# CURRICULUM VITAE

#### PROF. RAMESHA C K Professor

Department of Electrical and Electronics Engineering BITS Pilani K.K. Birla Goa Campus NH17B Bypass Road Zuarinagar- 403726 GOA, India.



*E mail*: rameshack@goa.bits-pilani.ac.in URL:<u>http://universe.bits-pilani.ac.in/goa/rameshack/profile</u> Google Scholar Page: https://scholar.google.co.in/citations?user=guTkfgcAAAAJ&hl=en

## **Areas of Research Interest**

Fabrication of Ohmic and Schottky contacts to semiconductor materials like GaN, SiC and their characterization using current-voltage and capacitance-voltage techniques. Other areas of interest are: low power VLSI design, device modeling, solar photo voltaic cell, MEMS devices, Reconfigurable Microstrip Antenna Design, Cognitive Radio.

## **General Information**

Ramesha C K is with the Department of Electrical and Electronics Engineering at Birla Institute of Technology and Science, K.K. Birla Goa Campus, Goa. He is having more than 19 years of research experience and 32 years of teaching experience in the field of Electronics.

Before joining BITS, he served in the department of Electronics at A.V.K. College, Hassan where he was Head of the department from 1996 to 2008. He was actively engaged with the University of Mysore as member of Board of Examination and Board of Studies in setting and review of question papers and new curriculum design. He was served as member of Board of studies of Yuvaraj's College Mysore (2007 - 2008).

### **Personal Information**

- Name : Ramesha C K
- Date of Birth : 11-11- 1967
- Nationality : Indian
- Sex : Male
- Marital Status : Married

### **Address for Correspondence**

Department of Electrical, Electronics and Instrumentation Engineering BITS Pilani K.K. Birla Goa Campus NH17B Bypass Road Zuarinagar- 403726 GOA, India. Email: <u>rameshack@goa.bits-pilani.ac.in</u> URL:<u>http://universe.bits-pilani.ac.in/goa/rameshack/profile</u>

# **Education:**

2003-07:	Ph. D. in Electronics – "Studies on Ohmic and Schottky Contacts to Gallium Nitride", University of Mysore, Mysore.		
	Supervisor: Prof. V Rajagopal Reddy		
1994:	Post-Graduate Diploma in Business Computing: P.G.D.B.C., First Class, University of Mysore, Mysore.		
1990:	M. Sc. in Physics with Electronics as specialization, First Class,		
	Mangalore University, Mangalagangotri, Konaje, Mangalore.		
1988:	B. Sc., Vivekananda College, Puttur, Mangalore University, Mangalore.		

# **Employment Record:**

#### 2018 - till date: Associate Professor, BITS Pilani, K.K. Birla Goa Campus, GOA

### 2008 - 2018: Assistant Professor, BITS Pilani, K.K. Birla Goa Campus, GOA

1996 - 2008: Reader and H.O.D, Department of Electronics, A.V.K. College, Hassan

1990-1996: Lecturer, Department of Electronics, A.V.K. College, Hassan, Karnataka

# **Institutional Contribution:**

- Nucleus Member AUGSD, BITS Pilani K.K. Birla Goa Campus from Feb- 2023.
- Member of Socio-cultural Association.
- Member of Senate:
  - As a member of Senate, actively participated in all the senate meetings/discussions related with students disciplines and department related issues.

# Institution Assignments taken at the Department

- Lab-incharge Analog and Digital Lab
- Member of Departmental Research Committee
- Member of Faculty Recruitment Committee
- Faculty Coordinator EEE association
- Coordinator for ACB faculty mentors
- Coordinator for Intensive Teaching Workshop (TLW)
- Member of Intensive Teaching Workshop (TLW)

#### Member of Research Board:

• As a member of research board, actively participated in the discussion related with parttime and full-time research scholars admission conditions.

# Associate Dean, Student Welfare Division

• Served as Associate Dean, SWD, from 22-12-2016 to 31-12-2021 and was responsible for the overall functioning of the Students Welfare Division.

- Member of Examination Committee.
- Chairman of Standing Committee for Students' Discipline.

# **Chief Warden:**

- Worked as Chief Warden cum Warden with effect from 1-1-2014 to 22-12-2016.
- As warden regular visits to the CH-3 Hostel and feedback from the hostel assistant about any problems in the hostel. If any problems related to the maintenance, refer to the concerned department.
- Budget preparation for the hostel and participated in the budget discussions.
- Procurements of new items for the hostels infrastructure and to the A-Mess and C-Messes.
- As Chief Warden monitor the functioning of 14 Hostels with the help 15 Wardens, two Senior Hostel Superintendents, three Assistant Hostel Superintendents, and 16 Hostel Assistants.
- Regular meetings with Senior Superintendents, Assistant Superintendents, Hostel Assistants, wardens.

#### **Student Festivals:**

- Help and coordinate the student's festivals Waves, Quark and Spree by conducting the meetings regularly and monitoring the financial status from time to time.
- Budget preparation for the 3 festivals.
- Helping the students to prepare the bills and scrutinize them and they passed to finance section for payment.

### **Emergency Situations:**

- Helped the students in case of medical emergency and emergency situations. Coordinating with the campus doctor to give best possible medical help to students in extreme situations. Informing the parents about the time to time condition about the students and taking care until the arrival of the parents.
- Regular follow up of the student's health condition and providing all necessary help from the Institute.

### **Expansion Plan:**

• Part of expansion committee plan attended meetings with Director and contractors for finalize the expansion plan.

### **Convener Disciplinary Committee:**

- Member and Chairman of Disciplinary committee. Coordinating the meeting of students with members of DC committee.
- Conducting the DC meetings whenever students indulge in indiscipline activities and counseling them afterwards.

• Preparation of Minutes of meeting and Recommendations of the Standing Committee for Students' Discipline.

#### Member of Library Committee:

• Member of Library Committee- responsible for recommending the journals and other required books for the EEE/E&I Department.

#### Member of Contract Committee:

• Member of Contract Committee – responsible for renewal and formulating the conditions of the contracts for mess contractors, cafeteria contracts, garden contracts, VGH contracts, security contracts, eco-cleaner contractors etc.

#### **DRC Convener:**

- Short listing of candidates for the Ph.D. interviews.
- Conduction of Ph.D. interviews and preparation of final list.
- DRC convener/Member conducted Ph.D. interviews, Ph.D. qualifying examinations including paper setting and evaluation and viva-voce examinations during both the semester.

#### Member of Research Board:

• As a member of research board, actively participated in the discussion related with parttime and full-time research scholars admission conditions.

# Major Research Projects (Completed as Principal Investigator):

Project Title: "Investigation of Schottky contacts to Silicon Carbide (SiC) using<br/>I-V and C-V techniques''Project Cost Rs: 10,77,800.00Funding Agency : University Grants Commission (UGC) New Delhi<br/>Duration: 3 yearsDate of Implementation: 1-2-2011

# Sponsored Projects ( Completed as Co-PI):

Project Title	: "Development of PCDA-liposome based detection kit for		
	Alzheimer's disease biomarker"		
Project Cost Rs	: 2663200=00		
Funding Agency	: Department of Science and Technology (DST)		
Duration	: 3 years		
Date of Implementa	tion: 22-3-2017		

### Sponsored Projects (Submitted as PI):

Project Title	: "Design and Investigate Temperature Dependent Electrical			
	Characteristics of SiC Schottky Diodes for Space Applications"			
Project Cost Rs	: 24,55,332=00			
Funding Agency Duration	: Department of Science and Technology (DST) : 3 years			

# **Journal Publications:**

- Bhushan V. Kadam, Lucy J. Gudino, Bhushan V. Kadam, Vikas V. Khairnar Ramesha C. K., Joseph X. Rodrigues
  "Energy-Efficient Long-Range Sectored Antenna for Directional Sensor Network Applications"
  IETE Journal of Research, 2023, SCI, Impact Factor: 1.88 DOI: 10.1080/03772063.2023.2233485
- Bhushan V. Kadam, Lucy J. Gudino, Ramesha C. K., Joseph X. Rodrigues "Single Port Multimode Reconfigurable Uwb-Nb Antenna For Cognitive Radio Applications" Journal of Microwaves, Optoelectronics and Electromagnetic Applications 21(4), pp-623-638, 2022. SCI, Impact Factor: 1.06 <u>https://doi.org/10.1590/2179-10742022v21i4264212</u>.
- Bhushan V. Kadam, Lucy J. Gudino, Ramesha C. K., Joseph X. Rodrigues "A Compact Super Wideband Antenna With Controllable Dual Notch Band Capability" International Journal Of Microwave And Optical Technology 17(6), pp 592-603, 2022, Scopus, Impact Factor: 0.394
- S Nagaraju, LJ Gudino,, N Tripathi, V Sreejith, C K Ramesha "Mobility assisted localization for mission critical Wireless Sensor Network applications using hybrid area exploration approach" Journal of King Saud University-Computer and Information Sciences 33 (5), pp 608-618, 2021, SCI, Impact Factor: 8.839
- 19. V V Khairnar, C K Ramesha, L J Gudino,
  "A Parasitic Antenna with Independent Pattern, Beamwidth and Polarization Reconfigurability"
  Wireless Personal Communications 117 (3), 2041-2059, 2021, SCI, Impact Factor=2.017
- 18. Shamanth Nagaraju, Sreejith V., Lucy J. Gudino, Bhushan V. Kadam, Ramesha C. K., Joseph Rodrigues,
  "Hybrid Area Exploration based Mobility-Assisted Localization with Sectored Antenna in Wireless Sensor Networks"
  International Journal of Communication Systems, Wiley 33(4), e4240, 2020, Scopus, CiteScore=3.7
- 17. V. V. Khairnar, B. V. Kadam, C. K. Ramesha, and L. J. Gudino,
  "A reconfigurable microstrip cross parasitic antenna with complete azimuthal beam scanning and tunable beamwidth" International Journal of RF and Microwave Computer-Aided Engineering, 29(1), pp. e21472, 2019, Scopus, CiteScore=3.5
- Shamanth Nagaraju, Lucy J. Gudino, Nikhil Tripathi, Sreejith V., Ramesha C. K., "Mobility Assisted Localization for Mission Critical Wireless Sensor Network Applications using Hybrid Area Exploration Approach" Journal of King Saud University - Computer and Information Sciences, Elsevier, 2018, pp. 1-11, doi: 10.1016/j.jksuci.2018.04.008., SCI, Impact Factor=8.839
- V. V. Khairnar, B. V. Kadam, C. K. Ramesha, and L. J. Gudino, "A reconfigurable parasitic antenna with continuous beam scanning capability in Hplane"

AEU - International Journal of Electronics and Communications, vol. 88, pp. 78-86, 2018, SCI, Impact Factor=3.169

- Rajalekshmi Kishore, Ramesha C.K., Sanjeev Gurugopinath, Anupama K.R.
   "Performance analysis of superior selective reporting-based energy efficient cooperative spectrum sensing in cognitive radio networks" Ad Hoc Networks, Volume 65, 2017, Pages 99-116, ISSN 1570-8705, <u>https://doi.org/10.1016/j.adhoc.2017.07.010.(http://www.sciencedirect.com/science/arti</u> cle/pii/S1570870517301427), SCI, Impact Factor=4.816
- Pravin Mane, Nishil Talati, Ameya Riswadkar, Ramesh Raghu, C.K. Ramesha, "Reconfiguration On Nanocrossbar Using Material Implication" Journal of Sadhana, Academy Proceedings in Engineering Sciences, Springer. DOI . 1007/s12046-016-0582-8, Published online January 11, 2017, SCI, Impact Factor=1.214
- Pradeep Chavan, L.R. Naik, P.B. Belavi, Geeta Chavan, C.K. Ramesha and R.K. Kotnala
   "Studies on Electrical and Magnetic Properties of Mg-Substituted Nickel Ferrites" Journal of Electronic Materials DOI: 10.1007/s11664-016-4886-6, 2016, SCI, Impact Factor=2.047
- A Venkatesan, C K Rameshaand E S Kannan
  "In situ reduced graphene oxide interlayer for improving electrode performance in ZnO nanorods"
  J. Phys. D: Appl. Phys. 49,245301 (7pp), 2016, SCI, Impact Factor=3.409
- Pravin Mane, Nishil Talati, Ameya Riswadkar, Ramesh Raghu, C.K. Ramesha, "Stateful-NOR based reconfigurable architecture for logic implementation" Microelectronics Journal, Volume 46, Issue 6, June 2015, Pages 551-562, ISSN 0026-2692, doi:10.1016/j.mejo.2015.03.021, SCI, Impact Factor=1.992
- C.K. Ramesha , V. Rajagopal Reddy "Influence of annealing temperature on the electrical and structural properties of palladium Schottky contacts on n-type 4H–SiC" Superlattices and Microstructures, 76, pp.55–65, 2014, SCI, Impact Factor=2.658
- Pravin S. Mane, Namita Paul, Nikhilesh Behera, Madankumar Sampath, Ramesha C K "Hybrid CMOS-Memristor Based Configurable Logic Block Design" IEEE International Conference on Electronics and Communication Systems (ICECS'14), (ISBN : 978-1-4799- 2320-5/14, pp. 332-336), 2014.
- Nazneen Fatema Rajani, Rajoshi Biswas, Gaurav Dar, Ramesha C K "Solution to the Tic - Tac - Toe Problem using Hamming Distance approach in a Neural Network" Second International Conference on Intelligent Systems, Modelling and Simulation (IEEE), 978 - 0 - 7695 - 4336 - 9/11, 2011.
- V. Rajagopal Reddy, P. Koteswara Rao and C.K. Ramesh
  "Annealing effects on structural and electrical properties of Ru/Au on n GaN Schottky contacts"
  Materials Science and Engineering: B Volume 137, pp.200 204, 2007, SCI, Impact Factor= 3.407

- C.K. Ramesh , V. Rajagopal Reddy and K.S.R. Koteswara Rao "Effect of annealing temperature on electrical characteristics of ruthenium-based Schottky contacts on -type GaN" Journal of Materials Science: Materials in Electronics Vol.17, pp. 999 – 1004, 2006, SCI, Impact Factor=2.779
- V. Rajagopal Reddy , C.K. Ramesh and Chel Jong Choi
  "Structural and Electrical properties of Mo/n GaN Schottky diodes" Physica Status Solidi (A), Vol. 203 (3), pp. 622 – 627, 2006, SCI, Imapct Factor=1.981
- C.K. Ramesh , V. Rajagopal Reddy and Chel Jong Choi "Electrical characteristics of molybdenum Schottky contacts on n - type GaN" Materials Science & Engineering B, Vol.112 (1) , pp. 30 – 33, 2004, SCI, Impact Factor=3.407
- V. Rajagopal Reddy and C.K. Ramesh "Low - resistance ohmic contacts to n - type GaN using Ti/Al/Re/Au multilayer scheme" Journal of Optoelectronics & Advanced Materials, Vol.6, pp. 177 – 182, 2004, SCI, Impact Factor=0.587
- V. Rajagopal Reddy, C.K. Ramesh and P. Narasimha Reddy "Interfacial reaction and surface morphology of Pd/Re contact schemes to p – GaN" Indian Journal of Pure & Applied Physics, Vol. 42(5), pp. 361 – 365, 2004, SCI, Impact Factor=0.923

#### Papers presented in National/International Conferences:

- Viraj Joshi, Pravin Mane, Ramesha C.K.," Cognitive Approximate Adder Design for Image Processing Applications", IEEE International Conference on Recent Trends in Electronics and Communication (ICRTEC) 0-11 February 2023, <u>10.1109/ICRTEC56977.2023.10111918</u>.
- 29. Viraj Joshi, Pravin Mane, Ramesha C.K., "Energy Efficient Approximate Arithmetic "Circuit Design for Power Hungry Applications", International Conference on Innovation in Technology & Management (ICIEM- 2022),21-23, December 2022.
- Shamanth Nagaraju, Lucy Gudino, Bhushan Kadam, Vikas V Khairnar, Joseph Xavier Rodrigues, CK Ramesha "Rectangular Microstrip Patch Antenna Array Based Sectored Antenna for Directional Wireless Sensor Networks" 12th International Symposium on Communication Systems, Networks and Digital Signal Processing (CSNDSP), IEEE, PP 1-6, 2020.
- VV Khairnar, CK Ramesha, LJ Gudino, "A Survey on Beamwidth Reconfigurable Antennas", International conference on Modelling, Simulation and Intelligent Computing (MoSICom-2020), BITS Pilani, Dubai campus, 26-30 January, 2020.
- 26. Rahul Singh, Akshay Chaturvedi and C K Ramesha

"Health-care Monitoring System - Optical Heart Rate Monitor" 4<sup>th</sup> IEEE International Conference on Recent Advances In Information Technology Indian Institute of Technology (ISM), 15<sup>th</sup> - 17<sup>th</sup> March'18 | Dhanbad, INDIA.

- 25. Rajalekshmi Kishore, Ramesha C. K., Sanjeev Gurugopinath, and Eshaan Sangodkar, "Energy Efficiency Optimization for Superior Selective Reporting-based Spectrum Sensing," 2017 IEEE 28<sup>th</sup> Annual International Symposium on Personal, Indoor, and Mobile Radio Communications (PIMRC), Montreal, Canada, 2017, pp. 1-6.
- 24. Pravin Mane, Sudeep Mishra, Ravish Deliwala, Ramesha C K
  "Adder Implementation in Reconfigurable Resistive Switching Crossbar"
  18th International Symposium on Quality Electronic Design (ISQED 2017), 14-15
  March, 2017, Santa Clara (USA), (ISBN:978-1-5090-5404-6, pp. 403-408)
- 23. B. V. Kadam, L. J. Gudino, C K Ramesha and S. Nagaraju,
  "A Band-notched Ultra-wideband Compact Planar Monopole Antenna With U-shaped Parasitic Element"
  IEEE 6th International Conference on Advances in Computing and Communications Cochin, 2016 .pp. S1877-0509(16)31428-4, doi:10.1016/j.procs.2016.07.188
- 22. Shamanth Nagaraju, Vishwesh Rege, Lucy J. Gudino, Ramesha C. K "Realistic Directional Antenna Suite for Cooja Simulator"
  23rd National Conference on Communications (NCC'17), IIT-Madras, India, Mar. 2017, IEEE, pp. 1-6, doi:10.1109/NCC.2017.8077141.
- V. V. Khairnar, C. K. Ramesha, and L. J. Gudino, "Reconfigurable beam scanning using hexagonal slotted parasitic patch antenna array," IEEE International Conference on Signal Processing andCommunications (SPCOM), Bangalore, India, June 2016, pp. 1-5.
- Vikas V Khairnar, C. K. Ramesha and Lucy J. Gudino

   "A Reconfigurable Microstrip Cross Parasitic Patch Antenna With Two-dimensional Beam Scanning Capability"
   IEEE International Conference on Advanced Networks and Telecommunications Systems (ANTS), Bengaluru, 2016.
- Rajalekshmi Kishore, Ramesha C K, George Joseph and Eshaan Sangodkar "Waveform and Energy Based Dual Stage Sensing Technique for Cognitive Radio using RTL-SDR" Annual IEEE India Conference (INDICON), IISC Bangalore, Dec. 16<sup>th</sup> -18<sup>th</sup>, 2016, pp. 1-6.
- Rajalekshmi Kishore, C.K. Ramesha, K.R. Anupama,-"Bayesian Detector Based Superior Selective Reporting Mechanism for Cooperative Spectrum Sensing in Cognitive Radio Networks" Procedia Computer Science, 6<sup>th</sup> International Conference on Advances in computing & Communication (ICACC), Kochi, Vol 93, 2016, pp. 207-216, ISSN 1877-0509, http://dx.doi.org/10.1016/j.procs.2016.07.202.
- 17. R. Kishore, Ramesha C K and T. Sawant,

"Superior Selective Reporting mechanism for cooperative spectrum sensing in cognitive radio networks"

International Conference on Wireless Communications Signal Processing and Networking (WiSPNET), Chennai, 2016, pp. 426-431.

- P. Mane, N. Talati, A. Riswadkar, B. Jasani and C. K. Ramesha,
  "Implementation of NOR Logic Based on Material Implication on CMOL FPGA Architecture"
  28th International Conference on VLSI Design, Bangalore, pp. 523-528, 2015. doi:10.1109/VLSID.2015.94
- M. Sampath, P. S. Mane and C. K. Ramesha, "Hybrid CMOS-memristor based FPGA architecture", International Conference on VLSI Systems, Architecture, Technology and Applications (VLSI-SATA), Bangalore, pp. 1-6, 2015. doi:10.1109/VLSI-SATA.2015.7050461
- P. Mane, N. Talati, A. Riswadkar, R. Raghu and C. K. Ramesha, "Implicating logic functions with memristors", International SoC Design Conference (ISOCC), Jeju, pp. 232-233, 2014. doi:10.1109/ISOCC.2014.7087622
- R. Kishore, C. K. Ramesha, V. Sharma and R. Joshi, "Performance evaluation of energy based spectrum sensing in multipath fading channel for cognitive radio system", *IEEE National Conference on Communication, Signal Processing and Networking* (NCCSN), Palakkad, Oct.10 2014, pp. 1-6. doi: 10.1109/NCCSN.
- C.K. Ramesha, V. Rajagopal Reddy "Schottky Barrier Parameters of Palladium Schottky Contacts on n-type 4H-SiC" Indo-UK International Workshop on Advanced Materials and their Applications in Nanotechnology (AMAN 2014), 17-19 May 2014, BITS Pilani KK Birla Goa campus.
- Pravin S. Mane, Namita Paul, Nikhilesh Behera, Madankumar Sampath, C. K. Ramesha "Hybrid CMOS – Memristor Based Configurable Logic Block Design" International Conference on Computer Communication and Informatics (ICCCI -2014), Jan. 03 – 05, 2014, Coimbatore, INDIA.
- C.K.Ramesha , M. Ravinandan, P. Koteswara Raoand V. Rajagopal Reddy "Annealing effect on structural and electrical properties of Cu/Au/n - GaN Schottky diode", National Conference on Advanced Materials, Devices and Technologies, Feb 20 -22 (2008), S.V. University, Tirupati.
- P.Koteswara Rao, C.K. Ramesh, N. Ramesha Reddy and V. Rajagopal Reddy "Electrical characteristics of Cu/Au Schottky contacts on n - type GaN" 2<sup>nd</sup> national Conference on Condensed Matter and Materials Physics, Feb.1 - 3 (2007), University of Rajastan, Jaipur.
- C.K. Ramesh , P.Koteswara Ra o and V. Rajagopal Reddy "Schottky barrier parameters of ruthenium contacts on n - type GaN" Solid State Physics Symposium, Dec. 26 - 30 (2006), Barkatullah University, Bhopal.
- C.K. Ramesh and V. Rajagopal Reddy "Electrical characterization of Ru/Au Schottky barriers on n - type GaN"

International Conference on Photonics 2006, Dec 13 - 16 2006, University of Hederabad, Hyderabad.

- C.K. Ramesh and V. Rajagopal Reddy "Electrical characteristics of Ru/n - GaN Schottky diodes" National Conference on Novel Materials and Technologies, Feb. 17 - 18 (2006), S.V.University, Tirupati.
- C. K. Ramesh and V. Rajagopal Reddy "Thermal annealing behaviour of Mo Schottky Contacts on n - type GaN" Solid State Physics Symposium, Dec. 26 - 30 (2005), BARC, Mumbai.
- C.K. Ramesh and V. Rajagopal Reddy "Thermally stable low - resistance Pd/Re and Pt/Re/Au ohmic contacts to p - type GaN" National Conference on Advanced Materials and Technology, Dec. (2004), Dept. of Physics & Electronics, DAV College, Amritsar.
- P.N. Reddy, C.K. Ramesh and V. Rajagopal Reddy "Investigation of Molybdenum Schottky contacts on n - type GaN" International workshop on Nitride Semiconductors, July 19 - 23 (2004), Pittsburg, USA
- C.K. Ramesh and V. Rajag opal Reddy "Investigation of Ohmic Mechanism for Ti/Al/Re/Au contacts to n - type GaN" National Conference on Emerging Materials and Technologies, Aug. 3 - 4 (2004), S.V. University, Tirupati
- V. Rajagopal Reddy, C.K. Ramesh, S.V. Reddy and P.N. Reddy "Optical properties of gallium nitride" National conference on Recent trends in Optoelectronic Materials and Devices, Nov. 21-22 (2002), S.V. University, Tirupati.

#### Conferences/workshops/ symposia/seminars attended in National/International:

- National Workshop on Neutron Production using Accelerators and Applications, Mangalore University, Konaje, Mangalore, March-27, 2004.
- UGC sponsored 3-day workshop on "Recent trends in Teaching-Learning Physics and Electronics", Maharani's Science College Mysore, July 19-21, 2004.
- 6-day workshop on "Maintenance and Repairs of Electronic Laboratory Instruments", D.M.'s College of Arts, Science and Commerce, Assagao, Bardez, Goa, November 22-27, 2004.
- 2-days workshop "2<sup>nd</sup> INUP Workshop on Nanofabrication Technologies", IIT Bombay, 30-31 May, 2009.
- 10 days INUP Hand-on Training on "Nanofabrication Technologies" IISc Bangalore, 26<sup>th</sup> November to 5<sup>th</sup> December, 2012.
- 2- days Workshop on Electron and Ion Beam Lithography for Nanotechnology, IISc Bangalore, December 3-4, 2012.

- 6 day short term course on Semiconductor Manufacturing and Technology at IIT Mumbai from 10 -15<sup>th</sup> December 2013.
- One Week National Training Programme on Wireless Sensor Networks at IIT Dhanbad from 18–22 December, 2017.

# **Books Published:**

Adapted Indian edition of the book Microelectronics by Behzad Razavi (Wiley India Ltd). https://www.wileyindia.com/microelectronics-an-indian-adaptation.html

#### Ph.D. students supervised

- Dr. Pravin Sakharam Mane (2009PHXF420G)
   Title of the Thesis: Reconfigurable Architecture in Resistive Switching Crossbar (Working as Assistant Professor, EEE Dept, BITS Pilani K.K Birla Goa Campus).
- Dr. Rajalekshmi Kishore (2012PHXP401G)
   Title of the Thesis: Performance Analysis of Energy Efficient Spectrum Sensing Techniques in Cognitive Radio Networks ((Working as Associate Professor, ECE Dept, National Institute of Engineering, MYSORE).
- 3. Dr. Shamanth N (2011PHXP405G)

Title of the Thesis: Design and Development of Sectored Antenna and Energy Efficient Cross-Layer Protocol for Directional Wireless Sensor Networks (Working as Assistant Professor, School of Engineering and Technology, Christ University, Bangalore).

4. Dr. Khairnar Vikas Vishnu (2013PHXF409G)

Title of the Thesis: Design and Development of Pattern and Polarization Reconfigurable Microstrip Antenna (Working as Assistant Professor- Sr, VIT-AP University, Amaravati, Andhra Pradesh)

5. Mr. Kadam Bhushan Vinayak (2013PHXF010G) (Thesis Submitted- Jan-2023)

# ME Research Practice (RP) Supervised

- 1. Physics, Simulation and Modeling of Nanoscale Devices, Devesh Chandra, 2012
- 2. Nanoelectronics, Prateek Bindra, 2012.
- 3. Schottky diodes and MOS capacitors based on SiC, Pradeep Joy, 2013.
- 4. Schottky contacts to SiC, Neha Pachauri, 2013.
- 5. Design of a SAR control logic, Switches and Delay elements for a 12 bit SAR A/D Converter and Schematic level simulation of SAR ADC, Gite Snehal Pandharinath, 2016.
- 6. Design of Comparator, Capacitor array (DAC and S/H) and bootstrap switches in SAR ADC, Seetha Lakshmi, 2016.
- 7. Design and analysis of efficient phase locked loop, Sahithi Paleti, 2016.
- 8. Error Tolerant Multiplier, Lavish Patidar, 2019.
- 9. Design of Low power High Speed Error Tolerant Adders, Jaiswal Akshaykumar Satish, 2019.
- 10. Highly Accurate Approximate Multipliers and Adders with Error Correction, Animesh Misra, 2019.
- 11. Design of Approximate Radix-4 Booth Multipliers, Sharma Keshav Dineshprasad.
- 12. High Performance Low Power Carry Speculative Addition with Variable Latency, Piysuh, Parashar, 2019.
- 13. Multipliers with Approximate Compressors, Raghav Mishra, 2019.
- 14. Design of Parameterized Low Power High Performance Approximate Multipliers, Narendra Shrikant Tiwari, 2019.

- 15. A Comparative Study of Parallel Prefix Adders, Ashish Kushwaha, 2020.
- 16. LOW POWER & AREA EFFICIENT VLSI DESIGN, Deepika Kumari, 2020.
- 17. Area Efficient Braun Multiplier using Parallel Prefix Adder, Shinde Priyanka Bharat, 2020.
- 18. A Comparative Study of Parallel Prefix Adders For Fastest Response, Ashish Kushwaha, 2020.
- 19. Scaling of Stack Effect and its Application for Leakage Reduction, G. Rakshith Kumar, 2020.
- 20. ASIC DESIGN OF AREA AND POWER EFFICIENT APPROXIMATE BOOTH MULTIPLIER, Kakumani Nagasai Preetham Reddy, 2020.
- 21. High Performance Approximate Multiplier for Error Tolerant Applications, B. Lekha Reddy, 2020.
- 22. Design and Analysis of Multiplier using Booth's Encoding Algorithm, Alay Shah, 2021.
- 23. Floating Point Multiplier For High-Speed Application, RAJVIR PRIYANK YOGESHBHAI, 2021.
- 24. DESIGN AND IMPLEMENTATION OF MULTIPLY ACCUMULATE (MAC) UNIT, Swayansu Satyaprajna Nayak, 2021.

Sl_No	Student Name	Student I.D	Title of the Project
1	Nihanth	2012A3TS151G	A Study of Engineering
	Subramanya		Practices in the Development of
			a Modern Web Browser
2	Sumukh	2012A3PS152G	Opto Electrical Characterisation of
	RamPrasad		Multicrystalline Wafer Solar Cells
3	Sebastin	2015A8TS0357G	Real Time Obstacle Avoidance and
	Santy		Doorway Navigation using Monocular
			Camera on a low computational mobile
			robot
4	Jaychandran	2014B5A30401G	Surface effects in interactingWeyl
	Padayasi		Semimetals
5	Shashwat	2017A8PS0488G	Data Acquistion System for Compact
	Kakkad		Cosmic Muon Tracker
6	RISHABH	2019A8TS1021G	Signal and Power Integrity Analysis for
	ANIL KESTE		Integrated Circuit Package Design

#### **BE Thesis Supervised**

## WILP Thesis:

Sl_No	Student Name	Student I.D	Title of the Project
1	Anuj Nagar	2018HT80028	Design and Implementation of low power
			wide common mode voltage range
			comparator for receiver application.
2	Denny VV	2018HT80008	Hardware design and development for
			'Closed Cell Proliferation Device
3	Shivam	2018HT80027	Implementation Of Error Detector For
	Goel		Concurrent Testing Of Multi-Lane For
			1GBPS Serdes
4	Athuldeep N	2019HT01503	Enabling Register Access/ Debug Tool for
			Latest Generation of Server Processor
5	Akshay G Bhat	2019HT80568	Serial Peripheral Interface based Sensor
			Control Unit Software reflashing
6	AJISHA	2019HT80566	Solving Challenges with 3D IC test and
	SAJEEV		scan

## **BE Projects Supervised**

- 1. Implementation of Dual V<sub>T</sub> dynamic CMOS circuits, Sreesan V, 2009.
- 2. PC based oscilloscope, Adity Agrawal, 2009.
- 3. Speech recognition using MATLAB, Karthik M, 2009.
- 4. Reconstruction of torn-up documents using image processing, M. Alekhya, 2009.
- 5. Fingerprint recognition and authentication, Abhay Ashok Patil, 2010.
- 6. Microcontroller based power dissipation analysis and characterization in a circuit through infrared imaging, Amrit Devasish Moharana, 2010.
- 7. Omptimization of filter coefficients using genetic algorithms, Nihar Joshi, 2010.
- 8. Implementation of 2x2 OFDM-MIMO system using MATLAB, Thirumalesh K C, 2010.
- 9. Complete design and verification of UART protocol, V Sandeep and T S S Rohith, 2010.
- 10. Microcontroller based Solar charger, Madhura Kamat and Sindhura Malireddy, 2010.
- 11. Ultrasound guided Autonomous Robot Navigation, K Arvind, 2010.
- 12. Design of RISC Processor using Verilog, P Sree Neethika Reddy, 2011.
- 13. Synthesis, Implementation and Analysis of varios Pass Transistor logic circuits and current mirror circuits, V Bhavyashree and N Mahita, 2011.
- 14. Study of organic optoelectronic devices- OLEDs, Vikas Chauhan, 2011.
- 15. Character Recognition on a touch screen using PSoC-1, Saksham Bhatla, 2012.
- 16. Active noise cancellation in headphones, Amrita M, 2012.
- 17. Study of MOS Capacitors and its application, Pebbati Abhimanyu Reddy, 2013.
- 18. Semiconductor Photovoltaic cells, M Omprakash Reddy, 2013.
- 19. Schottky contacts to Silicon Carbide, Vamsi Reddy, 2013.
- 20. Wide Bandgap Semiconductor devices and Their Applications, Bhogate Parth Prashant, 2014.
- 21. Leakage Current Mechanisms and leakage current reduction techniques in deep submicron MOSFETs, Shreyash Sill, 2014.
- 22. I-V Characterisation of semiconductor Devices, Akkineni Sri Sai Venkat, 2014.
- 23. The applications of Graphene in Opto-electronic devices, Modak Chaitanya Yashwant, 2014.
- 24. Study of Spectrum sensing technique for cognitive radio, Viren Sharma, 2014.
- 25. Study of Spectrum sensing technique for cognitive radio, Ms. Roopal Joshi, 2014.

- 26. Heart Rate Monitor using Optical method, Akshay Chaturvedi, 2015
- 27. Heart Rate Monitor using Optical method, Rahul Singh, 2015
- 28. Graphene Properties and Applications, Rishabh Anil Keste, 2021
- 29. Design of ALU Circuits, Svadhi Jain, 2019A8PS0573G, 2022.
- 30. Digital Multipliers, SAKSHAM SHIVSHANKAR KAMATH, 2022.
- 31. Optimum ALU performance using different adders, Mansi Doshi, 2022.
- 32. Design and Optimization of ALU, Ashlesha Jagdal, 2022.
- 33. Optimum Design of a 16 bit ALU, Ashita Bhardwaj, 2022.
- 34. CMOS Image Sensors, ABHISHEK JASWAL, 2022.
- 35. Cognitive Radio and its Applications, Srivathsa, 2022.

### **Courses Taught**

### First Degree (B.E.) Courses

- 1. Communication Systems
- 2. Analog Electronics
- 3. Electrical Sciences-1
- 4. Electronic Devices and Integrated Circuits
- 5. Digital Electronics and Computer Organisation
- 6. Microelectronic Circuits
- 7. Electrical Sciences
- 8. Digital Design

# Higher Degree (M.E. in Microelectronics) Courses Taught

- 1. IC Fabrication Technology
- 2. Physics and Modeling of Microelectronic Devices
- 3. Analog IC Design
- 4. VLSI Test and Testability