Department of Electronics Engineering, SVNIT, Surat

Research Area of Faculty Members for Ph.D. Admission: December 2022

Sr. No.	Name of Faculty Member	Research Area in which FIR is intended to be taken
1.	Dr. P. N. Patel	1. Metamaterial based Antenna Design 2. Wearable/ E-Textile Antenna Design 3. RF and Optical Sensors/BioSensors 4. Visible Light Communication 5. LiFi Systems 6. Optical Communication & Networks 7. Photonic Devices
2.	Dr. (Mrs.) U. D. Dalal	1. Wireless- Communication Technology 2. 5G Networks 3. Signal Processing 4. AI 5. Healthcare IoT/IoT
3.	Dr. P. K. Shah	1. Signal and Image Processing 2. Neural Networks and Deep Learning 3. Application of Adaptive Filter and Control Theory 4. Estimation and Detection Theory 5. Nonlinear Control Systems and Lyapunov Instability
4.	Dr. J. N. Sarvaiya	1. Biomedical Instrumentation 2. Signal and Image Processing
5.	Dr. A. D. Darji	1. Bio MEMS 2. DSP VLSI Architecture 3. Bio Medical Instrumentation 4. VLSI Design 5. FPGA Based System Design 6. VLSI Architecture for Machine Learning
6.	Dr. Z. M. Patel	1. RISC-V and SoC Design 2. Low Power VLSI for Wireless PHY Baseband 3. Analog IC Design 4. High Performance Embedded Systems
7.	Dr. P. J. Engineer	1. Edge Computing 2. Application Specific Processor Design 3. Energy-Efficient Computing 4. VLSI Architecture for Real-Time Signal/Image Processing/IoT/Deep Learning 5. Software Defined Networking
8.	Dr. (Mrs.) R. N. Dhavse	1. ADC Design for Biomedical Applications 2. Design, Simulation and Fabrication of Novel Semiconductor Devices 3. Paper and Pencil based Sensor Development 4. Digital VLSI Design
9.	Dr. Abhilash Mandloi	1. Optical Communications 2. Optical Networks 3. Free Space Optics 4. Machine Learning for Optical Communication Systems 5. Li-Fi Systems
10.	Dr. (Mrs.) J. N. Patel	1. Signal Processing 2. Communication 3. Image Coding

11.	Dr. (Mrs.) S. Gupta	1. Antenna Design for 5G Application 2. Adaptive Interference Mitigation System for NAVIC Receiver 3. mm Wave / Massive MIMO System for 5G 4. Vehicular Technology 5. SDR based Systems 6. Machine Learning and Signal Processing for wireless Communication 7. Free Space Optics
12.	Dr. (Mrs.) S. N. Shah	1. NavIC/IRNSS Based System and Research 2. Jamming, Spoofing Detection and Mitigation 3. Precise Point Positioning 4. 5G Technology, MIMO technology 5. Software-Defined Radio-based Wireless Communication 6. Object Detection and Mapping 7. Drone, smart farming 8. 5G and VR/AR
13.	Dr. K. P. Upla	1. Computer Vision and Image Processing
14.	Dr. Kirti Inamdar	1. Fractal Metamaterial based Wearable Antenna 2. Agricultural Waste based Microwave Absorbers 3. Development of RF Active and Passive Devices 4. Machine Learning in Antenna Designing 5. RF Energy Harvesting 6. Development of RF front-end receiver system for GNSS application 7. Development of RF front-end receiver system at 28 GHz for 5G application 8. Graphene-based antenna design 9. Development of EMI shields using agricultural waste.
15.	Dr. Deepak Joshi	1. AI/ML Based VLSI Circuit Optimization / Design 2. Development of Analog Circuit Optimization Framework based on Metaheuristics
16.	Dr. Kamal Captain	1. Cognitive Radio 2. Machine Learning for Wireless Communication 3. Signal Processing
17.	Dr. Suman Deb	1. Speech Processing 2. Speech based Disease Diagnosis 3. Emotion Analysis from speech and image 4. Biomedical Signal Processing 5. Signal processing and machine learning
18.	Dr. Abhishek Acharya	1. Device-Circuit Interactions in Nanoscale Transistors 2. Physics & Modelling of Nanoscale Devices 3. Reliability of Semiconductor Devices/Circuits 4. Emerging Memory Technologies
19.	Dr. Vivek Garg	1. Optoelectronic Devices (Photovoltaics, Photodetectors) 2. Quantum Technology (Imaging, Sensing and Communication) 3. Energy Storage Devices (Supercapacitors and Fuel Cells) 4. Modelling of Nanoscale Devices, Atomistic Simulations
20.	Dr. Nithin Chatterji	1. Device Simulation and Modelling, Semiconductor Device Physics 2. Solar Photovoltaics
21.	Dr. Shivendra Yadav	1. Modeling and Simulation of Micro Nano Semiconductor Devices 2. Application and Design of Nano Devices for Biomedical Applications 3. Modeling and Simulation of Negative Capacitance 4. Atomistic simulation of 2D materials 5. Solar Photovoltaic and energy harvesting.

22.	Dr. Raghavendra Pal	1. Vehicular Ad Hoc Networks 2. Machine Learning for Wireless Communication 3. Cognitive Radio Ad Hoc Networks 4. Internet of Vehicles 5. Medium Access Control in Wireless Ad Hoc Networks 6. 5G Internet of Things 7. 5G Vehicle to Everything Communications (5G-V2X) 8. Industrial Internet of Things (IIoT)
23.	Dr. Suresh Dahiya	1. **Wireless Communications:** Physical layer, Channel modeling, MIMO/Massive MIMO, SDR, etc. 2. **Satellite based Navigation:** Baseband signal processing for GNSS, anti-jamming, anti-spoofing, NavIC-RS/BOC signals, attitude determination of vehicles, low complexity acquisition algorithms, CNR improvement, etc. 3. **IoT Infrastructure:** Intelligent transportation systems, smart metering, smart farming, smart e-vehicle charging infrastructure, etc.