

## Faculty Profile



**Dr. Hemalatha R, M.E., Ph.D**  
Assistant Professor (S.G.) - EEE

### **HIGHLIGHTS:**

- Number of Publications: 19
- H-Index: 4
- Project Funding Received: 1
- Patents Published: 3
- Patents Granted: 1

### **PROFESSIONAL LINKS:**

- Scopus ID: 57935149400
- Scopus Link: <https://www.scopus.com/authid/detail.uri?authorId=57935149400>
- Google Scholar ID: <https://scholar.google.com/citations?hl=en&user=ifF2CDYAAAAJ>
- Anna University Faculty ID: 6213150
- AICTE Faculty ID: 1-10873923071
- LinkedIn: [www.linkedin.com/in/hemalatha-r-08358446](https://www.linkedin.com/in/hemalatha-r-08358446)

### **PROFESSIONAL BACKGROUND:**

- Teaching Experience till date: 11 Years
- Industrial Experience: 2 Years

### **AREA OF SPECIALIZATION:**

- IoT
- Embedded Systems
- Power and Energy

### **PUBLICATIONS:**

1. **R. Hemalatha**, R. Arunkumar, K. Karthik, and D. M. Kolseleyeli, “Core–shell assembly of NiMoO<sub>4</sub>@-C<sub>3</sub>N<sub>4</sub>/RGO nanoarrays as for high-performance supercapacitors,” *Journal of Materials Science: Materials in Electronics*, vol. 36, no. 21, p. 1332, 2025.
2. T. D. Thirumalai, M. Suresh, **R. Hemalatha**, Y. Bialek, and L. Prokop, “Cheetah optimization-based smart energy management for appliance scheduling and DER

integration in residential and commercial–industrial grids,” *Energy Conversion and Management X*, vol. 27, 101192, 2025.

3. T. D. Suresh, M. Thirumalai, **R. Hemalatha**, Y. Bialek, and L. Prokop, “Resilient VPP cost optimization in DER-driven microgrids for large distribution systems considering uncertainty during extreme events,” *Energy Conversion and Management X*, vol. 27, 101176, 2025.
4. N. Rathika, S. Ganeshb, A. A. Mohamed Faiçal, S. Mariagourian, S. Wisemin Lins, and **R. Hemalatha**, “Cat Swarm Optimized PI Controller Design for Wind Energy-Based Switched Reluctance Generator,” *Sarig International Journal of Electrical and Electronics Engineering*, vol. 11, no. 10, pp. 156–167, 2024.
5. S. B. Thanikanti, T. Vuayori, **R. Hemalatha**, B. Aljafari, and N. J. Nwulu, “Optimizing Radial Distribution System with Distributed Generation and EV Charging: A Spotted Hyena Approach,” *IEEE Access*, vol. 12, pp. 113422–113441, 2024.
6. K. S. Kevin, D. Subha Karuvulam, D. Pathak, **R. Hemalatha**, and T. Kumar, “Modelling and Analysis of Hybrid Fuzzy Tuned PI Controller based PMLDC Motor for Electric Vehicle Applications,” *Sarig International Journal of Electrical and Electronics Engineering*, vol. 10, no. 2, pp. 8–18, 2023.
7. **R. Hemalatha** and M. Ramasamy, “Harmonics Extraction Scheme for Power Quality Improvement Using Chbml-Dstatcom Module,” *Intelligent Automation and Soft Computing*, vol. 35, no. 2, pp. 1505–1525, 2023.
8. T. Thangam, **R. Hemalatha**, M. Murali, and V. J. Manohar, “Optimized PI Controller With Hybrid Sealion-Dragon Fly Algorithm for Grid-Tied PV System,” *International Journal of Intelligent Systems and Applications in Engineering*, vol. 10, no. 4, pp. 351–359, 2022.
9. **R. Hemalatha** and M. Ramasamy, “Microprocessor and PI Controller Based Three Phase CHBMLI Based DSTATCOM for THD Mitigation Using Hybrid Control Techniques,” *Microprocessors and Microsystems*, vol. 76, p. 103093, 2020.

## Conference Papers

1. **R. Hemalatha**, S. V. Keshika, and A. Roopika, “Modeling and Simulation of Control of BLDC Motor for Quadcopter Using Solar Power,” in *Universal Threats in Expert Applications and Solutions*, 2026.
2. **R. Hemalatha**, P. Ganesh Kumar, and M. Suresh Kumar, “Energy Management and Monitoring System for Electric Vehicles Utilizing IoT Technology,” in *Universal Threats in Expert Applications and Solutions*, 2026.

3. **R. Hemalatha**, C. John De Britto, T. Yuvaraj, M. Ulagammai, T. D. Suresh, and M. Thirumalai, “Reliability Analysis of Distribution Systems with Solar-Based DG and Capacitor Integration Using the Water Cycle Optimization Algorithm,” in *Proc. 1st Int. Conf. on Power Energy and Secure Smart Technologies (ICPEST-2024)*, Chaitanya Bharathi Institute of Technology, Hyderabad, India, Dec. 13–14, 2024.
4. M. Ulagammai, **R. Hemalatha**, C. John De Britto, T. D. Suresh, M. Thirumalai, and T. Yuvaraj, “Intelligent Residential Energy Control with Demand Response Incorporating Renewable Power Sources and Electric Vehicle Integration,” in *Proc. 1st Int. Conf. on Power Energy and Secure Smart Technologies (ICPEST-2024)*, Chaitanya Bharathi Institute of Technology, Hyderabad, India, Dec. 13–14, 2024.
5. T. D. Suresh, M. Thirumalai, M. Ulagammai, **R. Hemalatha**, C. John De Britto, T. Yuvaraj, and F. S. Muhammad, “Optimal Placement of Renewable Based DG and DSTATCOM in Distribution Systems to Alleviate the Effects of EVCS,” in *Proc. 1st Int. Conf. on Power Energy and Secure Smart Technologies (ICPEST-2024)*, Chaitanya Bharathi Institute of Technology, Hyderabad, India, Dec. 13–14, 2024.
6. M. Thirumalai, M. Ulagammai, T. D. Suresh, C. John De Britto, **R. Hemalatha**, T. Yuvaraj, and F. S. Muhammad, “Optimization of Power Loss Mitigation in Distribution Systems Using Hunter-Prey Optimization Algorithm for Multiple Types of DFACTS,” in *Proc. 1st Int. Conf. on Power Energy and Secure Smart Technologies (ICPEST-2024)*, Chaitanya Bharathi Institute of Technology, Hyderabad, India, Dec. 13–14, 2024.
7. C. John De Britto, T. D. Suresh, **R. Hemalatha**, M. Thirumalai, M. Ulagammai, and T. Yuvaraj, “Strengthening Resilience in Distribution Networks through Microgrid Development and Integration of Distributed Energy Resources Using the Group Instruction Optimization Algorithm,” in *Proc. 1st Int. Conf. on Power Energy and Secure Smart Technologies (ICPEST-2024)*, Chaitanya Bharathi Institute of Technology, Hyderabad, India, Dec. 13–14, 2024.
8. **R. Hemalatha**, P. B. Rajan, and R. Sathwik, “IoT-Based Automatic Braking Control System for EV Vehicle and Monitoring System,” in *Proceedings of the 2024 2nd International Conference on Computer Communication and Control (IC4)*, 2024.
9. M. Vijayakumar, M. Ramasamy, M. Jeyakumar, T. Arun, and **R. Hemalatha**, “Vehicle Accident Detection and Locating Using GSM and GPS,” in *Proceedings of the 2024 International Conference on Communication Computing and Internet of Things (ICoCIoT 2024)*, 2024.
10. **R. Hemalatha**, R. Suman, B. Haripriya, G. Reddy, P. C. Prasad, and R. V. S. Prasad, “Maximum Powerpoint Tracking by ANN under Conditions of Uniform Irradiance and

Partial Shading,” in *Proceedings of the 8th IEEE International Conference on Science Technology Engineering and Mathematics (ICONSTEM 2023)*, 2023.

#### **SPONSORED RESEARCH / FUNDING APPLIED / CONSULTANCY:**

- Applied for funding in **Start-Up Research Grant** (SRG) under Anusandhan National Research Foundation, **IoT based technologies** for the product **3D Printing Drones**.
- Applied for funding in **Core Research Grant** (CRG) to research under cyber-physical systems, Block chain, Cognitive computing, Cloud computing, AI & ML methodology, **Maximum Power point Tracking by ANN under Conditions of Uniform Irradiance and Partial Shading**.
- Applied for ATAL FDP funding on **Renewable Energy Resources Artificial Intelligence and Machine Learning**
- **Energy management and Monitoring system for Electric Vehicle Utilizing IoT** TNSCST.

#### **PATENTS PUBLISHED/GRANTED:**

- Automated Hybrid Electric Storage System for Smart Car Manufacturing Unit (202441021552)
- Portable Nan-Grids Solar Power Supply System (202341050317)
- A Novel IOT – Based Multilevel Head Food Extrusion Utility System (202341011107)

#### **COURSES CERTIFIED:**

- An Introduction to programming the IoT
- Schneider Electric: AC Windings 3 phase Induction Motors
- IoT Devices
- Introduction to IoT and Embedded Systems
- Introduction to python programming
- Purdue Bright space: Semiconductor fabrication

#### **ACHIEVEMENTS AND AWARDS:**

- Received best Facilitator award from Veltech University, Chennai.
- Received best Faculty award for Event Administration from Kongunadu College of Engineering and Technology, Trichy.
- Best performer award from ISSOJET Burner Private Ltd., Hosur.

#### **SPECIAL SESSIONS DELIVERED:**

- Delivered a Guest Lecture on “Electric Drives and Control” at Sri Shanmuga College of Engineering and Technology, Sankari on 30.10.2021.
- Delivered a Lecture on “Introduction to IOT” at K.S.R. College of Engineering, Thriuchengode on 23.03.2022.
- Delivered a Lecture on “Signals and Systems” at Er. Perumal Manimekalai Engineering College, Hosur on 30.08.2022.
- Delivered a Lecture on “Kirchoffs law and its applications, Mesh Analysis and Nodal Analysis” at K.S.R. College of Engineering, Tiruchengode on 27.11.2022.

- Delivered a Lecture on “Power Quality Phenomena and Disturbances at Adhiyamaan College of Engineering and Technology, Hosur on 29.01.2023.
- Delivered a Lecture on “Application of RTOS”, at Narasus Sarathy Institute of Technology, Salem on 07.03.2023.
- Delivered a Lecture on “Digital Signal Processing” at Al-Ammen Engineering College, Erode on 07.06.2023.
- Delivered a Lecture in one day workshop titled “Design of Power Converters for Renewable Energy Systems” at Sriram engineering College, Chennai 27.04.2024.

#### **SEMINARS/WORKSHOPS ATTENDED:**

##### **Workshops/Seminars/FDP :**

- Attended six Days Online Faculty Development Programme on **Building a Sustainable Future: The Role of Renewable Energy in EV Revolution** organized by Panimalar Engineering College from 23.12.2024 to 28.12.2024.
- Participated in the Five Days - Online Faculty Development Program on **Exploring the Frontiers of Artificial Intelligence: Theory, Application & Ethics** during 8th - 12th July, 2024
- Attended Five days FDP on **Sustainable Lighting Design in Modern Industry Dialux Evo** from 31.01.24 to 04.02.24.
- Participated & completed AICTE Training And Learning (ATAL) Academy Faculty Development Program on **Electric Vehicles: Technological Innovations and Market Trends** at **Saveetha Engineering College** from 02/12/2024 to 07/12/2024.
- Attended six Days Online Faculty Development Programme on **Opportunities and Challenges in Integrating Renewable Energy in EV Charging Infrastructure** organized by Kongunadu College of Engineering and Technology from 24.06.2024 to 29.06.2024.
- Attended six Days Online International Faculty Development Programme on **Harnessing Artificial Intelligence for Healthcare Excellence : Innovations, Insights and Impacts** organized by Saveetha Engineering College from 24.07.2024 to 29.07.2024.
- Participated in IEI Sponsored All India Workshop on **An Overview of the Present and Past Outlook of Electric Vechiles in India Approaches and Perspect** Organized by saveetha Engineering College associated on 05.11.24 and 06.11.24.
- Attended Seminar on Energy security in the age of **Energy Transistion: Balancing Reliability and Sustainability** Organized by saveetha Engineering College associated with IEI on 14.12.23.
- Attended One Week FDP on **Advanced Green computing Technology in Healthcare** held on 26.12.22 to 30.12.22.

#### **PROFESSIONAL MEMBERSHIPS:**

- IETE Corp Life Member -The Institution of Electronics & Telecommunication Engineers (Membership no.AM-503295)