

# Dr. Vinay Kumar Awaar



**Associate Professor & Dean of Student Affairs**  
**Department of Electrical and Electronics Engineering.**

**Qualification: Ph.D.** – Power Electronics, JNTUH 2023.

**M.Tech** – PSHVE, JNTU Hyderabad, 2008.

**B.Tech** - Electrical and Electronics Engineering, GITAM, AU, 2003.

**Experience: 16yrs**

**Research Areas:** Power Electronics, Power Quality, Power Systems, Electric Vehicles, IoT, and Embedded Systems.

Dr. Vinay Kumar Awaar has completed his M. Tech from JNTU Hyderabad and B.E from GITAM, AU, Vizag. He has teaching experience of 16 years and has worked in the industry for two years. He has completed PhD from JNTUH, Hyderabad in Power Electronics. He has worked as a coordinator for the institution level student chapters like ISTE, IEI and department level student body Electrical Engineers Club (EEC). He served as a Council Member of the All-India Students' Committee (AISC), IEI India. He is an Associate Professor in the Electrical and Electronics Engineering department at Gokaraju Rangaraju Institute of Engineering and Technology. Presently he is representing as a Dean, Student Affairs in organizing institute-level workshops and outreach programs.

## **R & D Projects**

1. Design and development of 250 kVA Dynamic Voltage Restorer – (DST funded Project).
2. Development of battery driven Electric Vehicle - Go-kart.
3. Smart home control system.
4. Sensor less Field Oriented Control (FOC) of PMSM for EVs.
5. DSP Based testing platform for Characterization of BLDC motor using TMS320F28069M.

## **Selected Peer reviews and sessions handled.**

- Served as a Session Co-chair for 3rd International conference on Design and manufacturing aspects for sustainable energy – 2023 (ICMED-23), India, April 2023.
- Served as a Session Co-chair for 2nd International Conference on Sustainable Energy and Future Electric Transportation (SeFeT-22), India, January 2022.
- Delivered an Online Industrial Presentation for Cadets of Indian Naval Academy (INA) Ezhimala, Kerala, 7<sup>th</sup> July 2021.
- Served as a Reviewer for the IEEE-TPWRD Transactions on Power Delivery, January 2021.

- Served as a Reviewer for the IET Power Electronics June 2020.
- Served as a Reviewer for IEEE-ICIT-2019, IEEE International Conference on Industrial Technology, Australia-2019.
- Invited to deliver a guest lecture on “Modern Trends in Power Electronics and Applications in Industries”, Vignan’s Nirula Institute of Technology & Science for Women, 18th Sept 2018.
- Invited for a Guest Lecture at Indian Naval Academy (INA), Kerala, Apr18.
- Invited as a Reviewer for the IEEE-PES International Conference IECON-2016.
- Invited as a Reviewer for the International Journal-IJEEE, Iraqi Journal for Electrical and Electronic Engineering.
- Invited as a Reviewer for the IEEE India - International Conference INDICON-2015.
- Served as a Reviewer for the IEEE-TPWRD Transactions on Power Delivery, January 2014 - November 2014.
- Invited for a guest lecture on High Voltage Engineering at Gurunanak Engineering College in August 2014.
- Delivered a Guest lecture on neural networks and fuzzy logic at Malla Reddy Engineering College in Sept 2013.
- Invited as a Technical Chair for the Technical Fest ESPARTO-2013 at HITAM college, Feb 2013.

### **Achievements & Awards**

- ❖ Faculty Coordinator for AICTE-IDEA Lab
- ❖ Elected as a council Member of the All-India Students’ Committee (AISC), IEI India.
- ❖ Faculty Coordinator for ISTE-Student chapter.
- ❖ HIL Specialist Certification from Typhoon HIL Academy.
- ❖ Certification for Industrial IoT on Google Cloud Platform from Coursera.
- ❖ Certification for Data Science Math Skills from Coursera.
- ❖ Certification for Cloud Computing Basics (Cloud 101) from Coursera.
- ❖ Received best paper award at IEMERA-2020, London.
- ❖ Received best paper award at ICIEES-2013, Coimbatore, India.

### **Courses Taught:**

Power Quality, Electrical Drives (AC&DC), Modern Power Electronics, HVDC Transmission Systems, Electric Drives System, Power Systems, High Voltage Engineering, Power System Operation and Control, Embedded Systems, Basic Electrical and Electronics Engineering, Electrical Distribution Systems, Electrical Utilization and Traction.

## Research Publications:

- [1] Yadasu, Shyam, Vatsala Rani Jetti, Vinay Kumar Awaar, and Mohan Gorle. "Development of Novel Pulse Charger for Next-Generation Batteries." *Energy Technology* 11, no. 3 (2023): 2200894. <https://doi.org/10.1002/ente.202200894>
- [2] Awaar, Vinay Kumar, and Praveen Jugga. "IoT-Based Robotic Arm." In *Blockchain Technology for IoT and Wireless Communications*, pp. 65-78. CRC Press, 2024. <https://www.taylorfrancis.com/chapters/edit/10.1201/9781003269991-6/iot-based-robotic-arm-vinay-kumar-awaar-praveen-jugga>
- [3] Yadasu, S.; Awaar, V.; Jetti, V.; Eskandari, M. Performance Analysis of Pulse-Based Solar Charge Controller for Low-Powered Battery Applications: NiMH Battery as a Case Study. *Preprints* 2023, 2023081066. <https://doi.org/10.20944/preprints202308.1066.v1>
- [4] Vinay Kumar, Awaar, Abhignya Rajapu, Kalaka Goutham, Yerravati Shiva Prasad Goud, and Madisetty Anuraag. "Weight-Based Object Segregation Using 5 DOF Robotic Arm." In *Advances in Modelling and Optimization of Manufacturing and Industrial Systems: Select Proceedings of CIMS 2021*, pp. 441-453. Singapore: Springer Nature Singapore, 2023. [https://doi.org/10.1007/978-981-19-6107-6\\_31](https://doi.org/10.1007/978-981-19-6107-6_31)
- [5] Kumar, TVV Pavan, U. Rajendra, G. Varaprasad, G. Suryaprakash, T. Sadanand, Vinay Kumar Awaar, and Surya Prakash Gairola. "EV BMS With Temperature and Fire Protection." In *E3S Web of Conferences*, vol. 430, p. 01163. EDP Sciences, 2023. <https://doi.org/10.1051/e3sconf/202343001163>
- [6] Sharma, Kshama, Priyanka Bhattacharjee, Rishabh Arora, Kaushal Kumar, Madhu Kirola, Vinay Kumar Awaar, Suniana Ahuja, and Bande Ganesh. "Green and Sustainable Manufacturing with Implications of ESG In Energy Sector: A Comprehensive Review." In *E3S Web of Conferences*, vol. 430, p. 01183. EDP Sciences, 2023. <https://doi.org/10.1051/e3sconf/202343001183>
- [7] Kumar, Kaushal, Saurav Dixit, Md Zia ul Haq, Vafaeva Khristina Maksudovna, Nikolai Ivanovich Vatin, DS Naga Malleswara Rao, Vinay Kumar Awaar, Ms Ginni Nijhawan, and K. Swapna Rani. "Exploring the Uncharted Territory: Future Generation Materials for Sustainable Energy Storage." In *E3S Web of Conferences*, vol. 430, p. 01199. EDP Sciences, 2023. <https://doi.org/10.1051/e3sconf/202343001199>
- [8] Kumar, Kaushal, Saurav Dixit, Md Zia ul Haq, Vafaeva Khristina Maksudovna, Nikolai Ivanovich Vatin, M. Rekha, Vinay Kumar Awaar, Atul Singla, and Srinivas Jhade. "Revolutionizing Heat Treatment: Novel Strategies for Augmented Performance and Sustainability." In *E3S Web of Conferences*, vol. 430, p. 01200. EDP Sciences, 2023. <https://doi.org/10.1051/e3sconf/202343001200>

- [9] Kumar, KSV Phani, Vinay Kumar Awaar, Venkateshwarlu Sonnati, K. Mahammad Rafi, and Gopal Krishna. "Power Quality Improvement and Sustainable operation in A Standalone Micro Grid by Regulating Frequency in A Deregulated Market." In *E3S Web of Conferences*, vol. 430, p. 01011. EDP Sciences, 2023. <https://doi.org/10.1051/e3sconf/202343001011>
- [10] Rafi, K. Mahammad, Vinay Kumar Awaar, KSV Phani Kumar, G. Pradeep Reddy, Sakshi Koli, and K. Kalpana. "Digital Control of DSTATCOM using TI-C2000 Processor and MATLAB/Simulink for Sustainable Power System Network." In *E3S Web of Conferences*, vol. 430, p. 01010. EDP Sciences, 2023. <https://doi.org/10.1051/e3sconf/202343001010>
- [11] Mahadeva, Rajesh, Vivek Patel, Abhijeet Ghosh, Saurav Dixit, Bhivraj Suthar, Vinay Gupta, Vinay Kumar Awaar et al. "Artificial Intelligence in Water Desalination: A Novel Approach for Global Sustainability." In *E3S Web of Conferences*, vol. 430, p. 01193. EDP Sciences, 2023. <https://doi.org/10.1051/e3sconf/202343001193>
- [12] Awaar, Vinay Kumar, MN Sandhya Rani, Sai Vignesh Bellal, Ganesh Kumar Kurva, Madhu Kirola, and D. Balaji. "Modeling and Development of Wireless Power Transmission System for Electric Vehicles." In *E3S Web of Conferences*, vol. 430, p. 01007. EDP Sciences, 2023. <https://doi.org/10.1051/e3sconf/202343001007>
- [13] Katikala, Hima Bindu, Dilleswara Rao Intenaka, Bhagat Sri Ani Tulabandula, Kommuri Manoj Kumar, Sakshi Koli, Vinay Kumar Awaar, Soosan Chhabra, and M. N. Narsaiah. "EoG based Biopotential Instrumentation Amplifier." In *E3S Web of Conferences*, vol. 430, p. 01188. EDP Sciences, 2023. <https://doi.org/10.1051/e3sconf/202343001188>
- [14] Paruchuri, BVN Prasad, Madhu Latha Veerapaneni, G. Rames, Vinay Kumar Awaar, and Abhilasha Chauhan. "Beyond Binary: The Capabilities of Classical and Quantum Computing for Securing Data Transmission." In *E3S Web of Conferences*, vol. 430, p. 01073. EDP Sciences, 2023. <https://doi.org/10.1051/e3sconf/202343001073>
- [15] Awaar, Vinay Kumar, Sandhya Rani, C. H. Sindhu, Suchismita Das, and A. Hussien Abbas. "IoT Enabled Speed Control of Single-Phase Induction Motor." In *E3S Web of Conferences*, vol. 391, p. 01175. EDP Sciences, 2023. <https://doi.org/10.1051/e3sconf/202339101175>
- [16] Awaar, Vinay Kumar, Anjali Nagilla, Sravani Bannuru, Suchitha Veeramaneni, Prasanthi Veerla, and A. Hussien Abbas. "Position sensorless field-oriented control of BLDC motor for EV applications." In *E3S Web of Conferences*, vol. 391, p. 01176. EDP Sciences, 2023. <https://doi.org/10.1051/e3sconf/202339101176>

- [17] Awaar, Vinay Kumar, Rajshri Simhadri, Tharuni Jalla, Mounika Bagari, Siri Aggarapu, and A. Hussien Abbas. "Parameter estimation and analysis of BLDC motor drive for electric vehicles application." In *E3S Web of Conferences*, vol. 391, p. 01177. EDP Sciences, 2023. <https://doi.org/10.1051/e3sconf/202339101177>
- [18] Awaar, Vinay Kumar, Sandhya Rani, Pravardh Naragani, Sasidhar Talluri, Samanvita Polisetty, Satya Sreyas Vakkalanka, and Hassan Mohmmmed Al-Jawahry. "Speed Control of Induction Motor using Digital Signal Processor TMS320F28027F." In *E3S Web of Conferences*, vol. 391, p. 01178. EDP Sciences, 2023. <https://doi.org/10.1051/e3sconf/202339101178>
- [19] Awaar, Vinay Kumar, Venkatesh Chityala, Praveen Juge, and S. Tara Kalyani. "Intensifying The Performance of Dynamic Voltage Restorer Using Optimized PI Controller Based Harris Hawks Optimization (HHO) Algorithm." In *2022 IEEE 2nd International Conference on Sustainable Energy and Future Electric Transportation (SeFeT)*, pp. 1-6. IEEE, 2022. ISBN:978-1-6654-8057-4. <https://ieeexplore.ieee.org/document/9909154>
- [20] Awaar, Vinay Kumar, MN Sandhya Rani, D. Kavya Kirthi, Ch Sindhu, P. Samanvita, and P. Sai Keerthana. "Implementation of Digital Filters to Improve Dynamic Response of A Single Phase PWM Rectifier." In *2022 IEEE 2nd International Conference on Sustainable Energy and Future Electric Transportation (SeFeT)*, pp. 1-6. IEEE, 2022. ISBN:978-1-6654-8057-4. <https://ieeexplore.ieee.org/document/9908997>
- [21] Awaar, Vinay Kumar, Neelima Jampally, Haritha Gali, and Rajshri Simhadri. "Real-Time BLDC Motor Control and Characterization Using TMS320F28069M with CCS and GUI." In *2022 IEEE 2nd International Conference on Sustainable Energy and Future Electric Transportation (SeFeT)*, pp. 1-6. IEEE, 2022. ISBN:978-1-6654-8057-4. <https://ieeexplore.ieee.org/document/9908662>
- [22] Awaar, Vinay Kumar, Rajshri Simhadri, and Praveen Juge. "Comparative Study And Experimentation of Speed Control Methods of BLDC Motor using DRV8312." In *2022 IEEE 2nd International Conference on Sustainable Energy and Future Electric Transportation (SeFeT)*, pp. 1-6. IEEE, 2022. ISBN:978-1-6654-8057-4. <https://ieeexplore.ieee.org/document/9909121>
- [23] Awaar, Vinay Kumar, MN Sandhya Rani, G. Sandhya Rani, Pravardh Naragani, Sasidhar Talluri, and Satya Sreyas Vakkalanka. "Design and Development of a Three Phase Induction Motor Drive using NI-myRIO." In *2022 IEEE 2nd International Conference on Sustainable Energy and Future Electric Transportation (SeFeT)*, pp. 1-5. IEEE, 2022. ISBN:978-1-6654-8057-4. <https://ieeexplore.ieee.org/document/9908900>

- [24] Awaar, Vinay Kumar, Nagilla Anjali, MN Sandhya Rani, Sravani Bannuru, Sumalatha Tangallapally, and Aggarapu Siri. "Parameter Estimation and Speed Control of FOC Based PMSM Drive Using F28379D." In *2022 IEEE 2nd International Conference on Sustainable Energy and Future Electric Transportation (SeFeT)*, pp. 1-6. IEEE, 2022. ISBN:978-1-6654-8057-4 <https://ieeexplore.ieee.org/document/9909177>
- [25] Awaar, Vinay Kumar, Pujitha Dupati, S. Tara Kalyani, and Praveen Jugge. "A LabVIEW based Variable Frequency Drive for Voltage Source Inverter Fed Induction Motor." In *2022 IEEE 2nd International Conference on Sustainable Energy and Future Electric Transportation (SeFeT)*, pp. 1-5. IEEE, 2022. ISBN:978-1-6654-8057-4 <https://ieeexplore.ieee.org/document/9909371>
- [26] Awaar, Vinay Kumar, Rajshri Simhadri, Venkatesh Chityala, and Praveen Jugge. "DSP Based Testing Platform for Characterization of BLDC Motor Performance Using TMS320F28069." In *E3S Web of Conferences*, vol. 309, p. 01145. EDP Sciences, 2021. <https://doi.org/10.1051/e3sconf/202130901145>
- [27] Thota, Someshwara, Vinay Kumar Awaar, Praveen Jugge, and S. Tara Kalyani. "Grid-Connected Rectifier Based Dynamic Voltage Restorer To Improve Power Quality By Compensating Voltage Sag And Swell." In *E3S Web of Conferences*, vol. 309, p. 01108. EDP Sciences, 2021. <https://doi.org/10.1051/e3sconf/202130901108>
- [28] Kasala, Chaitanya, Vinay Kumar Awaar, and Praveen Jugge. "Power quality enhancement using Artificial Neural Network (ANN) based Dynamic Voltage Restorer (DVR)." In *E3S Web of Conferences*, vol. 309, p. 01100. EDP Sciences, 2021. <https://doi.org/10.1051/e3sconf/202130901100>
- [29] Sattu, Shravani, Vinay Kumar Awaar, and Praveen Jugge. "Speed control of robust position sensor less PMBLDC motor by Fuzzy controller." In *E3S Web of Conferences*, vol. 309, p. 01063. EDP Sciences, 2021. <https://doi.org/10.1051/e3sconf/202130901063>
- [30] V. K. Awaar, P. Jugge, S. Tara Kalyani and S. Thota, "Validation of SRFPI Control Methodology for Voltage Sag Compensation with a Dynamic Voltage Restorer to improve Power Quality," *2021 International Conference on Sustainable Energy and Future Electric Transportation (SEFET)*, 2021, ISBN:978-1-7281-5681-1, pp. 1-6, doi: 10.1109/SeFet48154.2021.9375702. <https://ieeexplore.ieee.org/document/9375702>
- [31] Kummari Geethika, Vinay Kumar Awaar, Praveen Jugge "Adoption of Multilevel Inverter based Dynamic Voltage Restorer for Power Quality Improvement with Adjustable DC-Link", eISSN: 2267-1242, *E3S Web Conf. 184, 01055 (2020)* <https://doi.org/10.1051/e3sconf/202018401055>



- [32] Venu Gopal Mangali, Shravan Kumar P, Vinay Kumar Awaar, and Praveen Jugge, “DSP based Voltage Source Inverter for an application of Induction Motor control”, eISSN: 2267-1242, *E3S Web Conf.* 184, 01057 (2020)  
<https://doi.org/10.1051/e3sconf/202018401057>
- [33] Bondili Saibindu Bai, Vinay Kumar Awaar, Jugge Praveen, “Development of Multilevel Cascaded H-bridge Inverter Based Dynamic Voltage Restorer (DVR)”, *International Journal of Innovative Technology and Exploring Engineering (IJITEE)* ISSN: 2278-3075, Volume-8 Issue-12, October 2019, 146-149.  
<https://www.ijitee.org/wp-content/uploads/papers/v8i12/L34941081219>
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<https://www.ijitee.org/wp-content/uploads/papers/v8i12/L26011081219>
- [35] Baireddy Ekanath Reddy, J Praveen, Vinay Kumar A “Implementation of DSP Based Voltage Source Inverter (VSI) by using Sinusoidal Pulse Width Modulation Technique”, *International Journal of Recent Technology and Engineering (IJRTE)* ISSN: 2277-3878, Volume-8 Issue-2, July 2019, pp.4176-4180.  
<https://www.ijrte.org/wp-content/uploads/papers/v8i2/B3262078219>
- [36] Awaar, V.K., Jugge, P. & Tara Kalyani, “Validation of Control Platform Using TMS320F28027F for Dynamic Voltage Restorer to Improve Power Quality,” *S. Journal of Control Automation and Electrical Systems* 30, no.4 (2019): pp 601-610.  
<https://doi.org/10.1007/s40313-019-00480-z>
- [37] Vinay Kumar Awaar, Praveen Jugge, Tara Kalyani S, “Implementation of a Real-Time Control Platform for Dynamic Voltage Restorer to Improve Power Quality”, 7<sup>th</sup> *International Conference on Recent Engineering & Technology (ICRET-17)*, Matrusri Engineering College, Hyderabad, April 2017.
- [38] Vinay Kumar Awaar, Praveen Jugge, Tara Kalyani S, “Optimal Design and Testing of a Variable Frequency Drive”, 7<sup>th</sup> *International Conference on Recent Engineering & Technology (ICRET-17)*, Matrusri Engineering College, Hyderabad, April 2017.
- [39] V. K. Awaar, P. Jugge and Tara Kalyani S, “Mitigation of voltage sag and Power Quality improvement with an optimum designed Dynamic Voltage Restorer,” 2016 *IEEE International Conference on Power Electronics, Drives and Energy Systems (PEDES)*, Trivandrum, 2016, ISBN:978-1-4673-8888-7, pp.1-5.  
doi: 10.1109/PEDES.2016.7914365.  
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- [40] V. K. Awaar, P. Jugge and Tara Kalyani S, “Optimal design and testing of A Dynamic Voltage Restorer for Voltage sag compensation and to improve Power Quality,” 2016

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- [41] V. K. Awaar, P. Jugge and Tara Kalyani S, "Field test of cost-effective Voltage Source Inverter for driving an Induction Motor," *2015 Annual IEEE India Conference (INDICON)*, New Delhi, 2015, ISBN: 978-1-4673-7399-9, pp.1-6. doi: 10.1109/INDICON.2015.7443833.  
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[http://www.psgtech.edu/journal/Vol10\\_Sep1408.html](http://www.psgtech.edu/journal/Vol10_Sep1408.html)
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- [45] Vinay Kumar Awaar M N Sandhya Rani, D Prasad Rao, "A Novel Method to Improve the Dynamic Response of a Single Phase PWM Rectifier by Implementing Digital Filter", *International Journal of Scientific Engineering and Technology Research*, ISSN: 2319-8885, 2015, Vol.4, No.33, pp. 6626 – 6633.
- [46] J Praveen L Sravan Kumar, Vinay Kumar Awaar, "Mitigation of Voltage Sag to Improve Power Quality by Dynamic Voltage Restorer", *2015 National Conference on Innovations and Design Challenges in Electrical & Medical Electronics*, Hyderabad, ISBN:978-1-944541-82-8, 2015, pp. 92 – 96.
- [47] Vinay Kumar Awaar, K Swetha, "Implementation of Digital Filter to Improve Dynamic Response of a Single Phase PWM Rectifier", *2014 International conference on innovations in Electrical & electronics engineering*, ISSN 2319-1805.
- [48] Vinay Kumar Awaar, Pradeep M Nirgude, D Devendranath, "Implementation of FIR Filters in Reduction of Noise and Smoothing of Data for Evaluation of Lightning Impulses", *2014 National High Voltage Engineering Conference (NHVEC)*, pp. 26-30.
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- [53] Vinay Kumar Awaar, Pradeep M Nirgude, “Lightning Impulses Evaluation by Reducing Noise & Smoothing the Data Using FIR Filters”, *2010 National Power Systems Conference*, pp. 738-741. <https://www.iitk.ac.in/npsc/Papers/NPSC2010/7067>

#### **Published Book Chapters:**

- [1] Awaar, Vinay Kumar, and Praveen Juggé. "IoT-Based Robotic Arm." In *Blockchain Technology for IoT and Wireless Communications*, pp. 65-78. CRC Press, 2024. <https://www.taylorfrancis.com/chapters/edit/10.1201/9781003269991-6/>
- [2] Vinay Kumar, Awaar, Abhignya Rajapu, Kalaka Goutham, Yerravati Shiva Prasad Goud, and Madisetty Anuraag. "Weight-Based Object Segregation Using 5 DOF Robotic Arm." In *Advances in Modelling and Optimization of Manufacturing and Industrial Systems: Select Proceedings of CIMS 2021*, pp. 441-453. Singapore: Springer Nature Singapore, 2023. [https://doi.org/10.1007/978-981-19-6107-6\\_31](https://doi.org/10.1007/978-981-19-6107-6_31)
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