



## Sanjay Tolani

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### OBJECTIVE

To contribute in the field of Power Electronics for Renewable Energy, Drives and Energy Storage applications.

### EDUCATION

Degree	Institute	CGPA/Percentage	Year
Ph.D. (Power Electronics)	Indian Institute of Technology Kanpur	8.0	2019
M.Tech. (Machines & Drives)	Indian Institute of Technology (BHU) Varanasi	8.4	2010
B.E. (Electrical Engineering)	Government Engineering College Bikaner	69.1%	2008

### EXPERIENCE

- Sardar Vallabhbhai National Institute of Technology Surat** *Oct 2019 - till date*  
Assistant Professor
- Adani University, Ahmedabad** *May 2018 - Sept 2019*  
Assistant Professor
- PSIT Kanpur** *May 2010 - April 2011*  
Assistant Professor

### SPONSORED RESEARCH PROJECTS

No.	Title	Funding Agency	Amount (Lakhs)	Duration	Role
1	Design and Development of Smart BMS with Cell Surface Temperature Estimation	DST, Govt. of India	62.9	2023-2026	CO-PI
2	FIST Grant - To advance Renewable Energy Laboratory at DoEE, SVNIT Surat	DST, Govt. of India	88	2023-2028	CO-PI
3	Development of a Versatile Battery Charger for EVs with Reduced Sensor Count	SVNIT Surat	10	2020-2022	PI
4	Optimizing and Saving Energy with Management	SSIP 2.0, Gujarat Government	0.85	2022-2023	Mentor
<b>Total Sanctioned Amount</b>			<b>Rs. 1.61 Cr</b>		

### CONSULTANCY PROJECTS

No.	Title/Detail	Funding Agency	Amount (Lakhs)	Duration
1	Consultancy Service regarding Structural Proof and Electrical Checking for Solar PV System on BRTS route from Y-junction (Dumas Road) to VNSGU Gate in Surat	M/S Computer Shop, Athwalines, Surat	7	Dec 2021- June 2023
2	Consultancy Services for Feasibility Study of Solar Power Plant Installation on Two Routes in Surat	Surat Municipal Corporation (SMC), Surat	1.69	Mar 2022 - July 2022
3	TPI work for SITC of 50 Nos. of Public EV Public Charging Stations at Various Locations in Surat City	Surat Municipal Corporation (SMC), Surat	1.72	Aug 2022 - July 2023
4	Consultancy work for Tender Preparation, Bids Evaluation and Recommendation of Appropriate Bidder for 4 MW Solar Power Plant in Surat BRTS Route	Surat Municipal Corporation (SMC), Surat	1.69	July 2022 - July 2023
<b>Total Amount</b>			<b>12 Lakhs</b>	

## SUPERVISION OF PG STUDENTS

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• **Master Dissertations:** 10 (08 Completed, 02 Ongoing)

• **List of Ph.D. Students**

No.	Title of Ph.D Thesis	Name of Student	Status
1	Active Power Decoupled Single-Phase Grid-tied Inverters	Praful P. Kumbhare	Ongoing
2	High-Transformation Ratio Power Converters for Renewable Applications	Amit Pratap Singh	Ongoing
3	Temperature-dependent Battery Modeling and SoC Estimation Algorithms	Santosh Kakad	Ongoing

## SHORT-TERM TRAINING PROGRAMS ORGANIZED AT SVNIT SURAT

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1. Embedded C for Arm Cortex M4 Microcontrollers, during Sept 25-29, 2021.
2. Power Converters in Renewable Source Integration: Fundamentals to Implementation, during Aug 21-30, 2021.
3. Power Electronics for Electric Vehicles and Energy Systems, during Sept 29 - Oct 03, 2020.
4. Applications of Power Electronic Converters for Sustainable Living, during Sept 18 - 22, 2020.

## ADMINISTRATIVE CONTRIBUTIONS

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### Institutional Activities

1. Member, Horticulture and Gardening Committee, Dec 2022 - till date.
2. Co-chairman, Institute Magazine Committee (including RENESA), Oct 2021 - till date.
3. Member, Institute level Committee for India's G20 Summit, Jan 2023- till date.
4. Departmental Coordinator, Training & Placement Cell, Feb 2020 - July 2022.

### Departmental Activities

1. Faculty Advisor, B.Tech. 3<sup>rd</sup> Year, Aug 2022-till date.
2. Laboratory in-charge, Renewable Energy Lab, March 2020 - till date.
3. Coordinator, Department Maintenance Committee, June 2020 - till date.
4. Member Secretary, Department Library Committee, March 2020 - April 2023.

## PUBLICATIONS

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### SCI Journals

1. Amit P. Singh, **S. Tolani**, "A Voltage-Lift based High Gain DC-DC Converter with Low Input Current Ripple," *Int. Journal of Circuit Theory & Applications*, July 2023, doi:10.1002/cta.3748.
2. S. Joshi, **S. Tolani**, P. Sensarma, "Hybrid Controller for Mid-Range Mid-Power Audio Application," *ISA Transactions*, vol. 137, April 2023.
3. **S. Tolani**, V. Gautam and P. Sensarma, "Improved Selective Frequency Active Damping for Voltage Source Inverter With Output LC Filter," *IEEE Transactions on Industry Applications*, vol. 56, Sept.-Oct. 2020.
4. **S. Tolani**, S. Joshi and P. Sensarma, "Dual Loop Digital Control of Three-Phase Power Supply Unit with Reduced Sensor Count," *IEEE Transactions on Industry Applications*, vol. 01, Jan. 2018.
5. **S. Tolani** and P. Sensarma, "An Instantaneous Average Current Sharing Scheme for Parallel UPS Modules," *IEEE Transactions on Industrial Electronics*, vol.64, Dec. 2017.
6. **S. Tolani** and P. Sensarma, "Extended Bandwidth Instantaneous Current Sharing Scheme for Parallel UPS Systems," *IEEE Transactions on Power Electronics*, vol. 32, June 2017.

### IEEE Conferences

1. P. P. Kumbhare, **S. Tolani**, S Halder, "Resonance Damping in Active Power Decoupled Single-Phase Grid-tied Differential Buck Inverter," *IEEE IC2E3 2023*, NIT Uttarakhand, India.
2. U Sudheer K, K Bhuvir, S Halder, **S. Tolani**, S Bhattacharjee and A Panda, "Performance Analysis of GaN Inverter fed Electric Traction Drive System for EV Application," *IEEE IC2E3 2023*, NIT Uttarakhand, India.
3. S. Mazumder, **S. Tolani** and S. Joshi, "Low-Cost Single-Sensor Current Sharing Scheme for Two-Phase DC-DC Boost Converter," *IEEE PIICON 2022*, New Delhi, India.
4. N. Mishra, P. P. Kumbhare and **S. Tolani**, "An Investigation on Two-Stage Grid-Tied PV Inverter with Reduced DC-Link Capacitance," *IEEE PIICON 2022*, New Delhi, India.

5. **S. Tolani**, V.Gautam and P. Sensarma, "Improved selective frequency active damping for voltage source inverter with output LC filter," *IEEE PEDES* 2018, IIT Madras.
6. V.Gautam, **S. Tolani** and P. Sensarma, "Design and comparison of enhanced voltage gain active clamped flyback," *IEEE PEDES* 2018, IIT Madras. Converters
7. **S. Tolani**, S. Joshi and P. Sensarma, "Dual loop digital control of UPS inverter with reduced sensor count," *IEEE PEDES* 2016, Trivandrum.
8. S. Joshi, **S. Tolani** and P. Sensarma, "Design of an analog sliding mode controlled audio amplifier," *IEEE PEDES* 2016, Trivandrum.
9. **S. Tolani** and P. Sensarma, "Output impedance mitigation at filter resonance for single and three-phase UPS systems with reduced sensor count," *IEEE IECON*, 2015, Yokohama, Japan.
10. **S. Tolani**, T. S. Sasmal and P. Sensarma, "Low-cost digital realization of phase synchronization for grid tied micro inverter," *IEEE ECCE* 2015, Montreal, QC.
11. **S. Tolani** and P. Sensarma, "An improved droop controller for parallel operation of single-phase inverters using R-C output impedance," *IEEE PEDES* 2012, Bengaluru.