



## National Institute of Technology, Tiruchirappalli: Performa for CV of Faculty/ Staff Members

---

### 8. Academic Qualifications (From Highest Degree to High School):

Examination	Board / University	Year	Division/ Grade	Subjects
Ph.D..	National Institute of Technology, Tiruchirappalli	2018	9.5	
M.E.	Anna University	2011	9.33 First class with distinction	Power Systems Engineering
B.E.	Anna University	2009	8.49 First class with distinction	Electrical and Electronics Engineering
HSC	Tamil Nadu State Board	2005	92 %	Maths, Physics, Chemistry, Biology
SSLC	Tamil Nadu State Board	2003	94 %	Maths, Science, Social Science

### 9. Academic/Administrative Responsibilities within the University

Position	Faculty/Department/Centre/Institution	From	To

### 10. Academic/Administrative Responsibilities outside the University

Position	Institution	From	To

### 11. Awards, Associateships etc.

Year of Award	Name of the Award	Awarding Organization

### 12. Fellowships

Year of Award	Name of the Fellowship	Awarding Organization	From (Month/Year)	To (Month/Year)
2013	Research Fellowship	Ministry of Human Resource Development (MHRD), India	July 2013	January 2017

# National Institute of Technology, Tiruchirappalli:

## Performa for CV of Faculty/ Staff Members

---

### 13. Details of Academic Work

- (i) Curriculum Development
- (ii) Courses taught at Postgraduate and Undergraduate levels
  - Electronic Devices and Circuits
  - Induction Motors and Transformers
  - Synchronous machines and DC machines
  - Analog Electronic Circuits
  - Power Electronics
  - Transmission and Distribution Systems
  - Embedded System Design for Power converter control
  - Power System Analysis and Control
  - Electrical Machines Lab
  - Electronic Devices and Analog Circuits Lab
  - Power Electronics Lab
- (iii) Projects guided at Postgraduate level
  - Reconfigurable AC-DC / DC-DC converter for low power residential applications
  - High Performance DC- DC Converter Design for Grid Connected PV System
  - Design and Development of High-Performance Flyback converter with Active Clamping
  - 6-Phase Interleaved Boost converter for Fuel Cell Electric Vehicle Applications
  - DC Fast charger for Electric Vehicles
- (iv) Other contribution(s)

### 14. Details of Major R&D Projects

Title of Project	Funding Agency	Duration		Status
		From	To	Ongoing/ Completed
Design & Development of High-Power Multi-output GaN based DC-DC converter with 70V input and Digital Control Loop	ISRO	2024	2026	Ongoing
Solar PV based electric vehicle charger with V2G and G2V capability for net-zero emission e-mobility	VGST, Govt. of Karnataka	2023	2025	Ongoing

**National Institute of Technology, Tiruchirappalli:  
Performa for CV of Faculty/ Staff Members**

Design and Development of highly efficient and high voltage gain DC-DC converter for grid connected PV System	Ind Arka Energy Pvt Ltd., Bangalore	2022	2024	Completed
Smart Electric Vehicle Supply Equipment with improved Reconfigurability, Economic, Availability and Performance (REAP)	SERB, DST	2021	2025	Ongoing

15. Number of PhDs guided

Name of the PhD Scholar	Title of PhD Thesis	Role(Supervisor/ Co-Supervisor)	Year of Award
Raghavendra Rao P	Investigation of Control Algorithms for PV System Under Partial Shading Conditions and their Effect on the efficiency of DC-DC Converter	Co-Supervisor	2022

16. Participation in Workshops/ Symposia/ Conferences/ Colloquia /Seminars/ Schools etc. (mentioning the role)

Date (s)	Title of Activity	Level of Event (International/ National/ Local)	Role (Participant/ Speaker/ Chairperson, Paper presenter, Any other)	Event Organized by	Venue

17. Workshops/ Symposia/ Conferences/ Colloquia/Seminars Organized (as Chairman/ Organizing Secretary/ Convenor / Co-Convenor)

Title of Activity	Level of Event	Date (s)	Role	Venue
-------------------	----------------	----------	------	-------

**National Institute of Technology, Tiruchirappalli:  
Performa for CV of Faculty/ Staff Members**

	(International/ National/ Local)			
Design and Development of Switched mode Power Converters	Local	23.01.2023 to 21.03.2023	Organizer and course instructor	NITK Surathkal
Applications of Power Electronics Technology for Electric Vehicle Systems	National	19.09.2022 to 30.09.2022	Co-coordinator	NITK Surathkal
Design and Development of Power Factor Correction Converter for Power Supply Equipment	National	1.3.2022 to 30.4.2022	Event Organizer	NITK Surathkal
PCB Design using Open-Source Tools for beginners	National	16.08.2021 to 20.8.2021	Coordinator	NITK Surathkal
Design and Control of Power Electronic Converters and its Applications	National	19.10.2020 to 23.10.2020	Coordinator	NITK Surathkal

**18. Invited Talks delivered**

Topic	Date	Inviting Organization
Front-End PFC Converter Topologies in EV Charging Systems	25.01.2024	National Institute of Technology Calicut
Design Aspects of Power Converters for Electric Vehicle Systems	14.12.2023	SRM Institute of Science and Technology, Chennai
Converter for electric vehicle charger system	12/05/2023.	VIT Vellore
Gate driver requirements of power converters in EV charger	2.03.2023	National Institute of Technology Calicut
Design and control aspects of grid connected electric vehicle charger system	28.12.2021	AVC college of Engineering, Mayiladuthurai
Design and steady state performance analysis of generic buck converter	19.08.2021	Thiagarajar College of Engineering, Madurai

**19. Membership of Learned Societies**

**National Institute of Technology, Tiruchirappalli:  
Performa for CV of Faculty/ Staff Members**

---

Type of Membership (Ordinary Member/ Honorary Member / Life Member )	Organization	Membership No. with date
Senior Member	IEEE	90326628
Member	IE(I)	
Life Member	ISTE	

20. Academic Foreign Visits

Country	Duration of Visit	Programme

21. Publications

(A) Refereed Research Journals:

Author(s)	Title of Paper	Journal	Volume (No.)	Page numbers	Year	Impact Factor of the Journal (Optional)
Raghavendra Rao P, V. Vignesh Kumar, B. Venkatesaperumal and K. Prabhakaran	A Novel Algorithm based on Voltage and Current Perturbation to track Global peak under Partial Shading Conditions	IEEE Transactions on Energy Conversion	37	2461-2471	Dec 2022	5
Raghavendra Rao P, V. Vignesh Kumar, B. Venkatesaperumal and V. V. Ramana	Modified Current Control for Tracking Global Peak Under Fast Changing Partial Shading Conditions	IEEE Transactions on Energy Conversion	37	1211-1222	June 2022	5

**National Institute of Technology, Tiruchirappalli:  
Performa for CV of Faculty/ Staff Members**

K. Sundareswaran, V. Vignesh kumar, P. Sankar, Sishaj P Simon, P. Srinivasa rao nayak and S. Palani	Development of an Improved P&O Algorithm Assisted Through a Colony of Foraging Ants for MPPT in PV System	IEEE Transaction s on Industrial Informatics	12	187-200	Feb. 2016	11.7
K. Sundareswaran, V. Vignesh kumar and S. Palani	Development of a hybrid genetic algorithm/perturb and observe algorithm for maximum power point tracking in photovoltaic systems under non-uniform insolation	IET Renewable power generation	9	757-765	Aug . 2015	3.03
K. Sundareswaran, V. Vignesh kumar and S. Palani	Application of a combined particle swarm optimization and perturb and observe method for MPPT in PV systems under partial shading conditions	Renewable Energy	75	308-317	Mar. 2015	9.0

(B) Conferences/Workshops/Symposia Proceedings

Author(s)	Title of Abstract/ Paper	Title of the Proceedings	Page numbers	Confere nce Theme	Venue	Year
Sushant Gupta and V. Vignesh kumar	Performance analysis and loss estimation of AC-DC PFC topologies of an EV charger	IEEE International Conference on Power, Instrumentation, Energy, and Control (PIECON-2023)			Aligarh, Uttar Pradesh	Feb. 2023

**National Institute of Technology, Tiruchirappalli:  
Performa for CV of Faculty/ Staff Members**

V. Vignesh Kumar, P. Rao, Amulya, B. Venkatesaperumal	Study on High-Frequency Transformer Design with Different Core Configurations for Flyback Converter Topology	IEEE Third International Conference on Advances in Electrical, Computing, Communications and Sustainable Technologies (ICAECT 2023)			Bhilai, Chattisgarh	Jan,2023
P. Garg, V. Vignesh Kumar and S. Kumar	Performance Analysis of Multiphase Interleaved boost converter topologies for FCEV applications	IEEE International Conference on Power Electronics and Energy (ICPEE)			Bhubaneswar, India	Jan, 2023
R. Rao P, Vignesh kumar V, and Venkatesaperumal Balasubramanian	Loss Analysis of Conventional and Three Level Boost DC-DC Converters Employed for MPPT in PV Systems	first IEEE international conference DELCON 2022			New Delhi	February, 2022,
K. Sundareswaran and V. Vignesh kumar	Gravitational search algorithm combined with P&O method for MPPT in PV systems	thirteenth IEEE international India Conference (INDICON 2016)			IISc Bangalore, India	December 2016
K. Sundareswaran and V. Vignesh kumar	Cascaded Simulated Annealing/Perturb and Observe method for MPPT in PV systems,”	IEEE international conference on Power Electronics Drives and Energy Systems			Trivandram	December 2016



**National Institute of Technology, Tiruchirappalli:  
Performa for CV of Faculty/ Staff Members**

---

	IEEE international conference on Power Electronics Drives and Energy Systems (PEDES 2016)	(PEDES 2016)				

**(C) Books & Monographs**

Author(s)	Title of Book/Monograph	Name of Publishers	Year of Publication	ISSN/ISBN Number
V. Vignesh Kumar and C.K. Aravind	Nature-Inspired Algorithms for Maximum Power Point Tracking in Photovoltaic Systems Under Partially Shaded Conditions	Springer Nature	2021	ISBN 978-981-15-9968-2
V. Vignesh Kumar and C.K. Babulal	Application of Fuzzy Logic in Power Quality Assessment of Modern Power Systems	Scrivener Wiley	2021	ISBN 9781119710790