Dr. G. Maheswaran, B.E., M.E., Ph.D.

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Currently working as an Assistant Professor, Department of Electrical and Electronics Engineering, SRM TRP Engineering College, Trichy, Tamil Nadu, India.

Education

Ph.D. in Electrical Engineering *SRM Institute of Science and Technology, Chennai, India* (2017–2021)
Thesis: ***An Adaptive Resistance Perturbation-Based MPPT Algorithm for Photovoltaic Systems***

- Developed mathematical models for organic and inorganic PV panels
- Conducted reliability analysis of grid-connected PV systems
- Designed DC microgrid architecture for remote applications
- Formulated control strategies for large-scale PV power plants

M.E. in Power Systems Engineering *J.J. College of Engineering & Technology, Anna University, Chennai* (2013–2015) CGPA: 8.0 / 10 (First Class)

B.E. in Electrical and Electronics Engineering *Saranathan College of Engineering, Anna University, Chennai* (2009–2013) CGPA: 7.0 / 10 (First Class)

Research Experience

Postdoctoral Fellow *Chulalongkorn University, Bangkok, Thailand* (2023–2024)

- Power system modelling and control for hybrid microgrids
- Collaborative research with global faculty on energy optimization

Research Scientist, Advanced Research Institute, *Dr. M.G.R Educational & Research Institute, Chennai* (2022–2023)

- Developed smart inverter technologies and decentralized energy management strategies

Visiting Research Scientist, *University of Pavia, Italy* (2020) – *CICOPS Fellowship*

- Real-time modelling of PV systems under variable climatic conditions
- Developed MPPT algorithms using field data

Research Fellow, *SRM Institute of Science and Technology, India* (2017–2021)

- Designed modified DC microgrid architectures for rural electrification
- Collaborated with Prof. Josep M. Guerrero (Aalborg University, Denmark) on hybrid energy systems

Research Interests

- Hybrid microgrid design and control.
- Renewable energy sources powered EV Charging Station design and implementation.

- Maximum Power Point Tracking (MPPT) algorithms.
- Renewable energy integration and optimization.
- Smart inverter development for PV systems.
- Energy management strategies for rural electrification.

Selected Publications

1. *IEEE Access*: "An Adaptive Resistance Perturbation-Based MPPT Algorithm for PV Applications"
2. *Applied Sciences*: "Energy Management Strategy for DC Microgrid with High Renewable Penetration"
3. *Solid State Technology*: "Comparative Study of Incremental Values in P&O MPPT Algorithms"
4. *Conference Proceedings*: Smart Helmet Safety System using Raspberry Pi
5. *IJAREEIE*: Load Frequency Control in Restructured Power Systems

Submitted Manuscripts:

- IEEE Transactions on Power Electronics
- IEEE Journal of Photovoltaics
- Renewable Energy and Sustainable Reviews

International Collaborations

- Aalborg University, Denmark
- University of Pavia, Italy
- Chulalongkorn University, Thailand
- Polytechnic Milano, Italy
- IIT Roorkee, India
- Future Electrical Energy Research Lab, USA

Funded Projects

Title	Funding Agency	Status
Hybrid Energy Storage System for Microgrid	Internal SEED Fund	Completed
Modified PV Inverters for Rural UPS	Tamil Nadu Science & Technology Fund	Awaiting Result
Hybrid Energy Storage System for Microgrid Applications	Department of Science and Technology	Awaiting Result
AI-Driven Smart Monitoring and Forecasting platform for DISCOMN stage Roof top Solar Power (RTS) Integration	Ministry of New and Renewable Energy	Awaiting Result

Technical Skills

- MATLAB/Simulink, PSCAD, PowerWorld, ETAP
- Chroma PV Simulator, Opal-RT HIL, DSpace Controller
- Microgrid lab setup and real-time energy system integration

Independent Solar PV Consultant, *Tamil Nadu, India | 2017–Present*

- Provide end-to-end consultancy for domestic rooftop solar installations up to 250 kW
- Guide consumers through **TNEB net metering**, **PM Surya Ghar Muft Bijli Yojana**, and subsidy applications
- Conduct site assessments, load profiling, and system sizing for optimal performance
- Delivered over 150 successful installations across Trichy, Namakkal, and Salem districts
- Specialize in inverter selection, panel layout optimization, and grid integration strategies
- Support clients with documentation for **Unified Solar Rooftop Portal** and post-installation audits

Industrial Exposure

- TANGEDCO, Southern Railway, Dalmia Cements
- Tuticorin Thermal Power Station
- Regen Powertech Wind Farm
- Shriram Non-Conventional Energy (Biomass Plant)

Professional Memberships

- IEEE Member
- Life Member, ISTE
- Life Member, IAENG

References.

- Dr. K. Vijayakumar
  Chairperson, School of Electrical and Electronics Engineering
  SRM Institute of Science and Technology,
  Kattankulathur, Chennai, India
  Email id**:** **chair.soee.ktr.et@srmist.edu.in**

- Prof. Norma Anglani
  Associate Professor, Department of Industrial and Information Engineering
  University of Pavia, Italy,
  Kattankulathur, Chennai, India
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