

FACULTY PROFILE

Name of the Staff : **K.KARTHIK KUMAR**
Official Address with E-mail Id : Assistant Professor,
EEE Department,
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K.R. Nagar
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1. PERSONAL DETAILS

Age as on 05.06.2022 : 27 years 6 months
Date of Birth : 22/11/1995
Sex & Marital Status : Male & Unmarried
Citizenship : Indian
Qualification : M.E.,
Date of joining : 10/06/2019
Present status : Assistant Professor

2. QUALIFICATION

Degree	Programme and Specialization	Class	Month & Year of Passing	Institute/University
PhD	Power Electronics and Drives	-	Pursuing	Anna University, Chennai
M.E	Power Electronics and Drives	I Class with distinction (Rank Holder) (95.2%)	April 2019	Mepco Schlenk Engineering College, Sivakasi./ Anna University
B.E	EEE	I Class (81.9%)	April 2017	Mepco Schlenk Engineering College, Sivakasi./ Anna University

3. TEACHING EXPERIENCE

Designation	Institution/ Organization	Period	Nature of Duties
Assistant Professor	National Engineering College, Kovilpatti.	10-06-2019 to present	Teaching and Research
Teaching Experience as of 05.06.2023			3 Years 11 Months

4. ACADEMIC ACTIVITIES:

4.1 Courses taught:

Course Title	U.G. or P.G.
• Basic Electrical & Electronics Engineering (2015 Regulation)	U G

<ul style="list-style-type: none"> • Digital signal processing & its applications (2015 Regulation) • Electrical circuit analysis (2019 regulation) • Energy Auditing and Management (2015 Regulation) • Project management and finance (2015 Regulation) • Electric Vehicle Machines and Drives (2019 regulation) • Power Quality (2015 Regulation) • Battery Mangement Systems and Modeling • Autonomos Intelligent Vehicle 	
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4.2 Workshops/Seminars/FDPs/Webinar Attended:

S.No	Date	Title	Venue
1	1 st -3 rd March 2018	Three day workshop on “Industrial Automation using PLC,HMI& Drives”	Mepco Schlenk Engineering College, Sivakasi
2	16 th -17 th April 2018	Two days National Workshop on “Modeling and Closed Loop Control of Permanent Magnet Machines Using MATLAB”	Mepco Schlenk Engineering College, Sivakasi
3	19 th -21 st April 2018	Three days’ workshop on “Role of Virtual Instrumentation in Power Quality Issues using LabVIEW”	Mepco Schlenk Engineering College, Sivakasi
4	13 th -15 th June 2018	Three days workshop on “Power Converters and its Applications”	Kamaraj College of Engineering and Technology
5	7 th -8 th January 2019	Two days National Workshop on “Productive Tools for Writing Journals and Articles”	AAA College of Engineering and Technology
6	1 st -2 nd March 2019	Two days Technical Seminar on “IoT in 5G Wireless Communication”	Mepco Schlenk Engineering College, Sivakasi
7	5 th – 9 th June, 2020	FDP on “Emerging Research Area in Engineering”	SRM Institute of Science and Technology
8	27 th – 31 st July, 2020	FDP on “Research Perspectives of Artificial Intelligence in Electrical Engineering”	SRI Ramakrishna Institute of Technology
9	24 th – 28 th Aug, 2020	FDP on “Practical challenges in the design and development of EVs”	NIT, Calicut
10	Jul-Oct 2021	FDP on “Electric Vehicles and Renewable Energy”	NPTEL, IIT Madras
11	1 st -3 rd June 2021	FDP on “Impact of Controllers in Power Electronics Converter for Electric Vehicles”	Dr.N.G.P.Institute of Technology, Coimbatore
12	16 th June 2021	Webinar on “IEEE Xplore”	EBSCO

13	19 th -23 rd July 2021	FDP on “Recent Advances in E-Mobility and Charging”	NIT, Trichy
14	23 rd to 25 th Sep 2021	FDP on “Capacity Building of Students On Environmental Health”	Ayya Nadar Janaki Ammal College
15	23 rd 30 th Dec 2021	FDP on “Grid connected Electric Vehicle charging station with renewable energy power”	AVC College of Engineering
16	23 rd -28 th Aug 2021	FDP on “Digital Teaching Methods in Higher Education”	Hidusthan College of Arts and Science
17	18 th -22 nd Oct 2021	Workshop on “Smart Grid Empowering Smart Cities”	NIT, Calicut
18	18 th Jan 2022	Webinar on “IEEE Xplore”	EBSCO
19	15 th -21 st SEP 2022	FDP on “Next Generation Application in Electrical and Electronics Engineering”	NIT, Patna
20	26 th 29 th SEP 2022	FDP on “Renewable Energy Systems Laboratory”	SSN college of Engineering, Chennai
21	17 th – 21 st OCT 2022	FDP on “Design and Development of Electric Vehicles: Research Challenges and Opportunities”	Govt. College of Technology, Coimbatore.

4.3 Industrial Training/ Industry Know How Programme attended:

S.No	Title	Period	Venue
1	Industrial Training service on “State flow for logic driven system modelling, Modelling physical systems with Simscape, Customized course (BMS)”	4 th – 7 th Jan, 2021	Mathworks
2	Industrial Training on “Master class on EV design using MATLAB”	23 rd Aug. to 21 st Sep 2021	Pantech e learning Pvt
3	Industry Know How – “Green Solar Technology”	21 st – 23 rd Mar, 2022	Green Solar Tech, Madurai
4	Industry Know How – “Vike Bike India Pvt Ltd”	13 th -17 th Jan, 2023	Vike Bike India Pvt Ltd, Theni

4.4 Short term Courses

Sl. No	Couse title	Certified by	Duration
1	MEPEXPO'16	<i>Mepexpo'16 by Mepco Schlenk Engineering College</i>	19-08-2016 to 20-08-2016
2	Business English Certificate - Vantage	<i>University Of Cambridge, UK</i>	03 to 18-02-2016 and 26-04-2016
3	GETS-level 5	<i>Global English Testing Service</i>	02 to 03.03.2018 and 21.03.2018

4.5 Online Certification Completed:

S. No	Certification	Period	Organizers	Remarks
1.	NPTEL - Online Certification on <i>“Technical English for Engineers”</i>	Sep-Nov 2018 (8 Week)	Indian Institute of Technology (IIT), Madras	Successfully completed
2.	NPTEL - Online Certification on <i>“Body Language: Key to Professional Success”</i>	July-September 2019 (4 Week)	Indian Institute of Technology Roorkee	Successfully completed with Elite
3.	Coursera - <i>“Introduction to Power Electronics”</i>	July – Aug 2019 (5 Weeks)	University of Colorado	Successfully completed with 90% Grade
4.	Open Learn - <i>“Biofuels”</i>	July-September 2019 (4 Weeks)	The Open University	Successfully completed
5.	Udemy - <i>“8051 Microcontroller”</i>	August - September 2019 (2 Hours)	Udemy	Successfully completed
6.	Udemy - <i>“Basic of Electric Circuits”</i>	Sep 2019 (4 Hours)	Udemy	Successfully completed
7.	Udemy - <i>“Engineering simulation with SimScale: Drone Aerodynamics”</i>	Oct 2019 (4 Hours)	Udemy	Successfully completed
8.	Udemy <i>“Introduction to FPGA's and prototyping with the Elbert”</i>	Oct 2019 (5 Hours)	Udemy	Successfully completed
9.	Udemy - <i>“Start Kali Linux, Ethical Hacking and Penetration Testing”</i>	Nov 2019 (4 Hours)	Udemy	Successfully completed
10.	Udemy - <i>“Build your own Super Computer with Raspberry Pis”</i>	Dec 2019 (3 Hours)	Udemy	Successfully completed
11.	Mathworks - <i>“MATLAB Onramp”</i>	Jan 2020 (5 Hours)	Math Works	Successfully completed with 100% Grade
12.	Mathworks - <i>“Machine Learning Onramp”</i>	Jan 2020 (8 Hours)	Math Works	Successfully completed with 100% Grade
13.	Coursera - <i>“Introduction to Programming with MATLAB”</i>	Feb 2020 (6 Week)	Vanderbilt University	Successfully completed with 100% Grade
14.	Udemy - <i>“LEGO mind storms EV3 Robotics”</i>	April 2020	Udemy	Successfully completed
15.	Coursera - <i>“Electric Power system”</i>	April – May 2020	The state university of New York	Successfully completed with 95%

				Grade
16.	Coursera - “Introduction to Solar cells”	April – May 2020	Technical University of Denmark	Successfully completed with 98% Grade
17.	Coursera - “Introduction to battery management systems”	April – May 2020	University of Colorado	Successfully completed with 91.9% Grade
18.	Coursera - “Motors and its control circuits”	Sep-Oct 2020	University of Colorado	Successfully completed with 90% Grade
19.	NPTEL – “Fundamentals of electrical engineering”	Sep-Dec 2020	IIT, Kharagpur	Elite
20.	Mathworks “Control Design Onramp with Simulink”	Oct-2021	Mathworks	Successfully completed
21.	Mathworks “Signal Processing Onramp”	Oct-2021	Mathworks	Successfully completed
22.	Coursera “Electric Vehicles and Mobility”	Jan-2022	Paris Tech	Successfully completed with 98% Grade
23.	NPTEL- “Electric Vehicle and Renewable energy”	Jul-Oct 2021	IIT Madras	Successfully completed
24.	Coursera “Introduction to Self-Driving Cars”	May-2023	University of Toronto	Successfully completed with 98.9% Grade
25.	NPTEL- “Recent Advances in Transmission Insulators”	Jan-Feb 2023	IIT Madras	Successfully completed

4.5 Short term Courses / Seminars / Conference/ Workshops Organized:

S. No	Course Title	Period	venue	Participants
1.	MATLAB Onramp	1 Day December 2019	National Engineering College, Kovilpatti.	20
2.	MATLAB PROGRAMMING CONTEST – PART I	13.10.2020 (Tuesday)	National Engineering College, Kovilpatti.	49
3.	MATLAB simulink Demo	24.10.2020	National Engineering College, Kovilpatti.	42
4.	MATLAB Cody contest 2020	Sep- Dec 2020	National Engineering College, Kovilpatti.	150 Registered, and received medals
5.	Careers at MATLAB – part I	2 Hours, 06.11.2020	National Engineering College, Kovilpatti.	20
6.	MATLAB simulink Onramp	1 day Jan 2021	National Engineering College, Kovilpatti.	65
7.	Value-added course on “BASICS OF MATLAB & ITS APPLICATIONS”	ODD semester 2021-22	National Engineering College, Kovilpatti.	65
8.	Value-added course on “BASICS OF MATLAB & ITS APPLICATIONS”	ODD semester 2022-23	National Engineering College, Kovilpatti.	50

5. RESEARCH PAPER PUBLICATIONS

5.1 International Conference Publication

Sl. No	Date	Paper title	Conference	Publication
1	23 rd March 2019	“Efficiency Enhancement of Isolated Quasi Y-Source DC/DC Boost Converter for EV Battery Charging Application”	2019 IEEE International Conference on Innovations in Communication, Computing and Instrumentation (ICCI 2019)	IEEE Digital Explorer Library
2	4 th -5 th May 2018	“Design and Simulation of DC-DC Interleaved ZETA Converter for Renewable Applications”	International Conference on Recent Advancements in Electrical, Electronics and Control Engineering (IConRAEeCE'18) - 4th & 5th May, 2018 Department of EEE, Mepco Schlenk Engineering College (Autonomous), Sivakasi.	IConRAEeCE'18
3	31 st Mar – 1 st April 2021	Performance analysis of PI Controller based modern boosting topology for EV battery charging applications	International E- Conference on Recent advances in computation, communication, Internet of Things and Artificial Intelligence	Conference Proceedings
4	31 st Mar – 1 st April 2021	Vehicle Theft Detection using GSM and GPS	International E- Conference on Recent advances in computation, communication, Internet of Things and Artificial Intelligence	Conference Proceedings
5	31 st Mar – 1 st April 2021	Smart Garbage Systems	International E- Conference on Recent advances in computation, communication, Internet of Things and Artificial Intelligence	Conference Proceedings
6	8 th July 2021	<u>Design and Development of Closed Loop PI Controlled solar integrated modified A source dc to dc Boosting Topology for standalone battery charging system</u>	2021 6th International Conference on Communication and Electronics Systems (ICCES) (10.1109/ICCES51350.2021.9488941)	IEEE Explore
7	23 September 2021	Steady state and Dynamic performance investigation of Solar interlinking BLDC motor for electric vehicle application	2021 Second International Conference on Electronics and Sustainable Communication Systems (ICESC) 10.1109/ICESC51422.2021.9532830	IEEE Explore
8	20 January 2022	13-level Inverter Configuration with a Reduced Auxiliary Circuit for Renewable Energy Applications	2021 5th International Conference on Electronics, Communication and Aerospace Technology (ICECA) 10.1109/ICECA52323.2021.9675929	IEEE Explore
9	30 March 2022	A Survey on various Electric Vehicle batteries – Battery power management and performance monitoring system	2022 Second International Conference on Artificial Intelligence and Smart Energy (ICAIS) 10.1109/ICAIS53314.2022.9743050	IEEE Explore
10	29 July 2022	Design and Implementation of a Solar Energy-Supported Standalone Electric Vehicle Charging Point/Panel using MVO Optimization	2022 7th International Conference on Communication and Electronics Systems (ICCES) 10.1109/ICCES54183.2022.9835900	IEEE Explore
11	20/10/2022	<u>An improved Dual Active Bridge Power Converter for EV batteries</u>	2022 3rd International Conference on Smart Electronics and Communication (ICOSEC)	IEEE Explore

			10.1109/ICOSEC54921.2022.9951950	
12	23-25 January 2023	<u>An Automatic Solar Panel Performance Monitoring System and Load Control using IoT Technique</u>	2023 5th International Conference on Smart Systems and Inventive Technology (ICSSIT) 10.1109/ICSSIT55814.2023.10060886	IEEE Explore
13	23-25 January 2023	<u>A Novel Converter Design for Energy Management in Electrical Vehicles</u>	2023 5th International Conference on Smart Systems and Inventive Technology (ICSSIT) 10.1109/ICSSIT55814.2023.10061018	IEEE Explore
14	02-04 February 2023	<u>Exploiting Reliable Power from Independent PV-Battery Systems by Combining Improved INC with Power Management Circuitry</u>	2023 Third International Conference on Artificial Intelligence and Smart Energy (ICAIS) 10.1109/ICAIS56108.2023.10073825	IEEE Explore
15	23-25 February 2023	<u>Smart Grid Peer-to-Peer Exchanging Energy System using Block Chain</u>	2023 7th International Conference on Computing Methodologies and Communication (ICCMC) 10.1109/ICCMC56507.2023.10084032	IEEE Explore
16	23-25 February 2023	<u>Exploring Innovative IoT Solutions for Automated Battery Condition Detection in Electric Vehicles</u>	2023 7th International Conference on Computing Methodologies and Communication (ICCMC) 10.1109/ICCMC56507.2023.10083663	IEEE Explore
17	02-04 March 2023	Smart Attendance System using RFID and Raspberry Pi	2023 Second International Conference on Electronics and Renewable Systems (ICEARS) 10.1109/ICEARS56392.2023.10085186	IEEE Explore

5.2 International Journal Publication

S.No	Title of the Paper	Name of the Journal	Volume & Issue	Month & Year of Publication
1	Power Quality Analysis of Single Phase Full Bridge Rectifier Fed DC Motor Drive	International Journal of Innovative Research in Electrical, Electronics, Instrumentation and Control Engineering(IJIREEIC E)	Vol.6, Issue 11, November 2018	November 2018
2	Performance Analysis of Three-Phase Two Quadrant Controlled Converter for DC Load Applications	International Journal of Scientific Research in Science and Technology (IJSRST)	Volume 6, Issue 2, pp. 679-685, March-April 2019.	April 2019
3	Efficiency enhancement of Solar PV Powered Micro-integrated High Frequency Isolated Vehicle Battery Charging Converter	International Journal of Power Electronics and Drive System (IJPEDS)	Scopus Indexed (Vol. 10, No. 2, June 2019, pp. 953~960)	June 2019
4	'Optimization of Various Natural Ester Oils Impregnated Nomex Paper Performance in Power Transformer Applications under Different Ageing Conditions'	International Journal of Recent Technology and Engineering (IJRTE)	Scopus Indexed (Volume-8 Issue-3, September 2019. Page No.: 6245-6251)	September 2019
5	Stability Analysis Of Solar Assisted dc-dc Y-Source Boosting Topology Using State-Space Model	Sylwan	Annexure-I (Volume 163, Issue 12, pp. 550-568) Impact	November 2019

			factor=0.623	
6	High Efficient Solar Integrated an Isolated Dc-Dc Full-Bridge Converter for Electric Vehicle Battery Charging Application	International Journal of Innovative Technology and Exploring Engineering (IJITEE)	Scopus Indexed (Vol. 9, Issue No. 4, February 2020, pp. 432~437)	February 2020
7	A High Efficient Solar Assisted A-Source dc-dc Boost Converter for Electric Vehicle Battery Charging Application	International Journal Of Scientific & Technology Research	Scopus Indexed	March 2020
8	Single Switch, Boost converter with High Voltage gain for Fuel cell-based products	Solid state technology	Scopus Indexed Volume: 64 Issue: 2 Publication Year: 2021 (Annexure I)	March 2021
9	Efficiency enrichment of a Modern Boosting Topology for solar EV battery charging applications	Journal of Xidian University	VOLUME 15, ISSUE 3, 2021	March 2021
10	Evolutionary Algorithm Based Z-Source DC-DC Boost Converter for Charging EV Battery	Intelligent Automation And Soft Computing	Scopus Indexed Vol.34, No.2, 2022 Impact Factor= 1.7 https://doi.org/10.32604/iasc.2022.025396	May 2022
11	Optimization and prediction of incremental sheet forming parameters of Titanium grade 5 sheet using a response surface methodology and artificial neural network	Proceedings Of The Institution Of Mechanical Engineers Part C-Journal Of Mechanical Engineering Science	IF:1.75 https://doi.org/10.1177/09544062221133674	November 2, 2022
12	an improved design and performance enhancement of Y-source DC-DC boost combined phase shifted full bridge converter for electric vehicle battery charging applications	Journal of Electrical Engineering & Technology	IF: 1.528 https://doi.org/10.1007/s42835-023-01414-1	22 February 2023
13	Smart Emergency Charging of Electric Vehicle with Solar PV-based Backstepping Model-Free and critic RL Control Structure	Journal Of Control Engineering And Applied Informatics	IF: 1.29	2023/3/28
14	Load Voltage Balancing Using Marine Predator Algorithm for Power System Quality Improvement	Journal of Electrical Engineering & Technology	IF: 1.528 https://doi.org/10.1007/s42835-023-01522-y	15 May 2023
15	A simple robust mechanism of PV-supported dynamic voltage restorer using interval type-2 fuzzy logic controller	Automatika, Journal for Control, Measurement, Electronics, Computing and Communications	IF: 1.74 https://doi.org/10.1080/00051144.2022.2140390	21 May 2023

5.3 Funded Project:

S.No	Name of the faculty	Title of the Project	Funding Agency	Duration (yrs)	Amount in Lakhs	Period	Status
1.	Mr.F.Antony Jeffrey Vaz, Mr.K.Karthik Kumar	Cold Storage Container system using IOT	NewGen IEDC - DST	1	2.5	2022-23	Ongoing

5.4 Book Published:

S.No.	Name	Title of the paper	National / International	Year	ISBN/ISSN	publisher	Link
1	K. Karthik Kumar, AS Kamaraja, OR Saiyayappa	Integration of Renewable Energy Sources Using Matrix Converter	International	2021-22	978-6203854732	Lambert Academic Publishing	https://www.amazon.co.uk/Integration-Renewable-Energy-Sources-Converter/dp/6203854735

5.5 Reviewer in Journals:

- Active Reviewer in “Simulation: Transaction of the society for Modeling and Simulation International”.
- Active Reviewer in “Cybernetics and Systems”.

6. MEMBERSHIP IN PROFESSIONAL BODIES :

Name of Society	Grade of Membership
<ul style="list-style-type: none"> • IRED Membership Status: (Associate Member UACEE) Membership No: AM101000584654 	Life Member
<ul style="list-style-type: none"> • IAENG Membership No: 241980 	Member

7. ADDITIONAL RESPONSIBILITIES HELD

- **Tutor** for the batch 2019-23
- **EEE Dept. Library** In charge (From June 2019 – Nov 2020)
- **EEE Dept. Library** In charge (From Nov 2020 - Till Date)
- **Department Result Analysis** – Assist (From June 2019 - Till Date)
- **GATE Forum – EEE**– Assist (From June 2019 - Till Date)
- **Power Electronics lab** – Assist (From June 2019 - Till Date)
- **NAAC Criteria 3** (Department level In charge – (2021-2022))
- **Extension and Outreach Cell** – Co – Convener (June 2021-Till Date)
- **Design Thinking – Mentor (2021-2022)**
- **NBA Criteria 5 – Incharge(From May 2022-Aug 2022)**
- **Tutor** for the batch 2020-24

PERSONNEL SOCIAL MEDIA AND RESEARCH MEDIUM LINK	
❖ <i>Vidwan_ID</i>	https://vidwan.inflibnet.ac.in/myprofile
❖ <i>Scopus_ID</i>	https://www.scopus.com/authid/detail.uri?authorId=57211343224
❖ <i>GoogleScholar_ID</i>	https://scholar.google.com/citations?hl=en&user=5-h2BfMAAAAJ&view_op=list_works&authuser=1&sortby=pubdate
❖ <i>ResearchGate_ID</i>	https://www.researchgate.net/profile/Karthik-Kumar-36
❖ <i>Researcher_ID</i>	https://www.webofscience.com/wos/author/record/AEU-8695-2022
❖ <i>Orcid_ID</i>	https://orcid.org/0000-0001-5831-7666
❖ <i>SlideShare_Profile</i>	https://www.slideshare.net/karthikkkk2
❖ <i>YouTube_Channel</i>	https://www.youtube.com/channel/UCwKYRSkC_zfz3uccybu211A
❖ <i>Facebook_Profile</i>	https://www.facebook.com/karthikkumar.k.102
❖ <i>Instagram_Profile</i>	https://www.instagram.com/karthik_kumar_kkk/
❖ <i>LinkedIn_Profile</i>	https://www.linkedin.com/in/karthik-kumar-kalirajan-304512104/
❖ <i>Twitter_Profile</i>	https://twitter.com/KarthikKK_007