

## Curriculum Vitae

Gorre Pradeep  
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### CAREER OBJECTIVE

To become an active and dynamic professional in the world of engineering by sticking to the policy “Contribute maximum to the job & learn maximum from the job”.

### PROFESSIONAL EXPERIENCE - 14+ Years (Research: 4+ Years and Teaching: 10+ Years)

- 4+ years of research experience in the field of RFIC design to meet the global demand for producing advanced RFIC components using Nano-scale Integrated Circuits.
- 10+ years of experience in teaching subjects such as **Circuit Theory, Electromagnetic Transmission Lines, Signals & Systems, CMOS VLSI Design, Analog IC design, HDL, MP&MC, HDL through VHDL/Verilog** and ALP.
- Experience in project documentation & research article writing, maintaining the database.

### RESEARCH EXPERIENCE

**National Institute of Technology Karnataka, Surathkal    Dec. 2018 – 2022 (Thesis Submitted)**  
Research on Optical and RF front-end amplifiers IC design.

### RESEARCH AREAS

My main research is focused on Analog RF and Mixed-signal Integrated circuit design for modern wireless communication. Our designed and fabricated Integrated chips cover microwave to millimeter and submillimeter-wave applications including the following:

- Terahertz Based wireless communication
- Trans-impedance amplifier for 5G Backhaul links, LiDAR Sensor, Patient body diagnosis,
- Low noise amplifier for millimeter-wave applications
- Microwave-based High efficiency Power Amplifier.

### PRACTICAL WORKS

- Worked on LPK machine to fabricate RF board for front-end amplifier designs.
- Worked on circuit schematic to post-layout simulations on UMC Cadence 180nm/65nm technology and KEYSIGHTS ADS + EMPRO environment.
- Designed Patch antenna using HFSS Studio Suite.
- Hands on experience on RF and Microwave Test Equipment's: Vector Signal Generator (Keysight N5182B-506), Vector Signal Analyzer (Keysight N9010B-526), ENA Series Network Analyzer (Keysight E5063A-2D5), Mixed Signal Oscilloscope (MSOX4104A), Keysight RFMIC kit, P-series power meter (Keysight N1911A).

### TEACHING EXPERIENCE

**Vignan's Foundation for Science, Technology and Research – VFSTR Guntur, AP, INDIA**

- Working as Assistant Professor **June 2022 – Till date**
- Positions held  
Board of Studies (BoS) coordinator, ABET coordinator, In-charge for Advance Center of Excellence for RF & MW.

**Siddhartha Institute of Science and Technology – SISTK Puttur, AP, INDIA**

- Worked as Assistant Professor **June 2018 – Dec. 2018**
- Positions held  
Placement coordinator, NBA coordinator, Admissions coordinator, In-charge for Microsoft Innovation Center (MIC).

**Sree Venkateswara College of Engineering – SVCE Nellore, AP, INDIA**

- Worked as Assistant Professor **Feb 2015 – Nov. 2017**
- Positions held  
Head for Robotics laboratory, Symposium (Sankethika-2k16,2k17) coordinator, SPOC for NPTEL Local chapter.

**Jagan's College of Engineering and Technology – JCET Nellore, AP, INDIA**

- Worked as Assistant Professor **June. 2012 – Feb 2015**
- Positions held  
In-charge HOD, Timetable In-charge, Placement coordinator.

**Vivekananda Institute of Technology – VKIT Bangalore, KA, INDIA**

- Worked as Lecturer **March. 2011 – May 2012**
- Positions held  
Timetable In-charge.

**Geetanjali Institute of Science and Technology – GIST Nellore, AP, INDIA**

- Worked as Assistant Professor **June. 2010 – Feb 2011**
- Positions held  
Timetable In-charge.

**Priyadarshini College of Engineering – PCET Nellore, AP, INDIA**

- Worked as Lecturer **Oct. 2005 – May 2008**
- Positions held  
Timetable In-charge.

**EDUCATION**

**Ph.D. (First Class)** in Electronics and Communication Engineering (ECE) from **National Institute of Technology Karnataka Surathkal-NITK**, Mangalore, INDIA **Dec. 2018 – Till date**

**Thesis Title:** Design and Performance Analysis of an Optical Front-end Transceivers using Nano-scale IC

**Description:** The main objective of this research work is to perform nano-scale IC device modeling at the THz regime, and to design advanced optical front-end amplifiers at THz/mm-wave/microwave frequency range for 5G communication/ LiDAR/bio-medical applications considering design specification trade-offs using novel circuit techniques.

**M.TECH. (First Class)** in VLSI System Design & Embedded Systems from **RV College of Engineering – RVCE**, Bengaluru, INDIA **July 2008 – Dec. 2010**

**Thesis Title:** Design and development of electronic rudder actuation system for an autonomous ship.

**Description:** Design and development of electronic rudder actuation system for autonomous ship describe the use of an advanced microcontroller (ARM 7 TDMI) to generate the desired heading angle based on information collected from the user and GPS system.

**B.TECH. (First Class)** in Electronics and Instrumentation Engineering from **Jawaharlal Nehru Technological University Hyderabad – JNTUH**, Andhra Pradesh, INDIA **July 2001 – April 2005**

**Project Title:** Design of Pick and Place Robot.

**Description:** The objective of this project work is to design a prototype Pick and Place robot for repeated work and/or to operate in a hazardous environment. The work uses Microcontroller 8051 as a controller unit and a wooden joint as a robot arm. Stepper motors have used a wheel to move the bot.

## JOURNAL PUBLICATIONS

### SCI OR SCIE JOURNALS (PUBLISHED)

1. Nazmul, **Pradeep Gorre**, Jatoth Deepak Naik, AlaaDdin Al-Shidaifat, Sandeep Kumar and Hanjung Song, "*A bridge between two biological neurons by nanoscale CMOS neuron and synapse*," Microelectronics Journal, **Elsevier-SCI, (Accepted) (IF=1.92)**.
2. **Pradeep Gorre**, Vignesh R, Hanjung Song, Sandeep Kumar, Gunjan Mittal Roy, "*A 2.71 pA/√Hz Ultra-Low Noise, 70 dB Dynamic range CMOS Transimpedance amplifier with Incorporated Microstrip Line Techniques under UWB*" **Int J Circuit Theory Appl., Springer-SCI, 2022, p.no-1-20, Sep.**
3. Manishankar Prasad Gupta, **Pradeep Gorre**, Sandeep Kumar, "*A Wideband, 25/40dBm High I/O Power GaN HEMT Ultra-Low Noise Amplifier Using Even-Odd Mode Techniques*" Microelectronics Journal, **Elsevier-SCI, 2022, p.no.1-20, Aug. (IF=1.92)**.
4. **Pradeep Gorre**, R. Vignesh, and Sandeep Kumar. "*A Strip Line Technique Based 1 Gb/s, 70-dB Linear Dynamic Range Transimpedance Amplifier towards LiDAR Unmanned Vehicle Application.*" Microelectronics Journal, **Elsevier-SCI, 2022, p.no.1-20, June (IF=1.92)**.
5. Jatoth Deepak Naik, **Pradeep Gorre**, Naga Ganesh Akuri, Sandeep Kumar and Hanjung Song, "*High-Performance Graphene FET Integrated Front-end Amplifier Using Pseudo-Resistor Technique for Neuro-prosthetic Diagnosis*" Biochip journal, **Springer-SCI, 2022, p.no1-10, June (IF=4.13)**.
6. Vignesh R, **Pradeep Gorre**, Hanjung Song, Sandeep Kumar, "*A K/Ka-band Switchless Reconfigurable 65nm CMOS LNA based on Suspended Substrate Coupled Line*" **IEEE Access, 2022, p.no. 1-16, Mar 25 (IF=3.367)**
7. **Pradeep Gorre**, R. Vignesh, Hanjung Song, and Sandeep Kumar. "*A 64 dBΩ, 25 Gb/s GFET based transimpedance amplifier with UWB resonator for optical radar detection in medical applications.*" Microelectronics Journal 111 (2021): 105026, **Elsevier-SCI (IF=1.92)**.
8. **Pradeep Gorre**, R. Vignesh, Hanjung Song, and Sandeep Kumar. "*A 61.2-dBΩ, 100 Gb/s Ultra-Low Noise Graphene TIA over D-Band Performance for 5G Optical Front-End Receiver.*" Journal of Infrared, Millimeter, and Terahertz Waves 42, no. 3 (2021): 239-259, **Springer-SCI (IF=2.04)**.
9. Vignesh, R, **Pradeep Gorre**, and Sandeep Kumar. "*A novel wide bandwidth FBSSIR integrated low noise amplifier for satellite navigational receiver system.*" Microelectronics Journal 117 (2021): 105288., **Elsevier-SCI (IF=1.92)**.
10. Vignesh, R., **Pradeep Gorre**, Hanjung Song, and Sandeep Kumar. "*Highly robust X-band quasi circulator-integrated low-noise amplifier for high survivability of radiofrequency front-end systems.*" (2021), **Wiley-SCI (IF=1.5)**.
11. Vignesh R, **Pradeep Gorre**, Hanjung Song, Sandeep Kumar, "*Performance analysis of 65 nm CMOS LNA using SSL technique for 5G cellular front-end receivers*" Int. J. Electron. Commun. (AEÜ) 127 (2020), **Elsevier-SCI (IF=3.0)**.

## RESEARCH ARTICLES UNDER REVIEW

1. Gunjan Mittal Roy, Santanu Dwari, Binod Kumar Kanaujia, Sandeep Kumar, Hanjung song, Pradeep Gorre, “*An On-chip antenna Integrated Low Noise Amplifier Co-Design Using 65nm CMOS Process for Wideband radar detection*” Analog Integrated Circuits & Signal Processing (ALOG), Iranian Journal of Science and Technology, Transactions of Electrical Engineering- **Springer-SCI, (Communicated) (IF=1.37)**.

## BOOK CHAPTERS

1. Manishankar Prasad Gupta, Pradeep Gorre, Sandeep Kumar, and Hanjung Song “*A Wide-band Microstrip Line Based Balun Structure for High Power Amplifier Applications*”, a chapter in the book entitled “**Modern Electronics Devices and Communication Systems**” Springer Singapore.
2. Jathod Deepak, Pradeep Gorre, Rajesh Kumar, Sandeep Kumar, Hanjung Song, “*A 73% PAE, Highly Gain Inverse Class-F Power Amplifier for S- Band Applications*”, a chapter in the book entitled “**Advances in Smart Communication and Imaging Systems**” Springer Singapore.
3. Pradeep Gorre, Vignesh R, Arya R, Kumar S (2020), “*A Review of mm-Wave Power Amplifiers for Next-Generation 5G Communication*”, a chapter in the book “**Soft Computing: Theories and Applications. Advances in Intelligent Systems and Computing**”, Springer, 2019.
4. Pradeep Gorre, Rajesh Kumar, Hanjung Song, Sandeep Kumar, “*Mm-Wave CMOS Power Amplifiers for 5G*”, a chapter in the book entitled “**CMOS Analog IC Design for 5G and Beyond**”, DOI:10.1007/978-15-9865-4, Springer, 2021.

## CONFERENCES

1. Pradeep Gorre, Aswini Kumar Samantaray, Sai Kiran M, Shaik Bano Rashmi “*A Microstrip Strip Line Based High Dynamic range Transimpedance Amplifier for LiDAR Application*”, AISP-2023, VIT University, Amaravati (IEEE Explore Indexed), -2023 (Accepted).
2. Sai Kiran M, Jatoth Deepak Naik, Pradeep Gorre, Sandeep Kumar, “*High Efficiency Broad-band Class F Power Amplifier for Sub-6-GHz 5G Application*”, WAMS-2023, Pandit Deendayal Energy University (PDEU), Gandhinagar (IEEE Explore Indexed), June-2023 (Communicated).
3. Pradeep Gorre, Jatoth Deepak Naik, Sandeep Kumar, Han Jung Song, “*Graphene FET based TIA over D-Band for 5G Application*”, ICVSComs-2022, Vignan’s Foundation for Science, Technology and Research (Deemed to be University), Guntur (Springer Indexed), August 2022.
4. Jatoth Deepak Naik, Pradeep Gorre, AlaaDdin Al-Shidaifat, Sandeep Kumar, Han Jung Song, “*A High-Sensitive High Input Impedance CMOS Front-End Amplifier for Neural Spike Detection*”, ICCWC-2022, National Institute of Technology Karnataka, Surathkal (Springer Indexed), June 2022.

5. Gunjan Mittal Roy, Sandeep Kumar, **Pradeep Gorre**, "*An efficient band CMOS LNA for satellite based remote sensing application*", ICCWC-2022, National Institute of Technology Karnataka, Surathkal (Springer Indexed), June 2022.
6. Jatoth Deepak Naik, **Pradeep Gorre**, AlaaDdin Al-Shidaifat, Sandeep Kumar, Han Jung Song, "*Microstrip line-based wideband power divider*", ADCAS-21, Deenbandhu Chhotu Ram University of Science and Technology, Sonipat, (**Springer Indexed**), Dec 2021.
7. Vaishnavi Surve, Sandeep Kumar, **Pradeep Gorre**, "*High Efficiency Broadband Mixed Mode Power Amplifier for Patient Monitoring*" IEEE 7th International Conference on Signal Processing and Communication (ICSC), Noida, CasINDIA (**IEEE explore index**), 2021
8. R Vignesh, **Pradeep Gorre**, Sandeep Kumar, Hanjung Song "*A 28-32GHz CMOS LNA with Broadband Approach for 5G Mm-Wave Communication cells*" IEEE Asia-Pacific Microwave Conference (APMC), Singapore (**IEEE explore index**), 2019
9. **Pradeep Gorre**, Pampapathi, Hariprasad, "*Review on Predictive Control Algorithms for Ship Navigation*", NLPPE-10, R. V. College of Engineering, Bangalore, 2010.

#### RESEARCH WORK CONTRIBUTION TOWARDS FUNDING AGENCIES

1. **Project Title:** Design and Development of Ultra-low-power CMOS IC for Wireless Neural Monitoring System.  
**Role:** Research Scholar  
Duration: 2020-2023  
**Funding Agency:** 2020 India-Korea Joint Research International Division, DST, Govt of India.  
**Total Budget:** 120 Lakh Rupees

#### ACHIEVEMENTS

- Provisionally selected for the **Best Researcher Award** and recommended by scientific committee (NETWORK 2023) for the research work "*Folded Butterfly Stub Stepped Impedance Resonator (FBSSIR) integrated low noise amplifier (LNA) implemented using packaging technology for the satellite navigation receiver system*", 2023.
- **Best Paper Award** in 2<sup>nd</sup> International Conference on Computational Electronics for Wireless Communications (ICCWC-2022) held at National Institute of Technology, Surathkal in Virtual mode June 9th-10th, 2022, for the paper titled "*A High-Sensitive High Input Impedance CMOS Front-End Amplifier for Neural Spike Detection*".
- **Cash award** of 50,000 KRW for **outstanding scientific research and excellent oral presentation** entitled "*Design and Performance Analysis of TIA at THz/UWB Regime*" shown at the 1<sup>st</sup> International Nano-Technology and Nano-Systems workshop 2021, Republic of South Korea.
- **Best Paper Award** in 7th International Conference on Signal Processing and Communication (ICSC) 2021 held at Jaypee Institute of Information Technology, Noida in Virtual mode November 25th-27th, 2021, for the paper titled "*High Efficiency Broadband Mixed Mode Power Amplifier for Patient Monitoring*".
- Qualified in GATE-2007, "**GATE Rank is 632**".
- Cleared IELTS in 2014, "**IELTS score is 6.5 Bands**"

#### CERTIFICATIONS

- Certificate of completion in “**ROBOTICS Task Based Training-2016**” conducted by e-YANTRA, IIT Bombay.

### RESEARCH OUTREACH

Google Scholar: <https://scholar.google.com/citations?user=bkoq3B4AAAAJ&hl=en&oi=ao>

Total citations	h-index	i-10 Index	Scopus Index
14	2	NA	NA

### FELLOWSHIPS

- Received MHRD research fellowship from December 2018 to June 2022.
- Received GATE fellowship for the PG course from 2008 to 2010.

### COLLABORATIONS

- Doing research works with the researchers from **Department of Nanotechnology and Nano science Laboratory**, Inje University, **Republic of South Korea**.
- Doing research works with the researchers from **JIMS Engineering Management Technical Campus**, Greater Noida, U.P., India.

### Workshops/FDPs/Conferences Attended

1. A two-day international conference, “**ICCWC – 2022**” organized by the Department of Electronics and Communication Engineering, National Institute of Technology Karnataka, Surathkal. <https://www.iccwc22.in/student>
2. A five-day workshop on "Recent trends in Free Space Optics and its Applications" – RFA – 2021 organized by the Department of Electronics and Communication Engineering, National Institute of Technology Karnataka, Surathkal, from 04<sup>th</sup> to 08<sup>th</sup> October 2021.
3. A five-day workshop on "Recent Trends in Nanoelectronics and Optoelectronics" – RNO – 2020 organized by the Department of Electronics and Communication Engineering, National Institute of Technology Karnataka, Surathkal, from 12<sup>th</sup> to 16<sup>th</sup> October, 2020.
4. One-day FDP on “The future of ROBOTICS” organized by Audisankara College of Engineering, Gudur, Andhra Pradesh.
5. One-month course on “**ROBOTICS** for B. Tech graduates under *e-Yantra program IIT Bombay*”, at SVCN, Nellore
6. A two-day "National symposium" – Sankethika2K17 organized by Sree Venkateswara College of Engineering, Nellore, from 21<sup>st</sup> to 22<sup>nd</sup> January 2017.
7. A two-day "National symposium" – Tecknotron2K14 organized by Jagan’s College of Engineering, Nellore, from 21<sup>st</sup> to 22<sup>nd</sup> January 2014.

### REFERENCES

1. Dr. Sandeep Kumar – Assistant Professor, Dept. of Electronics and Communication Engineering, NITK, Surathkal. Contact: +91-9654463102, Email: [sandeep@nitk.edu.in](mailto:sandeep@nitk.edu.in)
2. Prof. Hanjung Song – Professor, Department of Nanotechnology and Nano science Laboratory, Inje University, Republic of South Korea, Email: [hjsong@inje.ac.kr](mailto:hjsong@inje.ac.kr)
3. Prof. Ashvini Chaturvedi – Professor & Head, Dept. of Electronics and Communication Engineering, NITK, Surathkal. Contact: +91-9481271290, Email: [ashvinichaturvedi@nitk.edu.in](mailto:ashvinichaturvedi@nitk.edu.in)

Place: Guntur

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