

## Dr. Vinayaka K U

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### Education

	Degree	Year	Institute	Specialization
1	B.E	2006	University BDT college of Engineering, Davangere, Karnataka	Electrical and Electronics Engineering
2	M.Tech ()	2012	B M S college of engineering   Bengaluru, Karnataka	Power Electronics
3	Ph.D	2023	Visvesvaraya Technological University, Belagavi, Karnataka	Electrical Engineering

### Professional Experience

	Date (from-to)	Designation	Organization
1	13/08/2013-Till date	Assistant Professor	Siddaganga Institute of Technology, Tumkur
2	01/06/2010-12/08/2013	Assistant Professor	Nitte Meenakshi Institute of Technology, Bangalore
3	21/02/2007-31/05/2008	Graduate Trainee Engineer	Kirloskar Electric Company, Bangalore
4	12/08/2006 - 14/02/2007	Production Engineer	VT switchgears Pvt Ltd, Bangalore

### Positions held

*NCC care taker-2014 to 2017*

### Affiliations of Professional organizations

IEEE Member-membership id (100338877)

## Awards and Honors

**Best Paper award in 2022 Third International Conference on Intelligent Computing Instrumentation and Control Technologies (ICICICT) for paper titled Modeling and Simulation of Electric Furnace in Steel Industry for Power Quality Analysis.**

**Best Paper award in International Conference on Intelligent Algorithms for Computational Intelligence Systems (IACIS- 2024) for paper titled Power quality evaluation and improvement in Electric arc furnace using UPQC.**

## Courses Taught

### Undergraduate Courses

Power Electronics  
Electric Power Quality  
Electric Drives  
Solar and Wind Energy Conversion System  
Power Generation Transmission and Distribution  
Utilization of Electrical Power  
Introduction to Electrical Engineering

### Postgraduate Courses

- Power Electronic Converters
- Power Electronic application to Renewable energy sources
- Modelling and simulation of power electronics system
- Electric Drives
- Advance Control Theory
- Power Semiconductor devices

## Research Guidance

Sl. no	Name of the Scholar	Title	Year of completion
1	Vandana R	Selective harmonic elimination in multilevel inverter using metaheuristic optimization algorithms	On going

## Research Areas

- Power Quality Evaluation and Improvement techniques
- Renewable energy sources
- Power Electronic Converters

Journals

- **1. Estimation of Electric Arc Furnace Parameters Using Least-Square Support Vector Machine**, SN Computer Science, Volume 4, Year 2023, Pages 276, DOI:10.1007/s42979-022-01648-2
- **2. Analysis of current harmonics compensation using various active filter topologies**, Materials Today: Proceedings 2022-04 | Journal article DOI: 10.1016/j.matpr.2022.03.411 Part of ISSN: 2214-7853
- **3. Prediction of Arc Voltage of Electric Arc Furnace Based on Improved Back Propagation Neural Network**, SN Computer Science 2021-05 | Journal article DOI: 10.1007/s42979-021-00556-1 Part of ISSN: 2662-995X Part of ISSN: 2661-8907
- **4. Electric arc furnace (EAF) modelling and comparative study of flicker mitigation techniques**, International Journal of Advanced Science and Technology 2019 | Journal article EID: 2-s2.0-85080082796 Part of ISSN: 22076360 20054238
- **5. Investigation of power quality disturbances in an electric arc furnace**, Asian Journal of Electrical Sciences ISSN: 2249- 6297, Vol. 7, No. 1, 2018, pp. 1-5

Conference Proceedings

- **1. Performance Evaluation of Reduced Switch Multi Level Inverter With LSPWM and SHE**, International Conference on Smart Systems for Applications in Electrical Sciences ICSSSES 2025, Year 2025
- **2. Power Quality Evaluation and Improvement in Electric Arc Furnace using UPQC**, 2024 International Conference on Intelligent Algorithms for Computational Intelligence Systems (IACIS), Year 2024
- **3. Harmonics and Voltage flicker investigation of different Electric Arc Furnace models on Power Systems**, 2024 International Conference on Electrical, Electronics and Computing Technologies, ICEECT 2024, Year 2024
- **4. Selective Harmonic Elimination in Multilevel inverter using Grasshopper Optimization algorithm**, International Conference on Smart Systems for Applications in Electrical Sciences ICSSSES 2024, Year 2024
- **5. Modeling and Simulation of Electric Furnace in Steel Industry for Power Quality Analysis**, 2022 Third International Conference on Intelligent Computing Instrumentation and Control Technologies (ICICICT)
- **6. A Concise review of different standards for performance testing of Lithium-ion Batteries for Electric Vehicle applications**, 2020 IEEE International Conference on Power Systems Technology (POWERCON)
- **7. Power Factor Regulation Using Landsman Converter Fed BLDC Motor Drive**, 2018 3rd IEEE International Conference on Recent Trends in Electronics, Information & Communication Technology (RTEICT)

- 8. **Review on characteristic modeling of electric arc furnace and its effects**, 2017 International Conference on Intelligent Computing, Instrumentation and Control Technologies (ICICICT)
- 9. **Adaptable speed control of Bridgeless PFC Buck-Boost converter VSI fed BLDC motor drive**, 2016 IEEE 1st International Conference on Power Electronics, Intelligent Control and Energy Systems (ICPEICES)
- 10. **Applications of fused DC-DC converters using hybrid wind-solar systems**, 2016 IEEE 1st International Conference on Power Electronics, Intelligent Control and Energy Systems (ICPEICES)
- 11. **Analysis of BLDC motor performance using space vector pulse width modulation**, 2016 IEEE 1st International Conference on Power Electronics, Intelligent Control and Energy Systems (ICPEICES)
- 12. **Speed control of Induction motor drive using PFC CUK converter fed quasi Z-source inverter**, 2016 International Conference on Computation of Power, Energy Information and Communication (ICCPEIC)
- 13. **A CUK-SEPIC fused converter topology for wind-solar hybrid systems for stand-alone systems**, 2015 IEEE Power, Communication and Information Technology Conference (PCITC)
- 14. **Hybrid wind-solar systems using CUK-SEPIC fused converter with quasi-Z-source inverter**, 2015 IEEE Power, Communication and Information Technology Conference (PCITC)
- 15. **A vector control-based shunt current compensation scheme for power quality improvement in high power radiology applications**, 2015 International Conference on Power and Advanced Control Engineering (ICPACE).

#### Book Chapters

- 1. **Comparative Analysis of Family of Luo Converter for Renewable Energy Applications**, Studies in Infrastructure and Control 2022
- 2. **Comparative Analysis of High-Gain Transformerless DC–DC Converter for DC Mircogrids**, Studies in Infrastructure and Control 2022
- 3. **Charge/Discharge Control Design Models of Li-Ion Battery in Electric Vehicles Using MATLAB/Simulink**, Lecture Notes in Electrical Engineering 2021
- 4. **Performance Analysis of Harmonic Suppression Techniques**, Lecture Notes in Electrical Engineering 2021

- **5. Improvement of Power Quality in an Electric Arc Furnace Using Shunt Active Filter**, Lecture Notes in Electrical Engineering 2019
- **6. Three-Phase Shunt Active Filter for Cuk-Sepic Fused Converter with Solar–Wind Hybrid Sources**, Lecture Notes in Electrical Engineering 2019

Reviewer of Journals

- **International Journal of Applied Power Engineering (IJAPE).**
- **The Journal of Supercomputing**
- **International Journal of Power Electronics and Drive Systems (IJPEDS).**
- **Springer Nature- Electrical Engineering**
- **IEEE Open Journal of the Industrial Electronics Society**
- **RECENT ADVANCES IN ELECTRICAL & ELECTRONIC ENGINEERING**
- **Journal of The Institution of Engineers (India)**
- **Archives of Electrical Engineering**