

Office of the Dean (Research and Consultancy)  
S V National Institute of Technology, Surat

**Database of SVNIT Faculty Members: Research Specializations and Expertise**

Department of Electrical Engineering			
Sr no	Name of the faculty member	Research Specialization to be displayed on the R&C website.	Any specific interesting research problems that the faculty member is working or intends to work upon
1.	S.N.Sharma	Mathematical control theory Dynamical systems Stochastic processes Stochastic filtering, Algebra stochastic differential equations	<ul style="list-style-type: none"> <li>• Unresolved nonlinear control problems.</li> <li>• Applications of methods of systems theory and control.</li> <li>• Contemplating classical control results and their significance for today's research.</li> </ul>
2.	A.Chowdhury	Electrical Machines Drives Power system	<ul style="list-style-type: none"> <li>• Design of Impedance source converters for Renewable energy and Electrical vehicle</li> <li>• Design of Special Machines, Design of Machines for Renewable Energy and Electrical Vehicle,</li> <li>• AI/ML applications to condition monitoring of Electrical Machines</li> </ul>
3.	A.K.Panchal	Si nanostructures for improving efficiency of Si based solar cell technology thin film optical structural and electrical characterization Comparision studies of different solar PV technologies	<ul style="list-style-type: none"> <li>• I Would like to work on the design and development of photovoltaic-battery charging systems and its control for fast energy transfer for EV charging stations.</li> </ul>
4.	V.A.Shah	Power Electronics & its applications Power system Hybride Electric Vehicles Micro controller & its applications	<ul style="list-style-type: none"> <li>• Design, control and energy management of battery supercapacitor hybrid power source for electric vehicles</li> <li>• Modelling of Energy storage devices.</li> <li>• Fault tolerance mode operation of multiphase induction machine</li> <li>• Regenerative Braking of Induction Motor.</li> <li>• Fast battery charging station design and control with a solar based reserve energy storage system.</li> <li>• Impact analysis of EV on Power Grid</li> </ul>
5.	P.Kundu	Application of Digital Signal Processing in High Voltage Engineering Partial Discharge and Condition Monitoring Electromagnetic Field Computation using Finite Element Method	<ul style="list-style-type: none"> <li>• High voltage testing and diagnosis of electrical equipments, High voltage laboratory design,</li> <li>• Development of insulation systems.</li> </ul>
6.	V.Mahajan	Power system stability, FACTS devices	<ul style="list-style-type: none"> <li>• Artificial intelligence, Cyber security of Smart grid, machine/deep learning for smart grid, Artificial neural network, fuzzy logic, cyber security related encryption/decryption, Restructuring and deregulation, renewable energy sources and its role in smart grid, power system operation and planning, reliability engineering, power system reliability evaluation,</li> </ul>
7.	H.G.Patel	Control systems Automation Stochastic process	<ul style="list-style-type: none"> <li>• Design of Industrial Automation System with PLC, SCADA and/or Industrial Drive. Design of Control and Power circuits for ETP, STP or any Industrial plant.</li> </ul>
8.	Rakesh Maurya	Multi-phase Induction Motor Drive, High Power Factor Converters, Power converters for EV battery charging, Resonant DC-DC Converters, Custom Power Devices, Power Converters for Power Quality Improvement	<ul style="list-style-type: none"> <li>• Green Electric Battery Charging Solutions with features of reduced power density.</li> </ul>

9.	S.R.Arya	Custom Power Devices and its Application, Power Electronic Converters for high performance system, Electric Vehicles Technology, Control of Electric Drives system, DC/DC Converters and Soft Switching Technique, Power Quality and Optimization Algorithms, Soft Computing and Adaptive Algorithms, Distributed Power Generation System and Smart Grid Technology.	<ul style="list-style-type: none"> <li>• Power quality: Custom power devices and its control</li> <li>• Hybrid renewable energy system specially Solar and wind under microgrid concept</li> <li>• Design and application of multi port output converters</li> <li>• Solar Powered Electric Rickshaw</li> <li>• Battery charging and drives control</li> </ul>
10.	Mahesh Aeidapu	Power Electronics Hybrid Renewable Energy Systems Optimization	<ul style="list-style-type: none"> <li>• Grid integration of renewable energy systems</li> <li>• 2. Development of novel meta-heuristic optimization techniques</li> <li>• 3. Optimal sizing and energy management strategies for hybrid renewable energy systems.</li> </ul>
11.	S. Tolani	Digital Control of Power Electronic Converters Microgrid and Power Quality Electric Drives	<ul style="list-style-type: none"> <li>• Low-Cost Digital Control of Power Electronic Converters</li> <li>• Design and Control of Isolated Bidirectional Battery Chargers for EV and SST Applications</li> <li>• Multi-phase DC-DC Converters for Automotive Applications</li> </ul>
12.	R. Radhakrishnan	state estimation, Nonlinear filtering, Target tracking	<ul style="list-style-type: none"> <li>• Application of state estimation algorithms in process monitoring and control</li> </ul>
13.	Kunisetti. V. Praveen Kumar	Power Electronics, Electrical Drives, Multi-level inverters and Application of Renewable energy to Electrical Drives	<ul style="list-style-type: none"> <li>• Multi-level inverters, Grid Tied converters,</li> <li>• Open ended induction motor drives, Electric drives for vehicular applications</li> </ul>
14.	Gangireddy Sushnigdha	Control systems, Optimal control theory, Meta heuristic algorithms	<ul style="list-style-type: none"> <li>• Application of optimal control theory, Development of novel evolutionary optimization techniques,</li> <li>• Development of path planning algorithms and AI based control schemes</li> </ul>
15.	J. Venkataramanaiah	Advanced Switching Techniques, Multilevel Inverters, FACTS Devices, Grid Tie Inverters, High power Converters	<ul style="list-style-type: none"> <li>• Advanced converters with reduced part count,</li> <li>• Fuzzy and Neural network based switching algorithms for Multilevel Inverters and MLI for polyphase applications.</li> </ul>