Yericharla Mary Asha Latha

PERSONAL INFORMATION

Assistant Professor
Department of Electronics Engineering,
Indian Institute of Technology (Indian School of Mines) Dhanbad, Jharkhand, India, 826004.

Email: ymashalatha@iitism.ac.in, ymashalatha@ieee.org
LinkedIn: mary-asha-latha-yericharla-189152b5
ORCID: 0000-0001-6750-8755

AREAS OF RESEARCH

RF Power Amplifier Design: Broadband, High Efficiency, Switched mode PAs, Harmonic Manipulation, Harmonic Injection, Load Modulation, Doherty PA

Chip Design: GaN MMIC based RF Power Amplifier Design

WORK EXPERIENCE

Oct.2024 – Till Date: **Assistant Professor Grade II**, Department of Electronics Engineering, IIT (ISM) Dhanbad, India.

Aug.2023 – Aug.2024: **Postdoctoral Research Associate**, Department of Electronic & Electrical Engineering, The University of Sheffield, United Kingdom.

Nov.2021 – Mar.2023: **Postdoctoral Fellow**, Instituto de Telecomunicações, Univerisity of Aveiro, Aveiro, Portugal.

EDUCATIONAL DETAILS

Dec.2015 - Jul.2021: **Doctor of Philosophy (Ph.D.)** in Electronics and Communication Engineering, Indian Institute of Technology (IIT), Roorkee, Uttarakhand.
Thesis Title: "*Waveform Engineering Inspired Power Amplifiers for Wideband Applications*"
Thesis Defended: 20 July 2021 **Advisor:** Prof. Karun Rawat

Jul.2013 - Aug.2015: **Master of Technology (M.Tech.)** in VLSI Design Automation and Techniques, Dept. of ECE, NIT Hamirpur, Himachal Pradesh.
Dissertation Title: "*An Improved Comb Structured Battery-less Intraocular Pressure Sensor for Glaucoma Diagnosis*"
CGPA: ***9.18***/10 (Gold Medal) **Advisor:** Prof. Gargi Khanna

Oct.2008- May.2012: **Bachelor of Technology (B.Tech.)** in Electronics and Communication Engineering, Jawaharlal Nehru Technological University, Kakinada, Andhra Pradesh, India.

Percentage: ***80.11%*** (First Class with Distinction)

BOOK CHAPTERS

1. **Y. M. Asha Latha**, "RF Power Amplifier Circuits for Wireless Communications," In book: Advanced Wireless Communication Technologies, Taylor & Francis, CRC Press, 2025. (Accepted)

PATENTS & PUBLICATIONS

PATENT

1. K. Rawat**, Y. M. Asha Latha,** "Multi-octave Modes for Switching Power Amplifiers," Indian Patent No. 509990, Feb. 2024 (Granted).

REFEREED JOURNALS

6. **Y. M. Asha Latha**, L. C. Nunes, F. M. Barradas and J. C. Pedro, "Theory and Design of Doherty Power Amplifier with Active Harmonic Injection" in *IEEE Access,* vol. 12, pp. 41631-41642, Mar. 2024. DOI: 10.1109/ACCESS.2024.3377901.
Link: (https://ieeexplore.ieee.org/document/10473060**)**

5. **Y. M. Asha Latha**, and K. Rawat, "Continuous Class F^{-1} Ku Band GaN MMIC Power Amplifier with an Effect of Nonlinear Output Capacitance" in *IEEE Transactions on Circuits and Systems II: Express Briefs*, vol. 70, no. 10, pp. 3887-3891, Oct. 2023. DOI: 10.1109/TCSII.2023.3289841. **Link: (**https://ieeexplore.ieee.org/document/10164628**)**

4. **Y. M. Asha Latha**, and K. Rawat, "Extending the Design Space of Class E Mode to Design a Multi-Octave Power Amplifier" in *IEEE Transactions on Circuits and Systems II: Express Briefs*, vol. 69, no. 12, pp. 4829-4833, Dec. 2022. DOI: 10.1109/TCSII. 2022.3195730.
Link: (https://ieeexplore.ieee.org/document/9847373**)**

3. **Y. M. Asha Latha**, and K. Rawat, "Design of Ultra-Wideband Power Amplifier Based on Extended Resistive Continuous Class B/J Mode," in *IEEE Transactions on Circuits and Systems II: Express Briefs*, vol. 69, no. 2, pp. 419-423, Feb. 2022. DOI: 10.1109/TCSII.2021.3095379. **Link:** (https://ieeexplore.ieee.org/document/9475979)

2. **Y. M. Asha Latha**, K. Rawat and P. Roblin, "Nonlinear Embedding Model-Based Continuous Class E/F Power Amplifier," in *IEEE Microwave and Wireless Components Letters*, vol. 29, no. 11, pp. 714-717, Nov. 2019. DOI: 10.1109/LMWC.2019.2941919
Link: (https://ieeexplore.ieee.org/abstract/document/8855081)

1. **Y. M. Asha Latha**, K. Rawat, M. Helaoui and F. M. Ghannouchi, "Broadband continuous mode power amplifier with on-board harmonic injection," in *IET Microwaves, Antennas & Propagation*, vol. 13, no. 9, pp. 1402-1407, July 2019. DOI: 10.1049/iet-map.2018.5885

Link: (https://digital-library.theiet.org/content/journals/10.1049/iet-map.2018.5885)

CONFERENCES

11. **Y. M. Asha Latha**, "Continuous Class E Power Amplifier Mode in the Presence of Nonlinear Output Capacitance," 2025 IEEE National Conference on Communications **(NCC 2025)**, New Delhi, India, Mar. 6-9, 2025.

10. A. Moores, **Y. M. Asha Latha**, and M. M. De Souza, "Model Extraction of GaN HEMT for Design of a High-Performance Class BJF^{-1} Power Amplifier," Fourth IEEE UK&I YP Postgrad STEM Research Symposium, Newcastle, United Kingdom, Nov 18, 2023.

9. **Y. M. Asha Latha**, and K. Rawat, " Methodology to Design a CCF^{-1} Ku Band GaN MMIC PA with Nonlinear Output Capacitance," 2023 IEEE MTT-S and AP-S Microwave, Antennas, and Propagation Conference **(MAPCON 2023)**, Ahmedabad, India, Dec 10-14, 2023. **Link: (**https://ieeexplore.ieee.org/document/10463868**)**

8. **Y. M. Asha Latha**, and K. Rawat, " Continuous Class F^{-1} Ku Band GaN MMIC Power Amplifier with an Effect of Nonlinear Output Capacitance," 2023 IEEE International Symposium on Integrated Circuits and Systems (**ISICAS 2023**), Jeju, Korea, Oct 24-25, 2023. DOI: 10.1109/TCSII.2023.3289841.
Link: (https://ieeexplore.ieee.org/document/10164628**)**

7. **Y. M. Asha Latha**, L. C. Nunes, F. M. Barradas and J. C. Pedro, " The Role of Nonlinear C_{out} in Continuous Class F PAs," 2023 IEEE MTT-S International Microwave Symposium **(IMS 2023)**, San Deigo, California, United States, Jun 11-14, 2023. DOI: 10.1109/IMS37964.2023.10188019. **(Early Career Paper Competition Finalist)**

Link: (https://ieeexplore.ieee.org/document/10188019**)**

6. **Y. M. Asha Latha**, M. Shariatifar and K. Rawat, "Performance Estimation of Continuous Class F^{-1} PA with Non-Ideal Harmonic Terminations," 2022 IEEE MTT-S and AP-S Microwave, Antennas, and Propagation Conference **(MAPCON 2022)**, Bangalore, India, Dec 12-16, 2022, DOI: 10.1109/MAPCON56011.2022.10047381.

Link: (https://ieeexplore.ieee.org/abstract/document/10047381**)**

5. **Y. M. Asha Latha** and K. Rawat, "Methodology to Design Multi-Octave Power Amplifier Using Extended Class B to Class J Continuous Mode," 2021 IEEE MTT-S International Microwave and RF Conference **(IMARC 2021)**, Kanpur, India, 2021, pp. 1-4. DOI: 10.1109/IMaRC49196.2021.9714641

Link: (https://ieeexplore.ieee.org/document/9714641**)**

4. **Y. M. Asha Latha** and K. Rawat, "Methodology to Realize Wideband High Efficiency Power Amplifier Using Active Harmonic Injection," 2019 IEEE MTT-S International Microwave and RF Conference **(IMARC 2019)**, Mumbai, India, 2019, pp. 1-4. DOI:

10.1109/IMaRC45935.2019.9118719 **(Received Best student paper award second prize). Link: (**https://ieeexplore.ieee.org/abstract/document/9118719**)**

3. **Y. M. Asha Latha** and G. Khanna, "Design and Simulative Analysis of a Batteryless Teflon Coated Capacitive Pressure Sensor for Glaucoma Diagnosis," IEEE 19th International Conference on VLSI Design and Test **(VDAT 2015)**, Jun 26-29, 2015. DOI: 10.1109/ISVDAT.2015.7208118
Link: (https://ieeexplore.ieee.org/abstract/document/7208118)

2. **Y. M. Asha Latha** and G. Khanna, "A Diaphragm Capacitive Sensor with Improved Sensitivity for Intraocular Pressure Measurement," *International Conference on Science, Management, Engineering and Technology (ICSMET 2015), Dubai,* pp. 12-16, Mar 18-19, 2015. **(Received Best paper award)**

1. **Y. M. Asha Latha**, G. Khanna and N. Dhingra, "Bio MEMS Diagnostic Sensors For Glaucoma Disease In Eye," *2014 NIT-MTMI International Conference on Emerging Paradigms and Practices in Global Technology, Management & Business Issues, NIT Hamirpur,* pp. 93-98, Dec 22-24, 2014.

AWARDS AND RECOGNITION

1. Awarded *"Gold Medal"* from National Institute of Technology, Hamirpur for academic excellence in M. Tech.
2. Awarded *"Best Student Paper (1st runner-up)"* in IEEE MTT-S IMaRC 2019.
3. Recipient of *"Visvesvaraya Ph.D. Fellowship"* from Ministry of Electronics and Information Technology (MietY), Government of India.
4. Finalist in *"Early Career Paper Competition"* in IEEE MTT-S IMS 2023.

PROJECTS

S. No	Project No	Title	Role	Duration	Cost	Funding Agency	Status
1.	MISC 0123	Special Grant to Establish Advanced Lab	PI	1 year	30 Lakhs	IIT(ISM) Dhanbad	Ongoing
2.	FRS MISC 0124	Design and Development of a Doherty Power Amplifier with Active Harmonic Injection to Improve Linearity for 5G/6G Communication Systems	PI	2 years	20 Lakhs	IIT(ISM) Dhanbad	Ongoing
3	ANRF/ ECRG/ 2024/ 004304/ ENS	Harnessing the Harmonics in Sequential Load Modulated Balanced Amplifiers for Efficiency and Linearity Enhancement for 5G/6G Applications	PI	3 years	65.9 Lakhs	ANRF PM-ECRG	Approved

PH.Ds SUPERVISED

S. No	Title of Project	Name of Student	Registration Year	Status
1.	Design of a Doherty Power Amplifier with Active Harmonic Injection to Improve Linearity for 5G/6G Communication Systems	Ruby Bharti	2024	Ongoing

PROJECTS AND THESIS SUPERVISED

S. No	Title of Project	Name of Student	Course	Status
1.	Design of Class X Power Amplifier with the Effect of Nonlinear Output Capacitance	Bhukya Sharath Naik	M.Tech.	Ongoing
2.	AI/ML Based RF Power Amplifier Design	Anurag Ranjan	B.Tech.	Ongoing

COURSES TAUGHT

- **M.Tech Courses**
  - ***NECC510*** *Microwave Transmission Lines and Matching Networks*
  - ***NECC538*** *RF Circuits and Networks Simulation Lab*
  - ***NECC539*** *Antenna Simulation Lab*

PROFESSIONAL ACTIVITIES

- **Reviewer** of
  - *IEEE Transactions on Circuits and Systems I: Regular Papers*
  - *IEEE Transactions on Circuits and Systems II: Express Briefs*
  - *IEEE Microwave Wireless Technology Letters*
  - *IEEE Access*
  - *IET Circuits, Devices and Systems*
  - *IEEE Conferences*

PROFESSIONAL AFFILIATIONS

- IEEE Member (94143106)
- Member IEEE MTT society, IEEE CAS society, IEEE Young Professionals

Date: 12 March 2025 **Yericharla Mary Asha Latha**