FACULTY PROFILE

Name: Dr. Rupali Singh

Designation: Associate Professor

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Professional Qualification:

Degree	University/ Board	Year of Passing	Specialization
PhD	SRM Institute of Science & Technology, Kattankulathur, Chennai	2021	Electronics & Communication Engineering
M.Tech	Shobhit University, Meerut, 2009	2009	VLSI Design
B.E	Nagpur University, 2001	2001	Electronics & Telecommunication Engineering

Publications (Journals & Conferences):

Journals:
- "**Area Efficient Architecture For Wave Digital Elliptic Filter Using-Level Transformations**", Suranaree Journal of Science and Technology, DOI: 10.55766/sujst-2024-04-e01955.

- "**Design of QCA Based Memory Cell Using a Novel Majority Voter with Physical Validation**", Nano Communication Networks, 41, 100513, 2024 (SCI, Google Scholar)

- "**Mitigation of atmospheric losses using dual-polarized 16-QAM MIMO technique in free-space optical system in various weather conditions**", International Journal of

Communication Systems, 1-22, 2024. DOI: https://doi.org/10.1002/dac.5816 (SCI, Google Scholar)

- "**Investigation of PSK/QAM Modulated Hybrid Fiber Optic and Free Space Optic System Under Various Atmospheric Losses**", ASEAN Engineering Journal, 13/1, 51-57,2023.(Scopus, Google Scholar)

- "**A sliced architecture using novel configurable logic modules in quantum dot cellular automata for application of field-programmable gate arrays**", The Journal of Supercomputing, 79, 4105-4125, September 2022. (Scopus, SCIE, Google Scholar)

- "**Cost-effective Programmable Logic Arrays Using Multilayer Structures of Decoders in QCA Framework**", Indian Journal of Pure & Applied Physics Vol. 60, October 2022, pp. 855-865, (Scopus, SCIE, Google Scholar)

- "**Design and Implementation of Advanced Machine Learning Management and Its Impact on Better Healthcare Services: A Multiple Regression Analysis Approach (MRAA)",** Computational and mathematical methods in medicine, Vol.2022, PP.1-7, April 2022 (Scopus, Google Scholar)

- "**Analysis of Structural, Optical, and Aquaphobic Properties of Zirconium Oxide Nanofilms by Varying Sputtering Gas",** Advances in Materials Science and Engineering, Vol.2022, PP.1-7, January 2022. (Scopus, Google Scholar)

- "**Fault Tolerant Reversible T Latch with Enhanced Testability at Nano-Scale for Application of Ripple Counters", Russian Microelectronics,** Vol. 50, No.6, PP. 439-451, 2021.(Scopus, Google Scholar)

- "**Design of Efficient Multilayer RAM Cell in QCA Framework", Circuit World,** Vol. 47, No.1, PP. 31-41, 2020. https://doi.org/10.1108/CW-10-2019-0138. (Scopus, SCIE, Google Scholar)

- "**QCA-Based RAM Design Using a Resilient Reversible Gate with Improved Performance",** Journal of Circuits, Systems, and Computers, Vol.29, No.13, PP: 1-26, 2020.(Scopus, SCIE, Google Scholar).

- "**Fault Tolerant Reversible Gate Based Sequential Quantum Dot Cellular Automata Circuits: Design and Contemplation", J**ournal of Nanoelectronics and Optoelectronics, Vol.15, No.3, PP. 331-344, March 2020 (Scopus, SCIE, Google Scholar).

- "**Analysis and Implementation of Reversible Dual Edge Triggered Flip flop Using Quantum Dot Cellular Automata**", International Journal of Innovative Computing, Information and Control, Vol.14, No.1, PP. 147-159, February 2018 (**ESCI, Scopus, Google Scholar**).

- "**Wireless/Wired Automatic Switched Plasma Tweeter & Speaker System",** IOSR Journal of Electronics and Communication Engineering (IOSR-JECE), Mar.-Apr. 2017, Volume 12, Issue 2, PP 28-33 (Google Scholar).

- "**Optimization, FPGA Implementation & CMOS Realization of Reversible Shift Registers",** IOSR Journal of Electronics and Communication Engineering (IOSR-JECE), Jul.-Aug .2016, Volume 11, Issue 4 PP. 13-22 (Google Scholar).

- "**Reversible Sequential Circuits – A Review",** Elixir International Journal, ISSN 2229-712, January 2014 pp. 20644-20646 (Google Scholar).

- **"Design of High Performance Arithmetic and Logic Circuits using Multiple Valued Radix-4 digits"**, International Journal of Engineering Research and Industrial Application (IJERIA) Dec 2009.-G

Conferences:

- **"Area Efficient Multilayer Designs of XOR Gate Using Quantum Dot Cellular Automata"** in proceeding of International Conference on Micro-Electronics and Telecommunication Engineering" SRM IST, NCR Campus, Ghaziabad, 28-29 September 2019. (Scopus Index).
- **"Quantum Dot cellular Automata Ka Upyog Karke Reversible D Flip flop Ka Design"** in National Conference of Applications of Technical Terminology in Modeling Optimization and Computing in Science and Technology" SRMIST, NCR Campus, Ghaziabad, 26-28 April, 2019.
- **"Ultra Low Power Reversible Dual Edge Triggered Flip Flop-Design and Implementation"** in proceeding of IEEE 2nd International Conference on Micro-Electronics and Telecommunication Engineering" SRM IST, NCR Campus, Ghaziabad, 20th – 21st September 2018. (Scopus Index)
- **"Reliability measures for switched-Mode Power Supplies (SMPS) With Redundant Fly Back Transformer"** in proceeding of IEEE International Conference on Micro-Electronics and Telecommunication Engineering" SRM university NCR Campus, Ghaziabad, 22ND – 23RD September 2016. (Scopus Index)
- **"Design and Optimization of Sequential Counters Using A Novel Reversible Gate"**, IEEE International Conference on Computing, Communication and Automation, Galgotia University, Greater Noida, India, 29-30 April 2016 (**Scopus**).
- **"Importance of RFID Security for Business Environment"**, in Proceedings of a National Conference sponsored by IETE on "Recent Advancement in Communication System & Image Processing RACSIP-2012" , B.K.Birla Institute of Engineering and Technology, Pilani.
- **"Study On Surround Gates On Vertical Single Walled Carbon Nano Tube Devices",** Proceeding Of National Conference on Recent Trends in Information and Communication Technology, SRM university NCR Campus, Ghaziabad, 27th & 28th September 2012**.**

Book/Book Chapters:

- **"Reversible Logic Based Single Layer Flip Flops and Shift Registers in QCA Framework for the Application of Nano-communication"** in Paradigms of Smart and Intelligent Communication, 5G and Beyond , Transactions on Computer Systems and Networks, 197–219.
- "**Microprocessor and Its Applications**", Scientific International Publishing House, 2022.
- "**Area Efficient Multilayer Designs of XOR Gate Using Quantum Dot Cellular Automata" in** Micro-Electronics and Telecommunication Engineering. Lecture Notes in Networks and Systems, Vol. 106, pp: 693-705, Springer, Singapore.

- **"Reversible Logic Design Using Quantum Dot Cellular Automata: Challenges and Future Aspects", in** Advances in Antenna, Signal Processing, and Microelectronics Engineering, 2021.

Patents:

- **Indian Patent**
  Title: An Innovative Machine Learning-Based Smart Detection And Illnesses Forecasting Algorithm In Green Cloud Computing
  Application No. 202341027898 A
  Publication Date: 5/5/2023
  The Patent Office Journal No. 18/2023
- **Australian Patent**
  Title: A smart traffic monitoring IP camera system for realistic modeling of IoT networks
  Patent number: 2021105712
  Grant Date: 3/11/2021
- **Indian Patent**
  Title: A System Having Synchronous Signaling For Interfacing VLSI Circuits
  Application No. 202111036217 A
  Publication Date: 3/9/2021
  The Patent Office Journal No. 36/2021
- **Title:** A Virtualization System For Internet Of Things (IoT) Devices And Their Connected Storage Medium And Method Thereof
  Application No.: 202141045802 A
  Publication Date: 22/10/2021
  The Patent Office Journal No. 43/2021
- **Indian Patent**
  Title: A Cloud Computing System for Optimizing Virtual Machine Placement And Configuration And Method Thereof
  Application No. 202241001416 A
  Publication Date: 28/01/2022
  The Patent Office Journal No. 04/2022

Awards and Achievements

- "Certificate of Award for Outstanding Contribution in the Field of Education" from Shikshak kalyan Foundation in 2022.
- NPTEL Elite certificate for successful completion of online course in Digital Circuits with score of top 2%.
- NPTEL Elite (Silver) certificate for successful completion of online course in Microprocessor and Microcontrollers with score of top 5%.

Workshops/Seminars/FDPs

- ➢ Organized AICTE VAANI sponsored "Two Days Workshop on Fabrication of Semiconductor Devices and Circuits" on 20th -21st September 2024.
- ➢ Organized EICT Academy, IIT Roorkee, Sponsored "Faculty development Program on "Artificial Intelligence and Its Applications in VLSI" from 9th to 13th January 2024.
- ➢ Organized "Workshop on Industrial Automation", in association with Sofcon Pvt. Ltd., at SRMIST, Delhi NCR Campus, Ghaziabad on 17th April 2023.
- ➢ Organized "Workshop on Drones Technology", in association with Green-O-Earth, Healthcare Solution Company, Noida, at SRMIST, Delhi NCR Campus, Ghaziabad on 2nd March 2023.
- ➢ Organized "Two Days Workshop on Ardubotics Robotics", in association with Innovians Technology Pvt. Ltd., at SRMIST, Delhi NCR Campus, Ghaziabad on 9th – 10th February 2023.
- ➢ Attended Faculty Development Program on "Embedded Systems" sponsored by Ministry of Electronics and Information Technology, GOI, conducted by E&ICT, NIT, Wrangle from 16/08/2022 to 25/08/2022.
- ➢ Attended Professional Development Program on "Verilog Programming" conducted by NITTTR, Chennai, from 13/06/2022 to 17/06/2022.
- ➢ Attended Five Days ATAL Faculty Development Program on "Emergence of Reversible and Quantum Logic Circuits" at ABES Institute of Technology, Ghaziabad from 22-11-2021 to 26-11-2021.
- ➢ Attended Five Days ATAL Faculty Development Program on "Artificial Intelligence and Machine Learning" at SRMIST, NCR Campus, Ghaziabad from 19-10-2020 to 23-10-2020.
- ➢ Attended Three Days Faculty Development Program on "Natural Language Processing using Machine Learning", SRM IST NCR Campus, Ghaziabad, 27TH – 29th June 2019.
- ➢ Organized International level conference "2018 **IEEE** International Conference on Micro-Electronics and Telecommunication Engineering" SRM IST NCR Campus, Ghaziabad, 20TH – 21ST September 2018.
- ➢ Attended Ten Days Multidisciplinary Faculty Development Program on "Eruditia" from 12 June 2018 to 23 June 2018 at SRM Institute of Science and Technology, NCR Campus, Modinagar.
- ➢ Attended Two days "Author Workshop on Research Paper Writing" held at Jaypee Institute of Information Technology, Noida, 19 – 20 January 2018.
- ➢ Attended one week AICTE recognized short term course on "Product Design and Development through ICT", organized by National Institute of Technical Teachers Training and Research , Chandigarh (MHRD, Govt. of India), 6 – 10 November, 2017.
- ➢ Organized International level conference "2016 IEEE International Conference on Micro-Electronics and Telecommunication Engineering" SRM university NCR Campus, Ghaziabad, 22ND – 23RD September 2016.
- ➢ Attended one week short term course on "E-governance, Eco-preneurship and Green IT in Technical Institution through ICT", organized by National Institute of Technical Teachers Training and Research , Chandigarh (MHRD, Govt. of India), 9 – 13 February, 2015.
- ➢ Attended Three days Faculty Development Program on "Entrepreneurship Development", at SRM University, Ghaziabad, on 3 – 5 November 2015.

- Organized 2nd National level conference **"**National Conference on Recent Trends in Information and Communication Technology-2013" SRM university NCR Campus, Ghaziabad, 27th September 2013.
- Organized Short Term Training Program "ISTE – SRM Short Term Training Program on Virtualization Technology" at SRM University NCR Campus, Ghaziabad, 19-24 May 2014.
- Organized a National level conference **"**National Conference on Recent Trends in Information and Communication Technology-2012" SRM university NCR Campus, Ghaziabad, 27th & 28th September 2012.

Work Experience:

Organization	Duration	Designation
SRM Institute of Science & Technology, Delhi NCR Campus, Ghaziabad, 2021	13 February 2007- till date	Assistant Professor (Sr.G)
Kanpur Institute of Technology, Kanpur, Uttar Pradesh	1 January 2007 – 10 February 2007	Lecturer
Hindustan College of Science and Technology, Mathura, Uttar Pradesh	6 September 2001 – 31 December 2006	Lecturer

Professional Memberships:

- Life Member if Indian Society for Technical Education(ISTE)
- Life Member of Institution of Engineers(India)
- Member of International Association of Engineers (IAENG).
- Institute of Research Engineers And Doctors (IRED)
- Life Membership of Indian Science Congress