, Subhramita Basak, J.K.Sing and Subir Kumar Sarkar, "Design And Performance analysis of reversible logic based ALU using hybrid Single Electron Transistor," RAECS- 2014, March- 2014, Chandigarh.
- 26. Sudipta Mukherjee, Anindya Jana and Subir Kumar Sarkar, "Hybrid Single Electron Transistor based Low Power Consuming Odd Parity Generator & Parity Checker circuit in 22 nanometer technology," ICCIDM 2014, Veer Surendra Sai University of Technology, Burla, Odisha.
- 27. Sudipta Mukherjee, Anindya Jana and Subir Kumar Sarkar, "Hybrid Single Electron Transistor based Low Power Consuming BCD Adder Circuit in 65 Nanometer Technology," ICCACCS 2014.
- 28. Sudipta Mukherjee, Anindya Jana and Subir Kumar Sarkar, "Hybrid Single Electron Transistor Based Octal To Binary Encoder In 22 Nanometer Technology," International Conference On Control Instrumentation Communication And Computational Technologies 2014 (ICCICCT-2014), Noorul Islam University, Kanyakumari, 10-11 July, 2014.
- 29. Anindya Jana *et. al.*, "Hybrid Single Electron Transistor based Low Power Consuming 4-bit Parallel Adder/Subtractor circuit in 65 nanometer technology," International Conference on Computer and Information Technology (ICCIT), Daffodil University, Dhaka, 2014.
- 30. Anindya Jana, J. K. Sing, Subir Kumar Sarkar, "Realization of gate performance using Hybrid SET -CMOS Pass transistor based logic gate," International Conference on Microelectronics, Communication and Renewable Energy (AICERA-2013 ICMiCR), [IEEE sponsored] Amol Jyothi College of Engineering, Kanjirapally Kerala 4-6 June, 2013.
- 31. Saheli Sarkhel, Bibhas Manna, Anindya Jana, Kousik Naskar and Subir Kumar Sarkar,"Analytical Potential Distribution Model of Symmetric Double Gate Underlap MOSFET with Binary Metal Alloy as Gate Electrode for Subdued SCEs, "International Conference on Microelectronics, Communication and Renewable Energy (AICERA-2013 ICMiCR), [IEEE sponsored] Amol Jyothi College of Engineering, Kanjirapally Kerala 4-6 June, 2013.
- 32. Anindya Jana, Rajat Suvra Halder, J. K. Sing, Subir Kumar Sarkar, "Design and Implementation of a Hybrid SET-CMOS Based Sequential Circuit". Proc. Of International Conference on Research Trends in Computer Science and Technology, 27-28 January, 2012, CMR College of Engineering and Technology, Hyderabad.
- 33. Kousik Naskar, Anindya Jana, Jamuna Kanta Sing and Subir Kumar Sarkar, "Study of power dissipation and delay of two dimensional SOI-SON based MOSFET inverter", International Conference on Microelectronics, Communication and Renewable Energy (AICERA-2013 ICMiCR), [IEEE sponsored] Amol Jyothi College of Engineering, Kanjirapally Kerala 4-6 June, 2013.
- 34. Anindya Jana, R S Halder, S S Singh, J K Sing and Subir Kumar Sarkar. Article: Design and Simulation of Hybrid SET-CMOS based Hysteresis Circuits: Schmitt Trigger, with their Realization. IJCA Proceedings on International Conference on Communication, Circuits and Systems 2012, iC3S(4):10-12, June 2013. Published by Foundation of Computer Science, New York, USA.
- 35. Sanjoy Deb, Anindya Jana, Saptarsi Ghosh, Rajanna K.M, Subir Kumar Sarkar, "Modeling and Performance Simulation of SOI MOSFET Based Novel Electric Field Sensor", Proc. Of ICAET – 2011, EGS Pillay Engineering College, Nagapattinam, May 27 & 28, 2011.

- 36. K. Senthil Kumar, Anindya Jana, J. Gope, Subir Kumar Sarkar, "Nanocrystaline ZnO-Si Heterojunction Methane Sensor", Proc. of 2nd International Conference on Sustainable Energy and Intelligent System, 20-22 July 2011, Dr. M G R University, Chennai, Tamil Nadu (Indexed in IEEE explorer).
- 37. B. Kantha, Anindya Jana, P. Kar, P.C Pradhan, S. K Sarkar, "Design & Implementation of MEMS Micro- heater Suitable for Gas Sensor Application", Proc. of International Symposium on Devices MEMS, Intelligent Systems & Communication (ISDMISC-2011), 12-14 April, Sikim Manipal Institute of technology, Sikkim.
- 38. Anindya Jana, N Basanta Singh, Sarkar Anup, J.K Sing, Subir Kumar Sarkar, "Design and implementation of a hybrid SET-CMOS based hi-speed and power efficient pulse divider circuit", Proc. Of International Conference on Sustainable Energy and Intelligent Systems (SEISCON 2011), Dr. M.G.R University, Chennai, pp.605-609, 20-22, July 2011. doi: 10.1049/cp.2011.0433 (Indexed in IEEE explorer).
- 39. Ankush Ghosh, Anindya Jana, Kuntal Chakraborty, Anup Sarkar, Rajanna K. M and Subir Kumar Sarkar, "Implementation of Finite State Machine for RFID system using Single Spin Logic", Proc. of International Conference on emerging Trends in Engineering and Technology, 14-16 Oct, 2010, Gita Institute of management and technology, Haryana.