POWER ELECTRONICS & DRIVES RESEARCH GROUP

Objectives:

The objective is to equip research group members with the capability to identify challenges in power electronic converters and electric drives, and to design and implement efficient control algorithms for industrial and real-time applications. The objectives of the Power Electronics & Drives Research Group are:

* To provide insight into the latest developments in power converters, motor drives, control strategies, and energy-efficient drive systems with a comprehensive understanding of device operation and system integration.

* To educate members in modeling, simulation, and design of power electronic systems using advanced design and simulation platforms.

* To conduct technical colloquiums to promote exchange of ideas and collaborative learning among faculty and researchers.

* To leverage laboratory infrastructure for hardware prototyping and experimental validation leading to high-impact research publications.

* To organize Faculty Development Programs periodically in emerging areas of power electronics and electric drives.

Members of Power Electronics & Drives Research Group

S.NO	Name of Faculty	Designation
1.	**Dr. K. Harinadha Reddy**	**Professor**
2.	Dr. J. Siva Vara Prasad	Professor
3.	Dr. A. V. G. A. Marthanda	Associate Professor
4.	Mr. P. Deepak Reddy	Associate Professor
5.	Mr. J. V. Pavan Chand	Sr. Asst. Professor
6.	Mrs. G. Tabita	Sr. Asst. Professor

Outcome of Power Electronics & Drives Research Group

		2025-26	2024-25
Journals	**SCI/ESCI**		**3**
	SCOPUS		**2**
	Online		
Conferences		**2**	**3**

JOURNALS

S.No	Names of the Author and Co-Authors	Title of the Paper	Name of the Journal	ISSN No	Month and Year	Indexing
A.Y.2025-26						
1.	S. Farook, B. V. S. Thrinath, M. Manohara, **G. Tabita**, M. Venkatesh and Vijaya Bhaskar. K,	A Fractional Controller for Load Frequency Control Tuned by Metaheuristic Algorithm,	*2025 International Conference on Recent Advances in Electrical, Electronics, Ubiquitous Communication, and Computational Intelligence (RAEEUCCI)*	-	2025	Conf.
2.	**J. V. Pavanchand**, E. N. Praveena, G. Vijay, K. K. Babu and B. V. S. Thrinath	Solar Based Surveillance Robot	2025 Second International Conference on Networks and Soft Computing (ICNSoC)	-	2025	IEEE Conf.
A.Y.2024-25						
1.	K. Harinadha Reddy	Adaptive extreme learning machine using soft computing fuzzy propositions—Validating operating state of solar energy system	Applied Soft Computing	1568-4946	October, 2024	SCIE
2.	**G. Tabita**, P. Umapathi Reddy	Design of interline hybrid continuous transimpedance turns ratio controlled tuning power filter: New	Electric Power Systems Research	0378-7796	October, 2024	SCIE

		approach to suppress harmonics in energy system				
3.	**G. Tabita,** P. Umapathi Reddy	Interline hybrid continuous converter impedance control-based tuning filter: effective harmonic suppression in DG-integrated electrical power grid	Electrical Engineering	0948 - 7921	November , 2024	SCIE
4.	Bibhu Prasad Ganthia, Praveen B. M., S. R. Barkunan **A. V. G. A. Marthanda**, N. M. G. Kumar, S. Kaliappan	Energy Management in Hybrid PV-Wind Battery Storage-Based Microgrid Using Monte Carlo Optimization Technique	Journal of Mechanics of Continua and Mathematical Sciences	2454 - 7190	Dec, 2024	Scopus
5.	Saji Krishna Pillai, Vinod Bakka, **J.V. Pavan Chand**, B. Divakar, B.V. Sai Thrinath, G. Mahaboobsubahan	Six-Phase Induction Motor Design and Analysis Using Wind-Driven Optimization	SSRG International Journal of Electrical and Electronics Engineering	2348 - 8379	June, 2024	Scopus
6.	Dankan Gowda V, Ratidev Samal, Premkumar Reddy, **A.V G.A. Marthanda**, Ravikiran Kamath Billady, P.V. Rajlakshmi	A Novel Framework for AI-Driven, Cloud Integrated Energy-Efficient IoT Solutions in Smart Homes	8th International Conference on Electronics, Communication and Aerospace Technology (ICECA)	-	Dec, 2024	IEEE Conf.
7.	**G. Tabita** and P. Umapathi Reddy	Modelling of Harmonic Filter—Improvement of Power Quality Indices Under	Advanced Engineering Optimization Through Intelligent Techniques	-	Oct, 2024	Springer Conf.

		Non-linear Loads: A Case Study				
8.	S. Farook, B.V. Sai Thrinath, S. Muthukaruppasamy , P. Ponmurugan, V. Kamatchi Kannan, **J.V. Pavan Chand**	A Grid-Integrated Electric Vehicles with Hybrid Energy Storage for Optimal Power Management	IEEE International Conference on Information Technology, Electronics and Intelligent Communication Systems (ICITEICS)	-	2024	IEEE Conf.

Books/ Chapters Published

Academic Year	Name Of The Authors	Title Of The Book / Chapter	Name Of The Publisher With Address	ISBN Number
2024-25	B.V. Sai Thrinath & S. Farook, T. Penchalaiah, **J.V. Pavan Chand,** P. Venkatesh, Gujjala Murali	Advanced Control Strategy For Grid-Connected DFIG Systems Using TSK Fuzzy Controllers	Taylor & Francis	978-1-032-90173-2

Staff colloquium

A.Y. 2025-26:

1. The staff colloquium is conducted on "Publishing Research Paper" by Dr. K. Harinadha Reddy on 16-10-2025.
2. The staff colloquium is conducted on "AI tools for Manuscript Preparation" by Dr. J. Siva Vara Prasad on 23-10-2025.

B.Tech Projects

A.Y. 2024-25:

S.NO	Project title	Name of supervisor
1.	LI-FI TECHNOLOGY IN VEHICLE COMMUNICATION SYSTEMS	Mr.P.Deepak Reddy
2.	DESIGN AND FABRICATION OF AN ELECTRIC TRICYCLE FOR ASSISTED MOBILITY	Dr. J. Siva Vara Prasad
3.	SOLAR BASED SURVEILLANCE ROBOT	Mr. J.V.Pavan Chand

4.	VEHICLE TO VEHICLE COMMUNICATION OF COLLISION DETECTION SYSTEM USING LI-FI AND ULTRASONIC SENSING DEVICES	Dr. K. Harinadha Reddy
5.	Dual Axis Servo Based Solar Tracker with MPPT and Self Cleaning Mechanism For Sustainable Energy	Dr.J.Siva Vara Prasad
6.	Smart Compost System With Renewable Energy Integration	Dr.A.V.G.A Martanda
7.	WIND-POWERED GRAVITY BATTERY: A SUSTAINABLE ENERGY STORAGE SYSTEM	Mr.J.V.Pavan Chand
8.	RAILWAY TRACK INSPECTION AND AUTOMATIC GATE CROSSING CONTROL SYSTEM	Mr P.Deepak Reddy
9.	IOT- ENABLED SMART LAMP POST FOR ADAPTIVE LIGHTING, TRAFFIC MANAGEMENT AND URBAN SURVEILLANCE	Mrs G.Tabita