SARDAR VALLABHBHAI NATIONAL INSTITUTE OF TECHNOLOGY, SURAT-395007

(DEPARTMENT OF ELECTRICAL ENGINEERING)

1 **Name** **DR. SABHA RAJ ARYA**

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4 **Date of birth** **03/10/1979**

5 **Research Area**

- **Power Quality - Custom Power Devices**
- **Power Electronic Converters for Power factor corrections**
- **Electric Vehicles Technology**
- **Optimization Algorithms**
- **Induction Motor and Synchronous Motor Drives**
- **DC/DC Converters and Soft Switching Techniques**
- **Application of PLLs, Soft Computing and Adaptive Algorithms**
- **Distributed Power Generation and Smart Grid Technology**

6 **Academic Qualifications**

Degree	Year	Specialization	Name of Board/Institute
10th Class	1994	-	M.P. Boards (I st Rank in School)
B. E./B. Tech.	2002	Electrical Engineering	Govt. Engg. College Jabalpur (M.P.)
M.E./M. Tech.	2004	Power Electronics and ASIC design	MNNIT Allahabad
Ph. D.	2010-2013 **(26 March 2014)**	Electrical Power Quality	EED, I.I.T. Delhi

7 Recognitions received

Sr. No.	Name of award	Name of society/institute	Year
(i)	Young Engineer Award-2014	Indian National Academy of Engineering (INAE)- Delhi	2014
(ii)	POSOCO Power System Award (PPSA-2014)	Power System Operation Corporation (POSOCO) –A subsidiary of Power Grid Corporation of India Ltd (POWERGRID)-Delhi.	2014
(iii)	Amit Garg Memorial Research Award-2014	From Indian Institute of Technology (IIT) Delhi for the High Impact Publication in a quality journal during the session 2013-2014	2014
(iv)	IEEE-Senior Member	IEEE Industry Applications Society	2015
(v)	Associate Editor	IET *Renewable Power Generation*	2018
(vi)	Dr. Sabha Raj Arya is listed in the world's top 2% of most influential scientists from all areas in the "citation impact during the year 2022" published by researchers from Stanford University of USA and Elsevier of the Netherlands.		2022
(vii)	Dr. Sabha Raj Arya is listed in the world's top 2% of most influential scientists from all areas in the "citation impact during the year 2021" published by researchers from Stanford University of USA and Elsevier of the Netherlands.		2021
(viii)	Best Paper Award on "Talada Appala Naidu, **Sabha Raj Arya**, Rakesh Maurya and Ahmed Al-Durra "Control of Supply Voltage Power Quality Issues using DVR through Forward-Backward LMS" **in Proc. 2022 IEEE 2nd International Conference on Sustainable Energy and Future Electric Transportation, GRIET, Hyderabad, August 4-6, 2022, pp. 1-8 with cash price of Rs.5000.00.**		2022
(ix)	Best Paper Award on "Jayadeep Srikakolapu, **Sabha Raj Arya** and Rakesh Maurya, " DSTATCOM using Limit Cycle Oscillator FLL with Optimized Gains of Voltage Error Controllers," **in Proc. 1st International Conference on Innovation in Electrical Power Engineering, Communication, and Computing Technology) for LNEE, Springer, Bhubaneswar, 13th-14th December 2019, pp.1-13**		2020
(x)	Best Paper Award on "Talada Appala Naidu, **Sabha Raj Arya**, and Rakesh Maurya, "Control of DVR using Variable Step-size Griffith's LMS		2019

	with Optimized tuning of Proportional Integrator Gains" **in Proc. International conference on power electronics applications and technology in present energy scenario (PETPES-2019) organized by Electrical and Electronics Engineering Department, NITK Surathkal, 29-31 August 2019.**	
(xi)	**Guest Editor:** Special Issue on "Control and Power Quality in Renewable Energy Systems" in International Transactions on Electrical Energy Systems, Wiley (Impact factor:1.692) from April 2020 to Dec 2020.	2020
(xii)	**Guest Editor:** Special Issue on "Energy Storage-Design, Control, and Application in Modern Power Systems" in Journal of Electrical Engineering, Springer (SCI, I.F: 1.2)) from 8th July 2020 to 30 March 2021.	2020
(xiii)	**Guest Editors:** Special Issue On "Power Electronics Applications in Smart Distribution Grids with Renewable Energy Sources" in International Journal of Emerging Electric Power Systems-IJEEPS, (Scopus) from January 15, 2018 to August 2018.	2018
(xiv)	**Guest Editor:** Special Issue on "Green Energy Systems" in Journal of Green Engineering, (Scopus), from 15th April, 2017 to end of June 2017.	2017

8 Details of Research and Development Projects

(A) Research project (Total Amount :113.94 Lakhs)

Sr. No.	Name of Project	Funding Agency	Durations
(i)	Development of Adaptive control algorithm for shunt compensator (Minor Project) **(Role: Principal Investigator)**	Gujarat Council on Science and Technology (GUJCOST) Gandhinagar (Gj.) -382011 **(Completed)**	**Sanctioned** for 2 Year **(from: March 2016) Amount :1.94 Lakhs (Completed)**
(ii)	Development of Control Algorithms for Shunt and Series connected Custom Power Devices **(Role: Principal Investigator)**	Science and Engineering Research Board -New Delhi (Under Extra Mural Research Funding Scheme) **(Completed)**	**Sanctioned** for **3 Year (from June :2016) Amount : 44 Lakhs (Completed)**

(iii)	Control of wind solar micro grid power generation in isolated system **(Role: Co-Principal Investigator)**	Research Promotion under Technical Education-STEM (Project No/CTE No: 2021ELE001) Gandhinagar (Gujarat)	Sanctioned for **3 Year (from April :2021)** **Amount : 25 Lakhs** **(under progress)**
(iv)	**Intelligent Control for Active Shunt Compensator in Wind based Renewable Energy System for Remote Power Applications** **(Role: Principal Investigator)**	**Gujarat Council on Science and Technology, Department of Science and Technology, Govt. of Gujarat, Gandhinagar** (Project No./GUJCOST/STI/2021-2022/3874, Dated 31/03/2022))	Sanctioned for **3 Year (from April :2022)** **Amount : 43 Lakhs** **(under progress)**

(B) Consultancy Project **(Total Amount: 36.59 Lakhs)**

(i)	Consultancy project on "Electrical Safety Audit (with Thermography) for your Buildings (Office and Residential Quarters) at NABARD, Ahmedabad,2022. Amount (in Rs.)=**2,24,200.00- Completed** (Role: **Dr. Sabha Raj Arya, Co- Principal Investigator**)
(ii)	Consultancy project on "Electrical- Energy Audit Consultancy services in Veer Narmad south Gujarat university (University campus)-Surat (Gujarat), 2022. Amount (in Rs.) =**7,08,000.00- Completed** **(Role: Dr. Sabha Raj Arya, Co- Principal Investigator)**
(iii)	Consultancy project from M/s GEO Designs & Research (P) limited (GEO Test House), B-10, Krishana insuartial Esate, Gorwa Esatae, Vadodara-390016 (Gujarat) regarding work for "Power Quality Audit (Energy Audit) for rationalization of transformers at Air Force Station Jodhpur under GE (AF) Jodhpur, 2022. Amount (in Rs.)= **5,31,000.00 – Completed** **(Role: Dr. Sabha Raj Arya, Co- Principal Investigator)**

(iv)	Consultancy project for the work of SETC of electro mechanical for arrangement /replacement of existing equipment at Puna-Simada and Magob Sarthana sewage pumping station under Surat Municipal Corporation, 2018. Amount (in Rs.)=**3,80,963.00- Completed** **(Role: Dr. Sabha Raj Arya, Co- Principal Investigator)**
(v)	Consultancy project for checking and verification of design and drawing of Electrical and Automation –(PLC/SCADA) –Order No. SMCC/PO/22-23/135, Reference: 162, Dated 20/08/2022. Amount (in Rs.)=**92,040.00 -Under progress** **(Role: Dr. Sabha Raj Arya, Co- Principal Investigator)**
(vi)	Consultancy project for checking and verification of design and drawing of Electrical and Automation –(PLC/SCADA) –Order No. KCLPL/WO/22-23/108, Reference: 122, Dated 20/08/2022. Amount (in Rs.)=**92,040.00 -Under progress** **(Role: Dr. Sabha Raj Arya, Co- Principal Investigator)**
(vii)	Consultancy project for checking and verification of design and drawing of Electrical and Automation –(PLC/SCADA) –Order No. VPRPL /WO/22-23/798, Dated 20/08/2022 Amount (in Rs.)=**92,040.00 -Under progress** **(Role: Dr. Sabha Raj Arya, Co- Principal Investigator)**
(viii)	Consultancy project for Providing, Installation, and Maintaining cable monitoring and bridges lighting system on "Pandit Dindayal Upadhaya" Cable Bridge under Surat Municipal Corporation Surat, 2022. Amount (in Rs.)=**14,16,000.00 -Under progress** **(Role: Dr. Sabha Raj Arya, Co- Principal Investigator)**
(ix)	Consultancy project inspection for retrofitting of existing approx. 27,950/- numbers of conventional luminaries with LED luminaries and feeder pillars with CCMS under Surat Municipal Corporation, 2021. Amount (in Rs.)=**1,24,519.00- Under progress** **(Role: Dr. Sabha Raj Arya, Co- Principal Investigator)**

9. Publication of Books (03)

(i) Book Publication 2020-2022 on **"Distributed Energy System: Modelling and Control", CRC Press, USA, (in Publication Press),** Number of chapters :12, author's by Ashutosh K Giri, Government Engineering College Bharuch, **Sabha Raj Arya**, Sardar Vallabhbhai National Institute of Technology, Surat and Dmitri Vinnikov, Tallinn University of Technology, Estonia.

(ii) **Book Publication** 2021-2023 on **"Power Quality: Infrastructures and Control", Springer Publication (in publication Press),** Number of chapters :14, author's by Ashutosh K Giri, Government Engineering College Bharuch, **Sabha Raj Arya**, Sardar Vallabhbhai National Institute of Technology, Surat, Josep M Guerrero, Aalborg University, Denmark and Shailendra Kumar Dwivedi, M.A.N.I.T Bhopal.

(iii) **Book Publication** 2022-2023 on **"Custom Power Devices for Efficient Distributed Energy Systems", ELSEVIER Publication (Under Progress),** author's by Ahmed Al-Durra, Electrical Engineering & Computer Science Department, Khalifa University, UAE, **Sabha Raj Arya**, Department of Electrical Engineering, Sardar Vallabhbhai National Institute of Technology, Surat, Gujarat and Ashutosh K Giri, Electrical Engineering Department, Government Engineering College, Bharuch, Gujarat.

10 Positions held (from 2004 to present)

Sr. No.	Name of Department/ Institute	Positions	Duration	Nature of work
(i)	(Electrical Engineering Department) Kalinga Institute of Industrial Technology-Patia (Deemed university)-Bhubaneswar-751024	Lecture	**27th July 2004 to 27th Nov. 2006**	Teaching and Research (Supervisor for M.Tech. and B.Tech. students)
(ii)	(Electrical Engineering Department) S.V. National Institute of Technology, Dumas Road, Ichchhanath, Surat-395007	Assistant Professor	**1st Dec.2006 to 27th January 2019**	Teaching and Research (Supervisor for Ph. D, M.Tech. and B.Tech. students)
(iii)	(Electrical Engineering Department) S.V. National Institute of Technology, Dumas Road, Ichchhanath, Surat-395007	Associate Professor	**28th January 2019**	Teaching and Research (Supervisor for Ph. D, M.Tech. and B.Tech.

students)

11 Membership of professional bodies

Sr. No.	Name of society	From	Grade /Member ship number
(i)	Institute of Electrical and Electronics Engineers (IEEE)	2012 to continuous	Senior Member (2015) /92074574
(ii)	The Institution of Engineers (INDIA)	2010 to continuous	Associate member /AM0984518
(iii)	The System society of India	2008 to continuous	Member/ LM28471
(iv)	The Institution of Electronics and Telecommunication Engineers (IETE)	January 2016 to continuous	Member/LM 500011

12 Short term courses /Seminars Organized at SVNIT (*work as Coordinator and Delivered Expert Lecture*)

1) One-Week Short-Term Training Program on Emerging Trends in Electric Vehicles (EVs) and Renewables (ETER- 2022), 12th December to 16th December 2022
2) Emerging Technologies in Distribution System and Distributed Generation, 27 September to 1st October, 2021
3) Advancement in Electric Vehicle Technology: A step towards Development of sustainable Transportation System 18th February to 22ed February 2021
4) Power Electronics for Electrical Vehicles & Energy Systems (PEEVES-2020), 28th September to 03rd October 2020 jointly organized by (MMMUT & SVNIT), financially sponsored by TEQIP-III, MMMUT, Gorakhpur.
5) Application and Control of Power Electronic Converters for Sustainable Living,18-22 September, 2020
6) Control of Power Electronic converters for on Grid and off Grid systems (online mode), 3rd August 2020 to 07th August 2020.
7) Power Electronics for Distributed Generation and Electrical Drives 2nd march 2020 to 06th March -2020.
8) Organized on week short term course on smart energy systems: operational and control (SESOC-2019), Dec 2019, at MMMUT –Gorakhpur (worked as course coordinator)

9) Expert talk from Prof. (Dr.) D.P. Kothari , Ex head and Professor, Centre for energy studies, IIT Delhi, in the area of power system and power electronics, (06 May 2019)

10) Power Electronics For Distribution System and Electric Drives, June-July 2018

11) Power Quality and Distributed Power Generation, Dec. 2017

12) Design and Control of Power Electronic Circuits using OPAL- Real Time Simulators- March 2017

13) Power conditioning and Distributed Power Generation-Dec.-2016

14) Power Electronic: Circuits and Control-Dec.2015

15) Power Electronics: System and Control –Dec. 2014

16) Power Filter Technology and Control- June 2014

17) Advance Control System Education – Feb.2014

13 Complete lists of refereed Journal papers and papers presented in Conferences

(A)Summary of Publication in International/National Journals

IEEE Transactions	IET-UK	Elsevier	Other International Journals (SCI/SCOPUS)	Total
46		04	50	100
TIE-3, TPE-6 TII-1, TPWD-2, TIA-4, JESTPE-5, CPSST-1 , CSEE-2, CJEE-6 JESTIE-1	IET(PEc) -5 IET(GTD) -6 IET(RPG)-3 IET (EPA)-1	EPSR-1 IJEPES-1 REF-2	ITEES-7, JAPE-2 IJEST-1, IJEEPS-7 EPCS-7, IEIB-3, JGE-5, JCSE-1, IJPEC-2,JES-3, JA-1,IJICA-1, IJCTA-2, JEE-4, OCAM-2,IJFS-1,IJE-2,IVP-1 ,	

(B) Summary of Publication in International/National conferences and communicated papers

International / National conferences	Books	Book Chapters	Communicated Papers in Journals/ conferences	Total
56	03	05	10	74

(i) Publications in IEEE Transactions /IET Journals =46

[1] **S. R. Arya**, K. D. Mistry and P. Kumar, "A Hybrid Fuzzy Predictive DVR Model for Voltage Estimation Using Intelligent Learning," ***Accepted for Publication in*** **IEEE Transactions on Power Delivery**, (doi:10.1109/TPWRD.2022.3227216), **Dec.2022**.

[2] Sayed Javed Alam and **Sabha Raj Arya,** "Volterra LMS/F based Control Algorithm for UPQC with Multi Objective Optimized PI Controller Gains," ***Accepted for Publication in*** **IEEE Journal of Emerging and Selected Topics in Power Electronics, Jan 2022**

[3] Jayadeep Srikakolapu, **Sabha Raj Arya** and Rakesh Maurya, "Robust Iteration Dependent Least Mean Square based Distribution Static Compensator using Optimized PI Gains," **Accepted for *Publication in*** **IEEE Chinese Journal of Electrical Engineering**

[4] Jyoti Gupta, Rakesh Maurya and **Sabha Raj Arya**, "Development of On-Board Charger with Features of Multiple Electric Vehicles Charging," ***Accepted for Publication in*** **IEEE Chinese Journal of Electrical Engineering, Jan. 2022.**

[5] V. Rajagopal, Danthurthi Sharath, G. Vishwas, J. Bangarraju, **Sabha Raj Arya** and Ch. Venkatesh, "Optimized Controller Gains using Grey Wolf Algorithm for Grid Tied Solar Power Generation with Improved Dynamics and Power Quality," ***IEEE Chinese Journal of Electrical Engineering,*** *vol. 8, no. 2, pp.- 75-85, Dec. 2020.*

[6] **Sabha Raj Arya**, Rakesh Maurya, Talada Appala Naidu and B. Chitti Babu, "Adaptive Observer for dynamic voltage restorer with optimized proportional integral gains," **IEEE Chinese Journal of Electrical Engineering, vol. 8, no. 1, pp. 38-52, Feb. 2021.**

[7] Talada Appala Naidu, **Sabha Raj Arya**, Rakesh Maurya and Sanjeevikumar Padmanabhan, "Performance of DVR using Optimized PI Controller based Gradient Adaptive Variable Step LMS Control Algorithm", **IEEE Journal of Emerging and Selected Topics in Industrial Electronics**, vol. 2, no. 2, pp. 155-163, April 2021.

[8] Talada Appala Naidu, **Sabha Raj Arya**, Rakesh Maurya, Sanjeevikumar Padmanaban, "Variable fractional power- least mean square based control algorithm with optimized PI gains for the operation of dynamic voltage restorer"

Accepted for Publication in IET power Electronics, Oct. 2020.

[9] Jayadeep Srikakolapu, **Sabha Raj Arya** and Rakesh Maurya, "Distribution Static Compensator using an Adaptive observer based control algorithm with Salp Swarm Optimization Algorithm, **IEEE CPSS Transactions on Power Electronics and Applications for publication**, **vol. 6, no. 1, pp. 52-62, March 2021.**

[10] Sayed Javed Alam, **Sabha Raj Arya** and Ranjan Kumar Jana," Biogeography Based Optimization strategy for UPQC PI tuning on Full Order Adaptive Observer based Control, *Accepted for Publication in* ***IET Generation, Transmission and Distribution,*** Sept 2020.

[11] Aliva Routray, Khyati D Mistry, Sabha Raj Arya and B. Chittibabu, "Power output evaluation of a wind-solar farm considering the influence parameters," *Accepted for Publication in* **IET Renewable Power Generation**, Sept 2020.

[12] Amritha. K, V. Rajagopal, K. Narasimha Raju and **Sabha Raj Arya**, "Ant Lion algorithm for optimized controller gains for power quality enrichment of off grid wind power harnessing unit," **IEEE-** ***Chinese Journal of Electrical Engineering***, vol. 6, no. 3, pp. 85-97, Sept. 2020**.**

[13] Sayed Javed Alam and **Sabha Raj Arya**,"Control of UPQC based on steady state linear Kalman Filter for Compensation of power quality problems," ***IEEE*****-Chinese Journal of Electrical Engineering,** vol. 6, no. 2, pp. 52-65, June 2020.

[14] **Sabha Raj Arya**, Sayed Javed Alam and Papiya Ray, "Control algorithm based on limit cycle oscillator-FLL for UPQC-S with optimized PI gains," ***IEEE-CSEE Journal of Power and Energy Systems,*** vol. 6, no. 3, pp. 649-661, Sept. 2020.

[15] Talada Appala Naidu, **Sabha Raj Arya**, Rakesh Maurya and Veramalla Rajgopal "Compensation of Voltage based Power Quality Problems using Sliding Mode Observer with Optimized PI controller Gains," ***IET Generation, Transmission & Distribution,*** vol. 14, no. 14, pp. 2656-2665, July 2020.

[16] Jyoti Gupta, Rakesh Maurya and **Sabha Raj Arya, "**Improved Power Quality On-Board Integrated Charger with Reduced Switching Stress, ***IEEE***

Transactions on Power Electronics, vol. 35, no. 10, pp. 10810-10820, Oct. 2020.

[17] Jyoti Gupta, Rakesh Maurya and **Sabha Raj Arya, "**On-Board EV Battery Charger with Improved Power Quality and Reduced Switching Stress, ***IET Power Electronics***, vol. 13, no. 13, pp. 2885-2894, Oct. 2020.

[18] Ashutosh k. Giri, **Sabha Raj Arya**, Rakesh Maurya and B Chitti Babu, "Control of Voltage Source Converter for Enhancement of Power Quality in off-Grid Distributed Power Generation,"***IET Renewable Power Generation*****, vol. 14, no. 5, pp. 771-778, 2020.**

[19] Ashutosh K Giri, **Sabha Raj Arya**, Rakesh Maurya, and B. Chitti Babu, "VCO less PLL Control Based VSC for Power Quality improvement in Distributed Generation System," ***IET Electric Power Applications*****,** vol. 13, no. 8, pp. 1114-1124, 2019.

[20] Talada Appala Naidu, **Sabha Raj Arya** and Rakesh Maurya, " Dynamic Voltage Restorer with Quasi Newton Filter based Control Algorithm and Optimized values of PI Regulator Gains, ***IEEE Journal of Emerging and Selected Topics in Power Electronics,*** vol. 7, no. 4, pp. 2476-2485, Dec. 2019.

[21] Ashutosh K. Giri, **Sabha Raj Arya** and Rakesh Maurya, "Compensation of Power Quality Problems in Wind based Renewable Energy System for Small Consumer as Isolated loads, ***IEEE Transactions on Industrial Electronics,*** vol. 66, no. 11, pp. 9023-9031, Nov. 2019.

[22] T. Appala Naidu, **Sabha Raj Arya** and Rakesh Maurya, "Multi-Objective Dynamic Voltage Restorer with Modified EPLL Control and Optimized PI Controller Gains," ***IEEE Transactions on Power Electronics,*** vol. 34, no. 3, pp. 2181-2192, March 2019

[23] Ashutosh K Giri, **Sabha Raj Arya**, Rakesh Maurya and Ramakanta Mehar, " Variable Learning Adaptive Gradient Based Control Algorithm for VSC in Distributed Generation," ***IET Renewable Power Generation*****,** vol. 12, no. 16, pp. 1883 – 1892, 2018.

[24] **Sabha Raj Arya**, Rakesh Maurya and Talada Appala Naidu, "Amplitude Adaptive Notch Filter with Optimized PI Gains for Mitigation of Voltage

based Power Quality Problems," ***IEEE-CPSS Transactions on Power Electronics and Applications*****,** vol. 3, no. 4, pp.313-323, December 2018.

[25] Sanjay Kumar Patel, **Sabha Raj Arya**, Rakesh Maurya and B. C. Babu, "Control Scheme for DSTATCOM based on Frequency Adaptive Disturbance Observer," ***IEEE Journal of Emerging and Selected Topics in Power Electronics,*** vol. 6, no.3, pp. 1345-1354, 2018.

[26] Ashutosh K. Giri, **Sabha Raj Arya**, Rakesh Maurya and B. C. Babu, "Power Quality Improvement in Stand-alone SEIG based Distributed Generation System using Lorentzian Norm Adaptive Filter," ***IEEE Transactions on Industry Applications,*** vol. 54, no. 5, pp. 5256-5266, March 2018.

[27] B. R. Ananthapadmanabha, Rakesh Maurya and **Sabha Raj Arya**, "Improved Power Quality Switched Inductor Cuk Converter for Battery Charging Application," ***IEEE Transactions on Power Electronics,*** vol. 33, no.11, pp. 9412-9423, 2018.

[28] Ashutosh K. Giri ,Amin Qureshi, **Sabha Raj Arya**, Rakesh Maurya and B.Chitti Babu,"Features of Power Quality in Single Phase Distributed Power Generation using Adaptive Nature Vectorial Filter," ***IEEE Transactions Power Electronics,*** vol. 33 No.11 pp. 9482-9495, 2018.

[29] Sanjay Kumar Patel, **Sabha Raj Arya**, Rakesh Maurya,"Nonlinear adaptive volterra filter for control of distribution static compensaton," ***IEEE Journal of Emerging and Selected Topics in Power Electronics,*** vol. *5,* no. 1, pp.559 - 567*,* March 2017.

[30] **Sabha Raj Arya**, Bhim Singh, Ram Niwas, Ambrish Chandra and Kamal Al-Haddad, "Power quality enhancement using DSTATCOM in distributed power generation system," ***IEEE Transactions on Industry Applications*****,** vol. 52, no. 6, pp. 5203-5212, Nov.-Dec. 2016

[31] Sanjay Kumar Patel, **Sabha Raj Arya**, Rakesh Maurya and Bhim Singh, **"**An interior point algorithm for optimal control of DSTATCOM under distorted supply voltage conditions,"***IET Generation, Transmission and Distribution,*** vol. 10, no. 8, pp. 1778-1791, 2016.

[32] **Sabha Raj Arya** and Bhim Singh"Implementation of kernel incremental meta-learning algorithm in distribution static compensator,"***IEEE***

Transactions Power Electronics, vol.30, no.3, pp.1157-1169, March 2015.

[33] Sabha Raj Arya, Ram Niwas, Krishan Kant, Bhim Singh, Ambrish Chandra and Kamal Al-Haddad" Power quality improvement in isolated distributed generation system using DSTATCOM,"***IEEE Transactions on Industry Applications,*** vol. 51, no.06, pp. 4766-4774, Nov/Dec. 2015

[34] Bhim Singh, Krishan Kant Bhalla and **Sabha Raj Arya**,"Notch filter based fundamental frequency component extraction to control DSTATCOM for mitigating current related power quality problems" ***IET power Electronics,*** vol.8, no.9, pp.1758-1766, 2015***.***

[35] **Sabha Raj Arya** and Bhim Singh,"Neural Network based conductance estimation control algorithm for shunt compensation," ***IEEE Transactions on Industrial Informatics***, vol.10, no.1, pp.569-577, Feb. 2014.

[36] **Sabha Raj Arya**, Bhim Singh, Ambrish Chandra, and Kamal Al-Haddad "Learning based Anti-Hebbian learning algorithm for control of distribution static compensator," ***IEEE Transactions on Industrial Electronics,*** vol. 61, no.11, pp. 6004-6012, Nov. 2014.

[37] Bhim Singh and **Sabha Raj Arya**,"Back-Propagation control algorithm for power quality improvement using DSTATCOM,"***IEEE Transactions on Industrial Electronics***, vol.61, no.3, pp.1204-1212, March 2014.

[38] Bhim Singh, **Sabha Raj Arya**, Ambrish Chandra, and Kamal Al-Haddad "Implementation of adaptive filter based control algorithm for distribution static compensator," ***IEEE Transactions on Industry Applications,*** vol. 50, no.5, pp.3026-3036, Sept / Oct 2014.

[39] Bhim Singh, **Sabha Raj Arya** and Chinmay Jain "Simple peak detection control algorithm of DSTATCOM for power quality improvement," ***IET power Electronics,*** vol. 7, no.7, pp. 1736-1746, 2014.

[40] Bhim Singh, **Sabha Raj Arya**, Chinmay Jain and Sagar Goel "Implementation of four leg distribution static compensator," ***IET Generation, Transmission and Distribution***, vol.8, no.6, pp. 1127-1139, 2014.

[41] Bhim Singh, Sunil kumar, Sabha Raj Arya, "Hyperbolic tangent function-

based least mean-square control algorithm for distribution static compensator"***IET Generation, Transmission and Distribution,*** vol.8, no.12, pp.2102-2113, 2014.

[42] **Sabha Raj Arya** and Bhim Singh,"Performance of DSTATCOM using leaky LMS control algorithm," ***IEEE Journal of Emerging and Selected Topics in Power Electronics****,* vol. 1, no.2, pp.104-113, June 2013.

[43] **Sabha Raj Arya** and Bhim Singh,"An Implementation of DSTATCOM for power quality enhancement using learning vector quantization," ***IET Generation, Transmission and Distribution****,* vol. 7, no.3, pp.1244-1252, 2013.

[44] Bhim Singh and **Sabha Raj Arya**," Implementation of single-phase enhanced phase-locked loop-based control algorithm for three-phase DSTATCOM,"***IEEE Transactions on Power Delivery****,* vol. 28, no. 3, pp.1516-1524, July 2013.

[45] Bhim Singh and **Sabha Raj Arya**, "Adaptive theory-based improved linear sinusoidal tracer control algorithm for DSTATCOM,"***IEEE Transactions on Power Electronics****,* vol. 28, no.8, pp.3768-3778, Aug. 2013.

[46] Bhim Singh and **Sabha Raj Arya**,"Composite observer-based control algorithm for distribution static compensator in four-wire supply system," ***IET Power Electronics****,* vol. 6, no.2, pp. 251-260, Feb. 2013.

(ii) Publications in other Journals =54

[47] **Sabha Raj Arya**, Rakesh Maurya and Jayadeep Srikakolapu, "DSTATCOM using Model Predictive Control Associated with LMS Control, ***Accepted for publication in*** International Journal of Electronics, Nov 2022.

[48] Jyoti Gupta, Rakesh Maurya and **Sabha Raj Arya**, "Enhanced Performance of On-board EV Battery Charger with Universal Power Supply," ***Accepted for publication in*** *Journal of Electric Power Components and Systems, Oct. 2022.*

[49] Nitesh Tiwari, Shekhar Yadav and **Sabha Raj Arya**, "Multi-Objective

Metaheuristic Optimized PI Gains of Model Reference Adaptive Controlled Induction Motor Drive for Electric Vehicle," ***Accepted for Publication in*** Int. J. of Vehicle Performance (Inder-science Publishers), Sept 2022.

[50] Jayadeep Srikakolapu, **Sabha Raj Arya,** Rakesh Maurya and Shailendra Sharma, "Predictive Control based DSTATCOM with a Multi Criterion Decision Making Method", Journal of The Institution of Engineers (India): Series B, vol. 103, no.6. pp.2097-2110, August 2022.

[51] Nitesh Tiwari, Shekhar Yadav and **Sabha Raj Arya**, "Direct Torque Control of Induction Motor Equipped Electric Vehicle drives and Optimized PI Gains", ***Accepted for Publication in*** International Journal of Electric and Hybrid Vehicles, July 2022.

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[156] Biswajit Nayak and S. R. Arya,"Analysis of chopper fed DC drive with PID and Fuzzy logic controller,"***in Proc. of National Conference on Soft Computing and Machine***, C.O.B. Bhubaneswar, 24th to 26th march 2006.

(iii) Publication as Book Chapters =05

[157] **Sabha Raj Arya** and Sayed Javed Alam, "Phase Lock Loops For UPQC In Distribution system along with optimized PI-Controller Gains," Accepted Book Chapter in **Nova Science Publishers, Inc, NY:11788-3619, USA**

[158] Bhim Singh, **Sabha Raj Arya**, Chinmay Jain, Sagar Goel, Ambrish Chandra and Kamal Al-Haddad, "Application of voltage source converter for power quality improvement," ***Lecture Notes in Electrical Engineering***, vol. 327, Chapter 29, pp.335-346, Springer India, New Delhi.

[159] Ashutosh K Giri, **Sabha Raj Arya**, Rakesh Maurya and Papia Ray, "Performance of Control Algorithms in Wind-Based Distributed Generation System with Power Quality Features: A Review," Microgrid: Operation, Control, Monitoring and Protection, Lect. Notes Electrical Eng., Vol. 625, Papia Ray and Monalisa Biswal (Eds), chapter-3, **Springer Nature Singapore Pvt. Ltd. 2020** (https://doi.org/10.1007/978-981-15-1781-5_3)

[160] Aliva Routray, Khyati D Mistry, **Sabha Raj Arya,** "Implementation of Black Widow Optimization Algorithm for Loss Minimization in an Unbalanced Radial Distribution System", pp. 347-361, book on Renewable Energy Towards Smart Grid Springer, Singapore, 2022

[161] Aliva Routray, Khyati D Mistry, **Sabha Raj Arya** "Application of Solar Energy as Distributed Generation for Real Power Loss Reduction in Radial Distribution Network," pp. 403-432, book on Next Generation

Smart Grids: Modeling, Control and Optimization Springer, Singapore, 2022.

(iv) Communicated in International/National Journals/ Conference = 10

[1] Mahesh Pudari, **Sabha Raj Arya** and Rajeev Kumar Arya, " an improved sliding mode observer for parameter estimation in Induction Motor Drive with optimized gains," ***Communicated to Australian Journal of Electrical and Electronics Engineering (R1).***

[2] Sayed Javed Alam and **Sabha Raj Arya**, "Constrained stability least mean square algorithm with optimized PI gains in control of UPQC" ***Communicated to Australian Journal of Electrical and Electronics Engineering.***

[3] **Sabha Raj Arya** and Sayed Javed Alam, "Self adaptive multi population rao optimization for error regulator in UPQC based improved zero attracting normalized LMS, **Communicated to *IEEE-CPSS Transactions on Power Electronics and Applications (Under Revision).***

[4] *Prashant Kumar, Sabha Raj Arya and Khyati D Mistry, "TSKARNA-Norm Adaption Based NLMS with Optimized Fractional Order PID Controller Gains for Voltage Power Quality," **IEEE - Chinese Journal of Electrical Engineering (R1).***

[5] Sabha Raj Arya, Khyati D. Mistry and Prashant Kumar"Least Mean Mixed Norm Square/Fourth Adaptive Algorithm with Optimized FOPID Gains for Voltage Power Quality Mitigation" **Communicated to IEEE Journal of Emerging and Selected Topics in Power Electronics (R2).**

[6] Mahesh P. and Sabha Raj Arya "Multi-Parameter Identification of Indirect Field Oriented Controlled Induction Motor Drive with Optimized PI Gains"

Communicated to Institute of Engineers (R1).

[7] Prashant Kumar, Sabha Raj Arya and Khyati D Mistry, " Momentum adaption and Meta-Learning based DVR with optimized gains," ***Communicated to IEEE Transactions on Power Electronics (Under Revision).***

[8] Prashant Kumar, **Sabha Raj Arya** and Khyati D Mistry, "Control of DVR using GRNN machine learning based on self-tuning in distribution network," **Communicated to *IEEE Journal of Emerging and Selected Topics in Power Electronics (R2).***

[9] Jayadeep Srikakolapu, Sabha Raj Arya and Rakesh Maurya, "DSTATCOM with variable step size normalized least mean square algorithm and optimized PI Gain," **Communicated to CPSS Transactions on Power Electronics and Applications (R2).**

[10] *Prashant Kumar,* ***Sabha Raj Arya,*** *Khyati D Mistry and Papia Ray, "Performance of DVR using diffusion norm penalized LMS Fourth adaption algorithm with optimized FOPID gains,"* **Communicated to** *IEEE Transactions on Industrial Electronics* ***(Under Revision).***

14 Conference/Seminars/Short term course Attended

Sr. No.	Conference /Seminars	Organized By	Sponsor	During	Day	Weeks
1	Short term course on **Modern Optimization Technique in Power system**	University College of Engineering Burla (Orissa)	-	Dec.,19-31, 2005	12	2
2	**Testing in Electrical Engg.**	SVNIT –Surat	-	January, 3-5 2007	3	-
3	National workshop on P**ower Electronics**	IIT- Bombay		September,6-7 2007	2	-
4	Short term course on **VLSI And Embedded System**	Cental Institute of Tool design , Hyderabad (A.P.)		Dec17-22, 2007	5	1

5	Short term course on **Electric power quality: monitoring, analysis and mitigation**	IIT Kanpur		April 07-11 ,2008	5	1
6	Staff training program **infrastructural and curricular development of electrical drives laboratory**	N.I.T. Warangal (A.P.)	-	September-24-26, 2008	3	-
7	Short term course on **Application of mathematical sciences and soft computing**	SVNIT	-	Dec, 8-12, 2008	5	1
8	Short term course on **Advance Engineering Optimization Through Intelligent Techniques**	SVNIT	-	Dec, 14-18, 2009	5	1
9	Participation certificate **Tutorials PEDES2010**	IIT Delhi		20th Dec 2010	1	0
10	Short term course on **Building Integrated Photovoltatic Thermal System**	IIT Delhi		Feb., 8-14, 2011	7	1
11	Short term course on **Research Methodology** and **Intellectual Property Rights** (IPR)	EQUATE	-	Feb.,4-7, 2014	5	1
12	Short term course on **Application of Evolutionary Computation Techniques on Power System**	SVNIT	-	July, 14-18, 2014	5	1
13	Short term course on **Mathematical Modeling in Science and Engineering**	SVNIT	-	June,23-27, 2014	5	1
14	Short term course on **Power Electronics Applications for**	IITK		30th March,30 to April, 1, 2015	3	-

	Renewable Integration					
15	Short term course on **Advance Power Electronics and Electrical Drives**	MANIT – Bhopal		3rd to 7th Jan 2016	5	1
16	Short term course on **Mathematical Modeling, Optimization, Fractional Calculus and their Computations in Engg. and Science**	SVNIT – Surat		21st-25th June 2016	5	1

15 Supervision of M. Tech students in the area of Power Electronics

(A) Total number of student supervised up to 2022 = **22**

Sr. No.	Thesis title	Year
1	Parameter Estimation and Optimization of a 3-phase Sensorless Induction Motor Drive	2022
2	Solar Water Pumping System Through DC-Link Voltage Regulation	2022
3	Control Algorithm for DSTATCOM In Three Wire System	2022
4	Indirect vector control in PMSM Drives	2022
5	Design and Control of Solar Energy Based E-Rickshaw	2021
6	Simulation study of Field oriented Control of Induction Motor Drives	2020
7	Design and Implementation of Solar fed Single-Input Multi-Output DC-DC Converters	2019
8	Design and Implementation Power Converters for Electric Vehicles	2019
9	Distribution Static Compensator and its application in Distributed Power Generation	2018
10	Wireless Charging System for an Electric Vehicle Battery Charging	2018
11	Fuel Cell based DPG System	2017

12	Solar Based power generation system with Power Quality	2017
13	Single phase SEIG with Power Quality Features	2017
14	Power Generation System using Permanent Magnet Synchronous Generator with Power Quality Features	2016
15	Design and Control of Shunt Connected Custom Power Devices	2016
16	Design and implementation of shunt and series connected custom power devices	2015
17	Solar system with power quality features and its application in water pumping	2015
18	Analysis of load performance and power quality improvement in inverter fed induction fed induction motor drives	2010
19	Design and analysis of input power factor correction converters for low and medium power application in AC/DC converters	2009
20	Design and analysis of input power factor correction technique in uncontrolled rectifier system	2008
21	Design and Analysis Chopper Fed DC drives	2006
22	Design and analysis of single phase full bridge SPWM inverter	2006

(B) Number of M. Tech student supervision ongoing (2022-2023) = 02

16 Supervision of Ph D. students in the area of Power Electronics/ Electrical Power Quality

(i) Number of Ph. D student supervision ongoing up to 2022 = **13+ 09 (**Completed**)**

Sr. No.	Name of student/ research scholar	Topic/ Research Area	Year of registration	Guide/ Co-Guide
(1)	**Sanjay Kumar Patel (D14EL002)**	**Control Algorithms for DSTATCOM to Mitigate Power Quality Problems**	**2014-2018 (Completed)**	**as a Principal Guide**
(2)	**B. R. Ananthapadmanabha (D14EL009)**	**Improved Power Quality Converters for Electric Vehicle Battery Charging**	**2014-2019 (Completed)**	**as a Co-Guide**

(3)	**Ashutosh Giri (D16EL006)**	**Control Algorithms for Power Quality Improvement in Wind based Distributed Power Generation System**	**2016-2019 (QIP) (Completed)**	**as a Principal Guide**
(4)	**T A Naidu (DS16EL001)**	**Control Algorithms for Dynamic Voltage Restorer to Mitigate Voltage based Power Quality Problems**	**2017-2019 (JRF) (Completed)**	**as a Principal Guide**
(5)	**Aliva Routray (DS16EL002)**	**Solar and Wind energy driven Distributed Generation interface for loss minimization in Radial Distribution System**	**2017-2021 (Completed)**	**as a Co-Guide**
(6)	**Alam Sayed Javed (D17EL004)**	Design and control of UPQC	**2022 (Completed)**	**as a Guide**
(7)	**Jayadeep Srikakolapu Manikyala Rao (DS17EL003)**	DSTATCOM and its Application in DG system	**2022 (Completed)**	**as a Principal Guide**
(8)	**Jyoti Gupta (DS17EL001)**	Battery charging and discharging system	**2022 (Completed)**	**as a Co-Guide**
(9)	Bindra Dawar	Wind based Distributed Power Generation System	2018 (QIP) **Under progress**	**as a Guide**
(10)	Hardik Pandya	Power Electronics and Power Quality	2019 (PEC) **Under progress**	**as a Guide**
(11)	Hareesh K. Kairumkonda	Power Electronics and Power Quality	2019 (PEC)	**as a Guide**
(12)	Vamireddy Malleswari	DVR control	2019 (PEC) **Under progress**	**as a Guide**
(13)	**Prashant Kumar (D19EL005)**	Design and control of DVR using Soft computing	2019 **(Completed)**	**as a Principal Guide**
(14)	Riucha Dubey	Control of Induction Motor Drives	2019 (PEC)	**as a Co-Guide**

(15)	Nitesh Tiwari **(from MMMUT Gorakhpur-U.P)**	Electric Vehicles	2019 **(Under Submission)**	**as a Co-Guide**
(16)	Chinmay V. Deshpande	Adaptive control of DVR	2020 **(Under Progress)**	**as a Co-Guide**
(17)	Pudari Mahesh	Induction Motor Drives	2020 (**Under submission**)	**as a Guide**
(18)	Tathe Vishal Laxman	AC micro-grid System	2021	**as a Guide**
(19)	Chaitanya Deshpande	DC micro-grid System	2021	**as a Guide**
(20)	Ch. Jagdish	Distributed Power Generation	2022	**as a Guide**
(21)	Uday Kumar	Power Quality	2022	**as a Guide**
(22)	Praveen Shankar (JRF)	Distributed Power System	2022	**as a Principal Guide**

16 Reviewer for the Journals

IEEE Transactions on Industrial Electronics

IEEE Transactions on Power Electronics

IET Power Electronics

International Transactions on Electrical Energy Systems

IEEE Journal of Emerging and Selected Topics in Power Electronics

Journal of Electric Power Components and Systems

Journal of Electric Power System Research

Place – Surat (India)
Date: 20-12-2022

Dr. Sabha Raj Arya