RKDF University, Bhopal

Faculty Profile

Basic Information	
Name	**Dr. Balajee Sharma**
Date of Birth	**03.04.1992**
Designation	**Associate Professor**
Department	**Electronics & Communication Engineering**
Experience	**10 year 10 Month**
Email ID	**sharmabalajee@gamil.com**
Contact No	**9039437620**

Educational Qualifications

Description	Year	%	Institute/University
(UG)- B.E. (ECE)	2013	66.14	**Rajiv Gandhi Prodyogiki Vishwavidyalaya, Bhopal (M.P.)**
(PG)- M. TECH. (ECE)	2015	85.00	**Rajiv Gandhi Prodyogiki Vishwavidyalaya, Bhopal (M.P.)**
M. Phil.	-	NA	-
(Ph. D.)- ECE	2022	Awarded	**RKDF University, Bhopal (M. P.)**
Post Doctorate	-	-	-
NET Qualified/GATE	-	-	-

Experience Detail

Experience (Teaching/Research)	Designation	Duration		Name of Institute/University
		From	To	
Teaching	Assistant Professor	21.05.2015	31.08.2022	**Vedica Institute of Technology**
Teaching	Associate	01.09.202	Till Date	**Vedica Institute of**

	Professor	2		**Technology**

Publications	
No. of Papers Published (Attach Annexure of papers published in peer-reviewed or refereed journals)	**15**
No. of Books Published	**-**
Books Chapters Published (Provide print of 1st Page of Book	**-**
No. of Patents Published/Grant	**02**

Ph. D/M. Phil Project supervised			
Research Program	**Award**	**Under Supervision**	**Name of University**
Ph. D (Provide detail i.e. name, title etc)		01	**RKDF University**
M. Phil	-		
PG Thesis/Dissertation	-		

Area of Expertise (100 words)

Award and Achievement	
Name of Award	**Description (With certified of Copy award)**
National	**-**
International	**-**

Conference/Seminar/Workshops/FDP	
Description	**No.**
Conference/Seminar paper presentation	**6**
Conference/Seminar attended/ organized	**6**
Work shop attended/ organized	**-**
FDP Attended/ organized	**-**

Research Project		
Name of Project	**Funding Agencies**	**Amount**

-	-	-

- **Any other Achievement**

Service to the Institution and Community:

Departmental Service: Serve on departmental committees, contribute to curriculum development, and participate in other activities that support the department's goals and missions.

University Service: Engage in university-wide initiatives, committees, and academic governance.

Community Engagement: Collaborate with industry, local organizations, and the community to apply ECE knowledge and expertise to real-world problems.

Professional Recognition

Seek Promotion: Work toward achieving tenure and advancing in your academic career.

Awards and Recognition: Strive for recognition in the form of awards, honors, and accolades for outstanding teaching, research, or service contributions.

Work-Life Balance:

Achieve Balance: Strive for a healthy work-life balance to maintain your well-being and sustain a long and productive career in academia.

Educational Qualifications:

- Ph.D. in Electronics& Communication Engineering from Ram Krishna Dharmarth Foundation University Bhopal in year 2022.
  Title of the thesis: "*AI Based Performance Enhancement in MIMO OFDM*"
- Master of Technology in Digital Communication from RKDF University with first division with distinction; CGPA 8.5 in Year 2015.
- Bachelor in Engineering in Electronics & Communication Engineering from Rajiv Gandhi Technical University with first division; 66.14 % in year 2013.
- Intermediate (10+2) from BSEB Patna with first division with distinction; 61.14 %. in year 2009.
- High School (10^{th}) from CBSE with Second division with.58.43 %. in year 2007.

Research Interests:

Channel Modeling and Estimation: Investigating and modeling the wireless channel in MIMO-OFDM systems, especially in complex environments like urban or indoor settings. Developing efficient algorithms for channel estimation and tracking to improve system performance.

Preceding and Beam forming Techniques: Designing and analyzing advanced precoding and beam forming schemes for MIMO-OFDM to enhance spectral efficiency and reduce interference.

Resource Allocation and Optimization: Developing resource allocation algorithms that allocate subcarriers, power, and antennas efficiently to maximize system capacity, minimize interference, or meet quality-of-service (QoS) requirements.

Interference Mitigation and Coexistence: Investigating techniques to mitigate interference, especially in dense wireless networks, such as interference-aware preceding and interference cancellation.

Massive MIMO and Beyond: Exploring the potential of massive MIMO systems, which involve a large number of antennas at both transmitter and receiver, and their application in MIMO-OFDM systems. Beyond massive MIMO, looking at new paradigms like cell-free massive MIMO and holographic MIMO.

Synchronization and Timing: Developing synchronization algorithms that ensure proper timing and frequency synchronization in MIMO-OFDM systems, even in the presence of channel impairments.

Channel Coding and Error Correction: Researching coding techniques tailored for MIMO-OFDM, such as space-time coding, to improve error correction and reliability.

Energy Efficiency and Green Communications: Investigating energy-efficient MIMO-OFDM systems, considering power allocation strategies and the impact on battery life in wireless devices.

Millimeter-Wave (mm Wave) MIMO-OFDM: Exploring MIMO-OFDM at high-frequency bands, like mm Wave, which has unique challenges and opportunities for improving data rates.

Cross-Layer Optimization: Integrating MIMO-OFDM with other communication layers, such as the network layer, for cross-layer optimization to achieve better overall system performance.

Machine Learning and AI Applications: Leveraging machine learning and artificial intelligence techniques for optimizing MIMO-OFDM system parameters, predicting channel conditions, or developing intelligent resource allocation strategies.

Security and Privacy: Investigating security challenges and privacy concerns in MIMO-OFDM systems, and developing encryption and authentication techniques to protect data transmission.

Standardization and Prototyping: Contributing to the development of MIMO-OFDM standards or implementing real-world prototypes to validate research findings.

Software Proficiency:

- MATLAB and Simulink

Working/Teaching Experience:

- Currently working as an Associate Professor at Ram Krishna Dharmarth Foundation University Bhopal. (26 September 2013 to till date)

Administrative Responsibilities:

- Working as Admission Counseling Guidance
- Working as Assistant TPO
- Other works allotted by Management

List of Research Publications/Confrence :

1. **Balajee Sharma,** Akant Kumar Raghuwanshi and Ajay Barapatre (2025) Emerging Trends in 5G and Beyond-5G Wireless Networks. Annual International Conference on Recent advanced in Engineering Technology , Healthcare& Management (AIC-RAETHM 2025) *Jan10,11 2025.*

2. Ajay Barapatre, **Balajee Sharma** and Akant Kumar Raghuwanshi (2025) A Study on Security Requirements of IOT. Annual International Conference on Recent advanced in Engineering Technology , Healthcare& Management (AIC-RAETHM 2025) *Jan10,11 2025.*

3. Akant Kumar Raghuwanshi, Ajay Barapatre and **Balajee Sharma** (2025) Wireless Sensor Networks and Its Clustering Algorithm. Annual International Conference on Recent advanced in Engineering Technology , Healthcare& Management (AIC-RAETHM 2025) *Jan10,11 2025.*

4. Hemant Rajoriya and **Balajee Sharma** (2024) A Comprehensive Review of Deep Compressive Sensing for Efficient IoT Data Management. *Journal Trends in Electrical Engineering, 14(03).*

5. Hemant Rajoriya and **Balajee Sharma** (2024) Deep Learning-Enhanced Compressive Sensing for Wireless IoT Data Optimization and Weather Monitoring. *International Journal of Satellite Remote Sensing, 02(02).*

6. Hemant Rajoriya and **Balajee Sharma** (2024) Innovative Approaches to Reducing Data Traffic in IoT Networks Using Deep Learning and Compressive Sensing. *International Journal of Satellite Remote Sensing, 02(02).*

7. **Balajee Sharma** and Akant Kumar Raghuwanshi (2024) Advancements in AI-driven Techniques for MIMO-OFDM Systems: A Comparative Analysis. *International Journal of Innovative Research in Technology and Science, 11(02).*

8. Akant Kumar Raghuwanshi and **Balajee Sharma** (2024) Investigating Power-Aware Protocols for Wireless Sensor. *International Journal of Innovative Research in Technology and Science, 11(02).*

9. **Balajee Sharma and** Virendra Singh Chaudhary (2022) Channel Estimation and Equalization Using FIM for MIMO-OFDM on Doubly Selective Faded Noisy Channels. *ecti transactions on electrical engineering, electronics, and communications vol.20, no.1 february 2022.*

10. **Balajee Sharma and** Virendra Singh Chaudhary (2021) Channel Estimation using Frequency Index Modulation for MIMO-OFDM on Doubly Selective Faded Noisy Channel. *Information Technology & Electrical Engineering (ITEE) 10 (3).*

11. **Balajee Sharma and** Virendra Singh Chaudhary (2021) Channel Estimation using Frequency ndex Modulation for MIMO-OFDM. *Journal of the Sayajirao university of Baroda. ISSN :0025-0422 55 (1).*

12. **Balajee Sharma and** Virendra Singh Chaudhary (2019) Channel Estimation using STTC Index Modulation for MIMO-OFDM. *2nd International Conference On "Contemporary Technological Solutions Towards Fulfillment Of Social Needs" BY RKDF University September 28-29, 2019.*

13. **Balajee Sharma and** Virendra Singh Chaudhary (2018) A Study of Spectrum Sensing based Channel Estimation for MIMO–OFDM over Noisy Channel. *International Conference on Contemporary Technological Solutions towards fulfillment of Social Needs" BY RKDF University August, 2018.*

14. **Balajee Sharma** and Rashmi Pandey (2015) A Performance Enhancement in BER for OFDM System Using 16-QAM Technique and Viterbi Algorithm. *international journal of scientific progress and research (ijspr),* 14(01).

15. **Balajee Sharma** and Rashmi Pandey (2015) A Review: Modelling and Performance of OFDM System using QAM. *international journal of scientific progress and research (ijspr),* 13(03).

Patents Published / Filed:

1. Dr. Rashmi Pandey, Mr. Kuldeep Pandey, Mr. Abhinav Shukla, Dr. Akant Kumar Raghuwanshi, **Dr. Balajee Shrama**, Mr. Ajay Kumar Barapatre " *Wireless power Transfer Plans for Installable Biomedical Components* " ***2024.*** *APPLICATION NO.202321064948.*

Ph.D Research Scholar Admitted

1. Yashwant Singh 2023 (Course work completed)

Declaration

I hereby declare that all the statements made in the curriculum vitae are true to the best of my knowledge and belief.

DATE:

PLACE: Bhopal

(Balajee Shrama)

Google Scholar Citations:

https://scholar.google.com/citations?user=CNLLp_QAAAAJ&hl=en