

CURRICULAM VITAE

Mr. Prajwal K T, B.E., M.Tech., (Ph.D.)

Assistant Professor,
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Permanent Address

#351, Maathru Krupa,
5th A Main, Narayana Nagar 3rd Block,
Doddakallasandra,
Bangalore-560062

Fields of Research Interest

Sensors design and fabrication – Sensor and actuator design using computational tools such as ANSYS, COMSOL and Workbench

Control System – Fuzzy Logic controller design, optimal and linear controller design using MATLAB and other mathematical tools

Energy Harvesting – Electromagnetic and electrostatic energy harvester design and fabrication

Energy Management system – Energy management in smart buildings and smart grids using Artificial Intelligence techniques

Robotics and Control – Design and development of linear and nonlinear robotic control systems for various applications

Educational Qualification

Doctorate of Philosophy (Ph.D.) (Pursuing) – in Electrical Engineering, M S Ramaiah University of Applied Sciences, (2018 – 2023)

Master of Technology (M.Tech.) in Sensors and Control Systems Engineering, M S Ramaiah University of Applied Sciences, 2017

Bachelor of Engineering (B.E.) in Electrical and Electronics Engineering, Visvesvaraya Technological University, 2015

Professional Experience

Assistant Professor, Department of Electrical Engineering, M S Ramaiah University of Applied Sciences, Bangalore (August 2017- Present)

Member Secretary – IEEE Student Branch RUAS

Member Secretary – DAAPC, Department of Electrical Engineering, RUAS

Member – IEEE ExeCom, Student Branch RUAS

Member – Center for Control Systems and Robotics Research

Member of Editorial Board of Journals

- Journal of Sensor Research and Technologies, HBRP Publications
- Journal of Optoelectronics and Communication, HBRP Publications
- Research and Applications: Emerging Technologies, HBRP Publications
- Journal of Control System and its Recent Developments, HBRP Publications
- Journal of Recent Trends in Electrical Power System, HBRP Publications
- Journal of Emerging Trends in Electrical Engineering, HBRP Publications

Reviewer of Journals / Conferences

- Journal of Electrical Engineering and Technology, Springer
- Journal of Thermal Engineering, Yildiz Technical University
- SasTech – Technical Journal of RUAS, M S Ramaiah University of Applied Sciences
- Served as reviewer/ sub reviewer for various IEEE Conferences

Member of Professional / Technical Committee

- Graduate Student Member of IEEE India
- Lifetime Member of ISTE - LM - 136637

List of Publications

Journal Papers

Scopus Indexed / Indian Citation Indexed (ICI) / UGC- CARE Journals

1. Prajwal, K.T., Alan, S., Rasheed, S.F., Laxmipriya, S. and Balmiki, V., (2023) Development of an apparatus for measuring electrical resistivity in concrete paste. *Materials Today: Proceedings*. Elsevier Ltd **(SCOPUS – Q2, Cite Score – 3.2)**
<https://doi.org/10.1016/j.matpr.2023.07.237>
2. Prajwal, K T., Manickavasagam, K., (2023) Modelling, Design and Parametric Analysis of a Levitation Based Energy Harvester, *Energy Harvesting and Systems*, 10(1), pp.35-48, Walter de Gruyter **(SCOPUS - Q2, Cite Score – 6.9)**
<https://doi.org/10.1515/ehs-2022-0034>
3. Prajwal, K T., Manickavasagam, K., Suresh, R., (2022) A Review on Vibration Energy Harvesting Technologies: Analysis and Technologies. *The European Physical Journal Special Topics*, 231, 1359–1371 Springer **(SCOPUS - Q2, Impact Factor – 2.707)**
<https://doi.org/10.1140/epjs/s11734-022-00490-0>
4. Vinay Kumar, T Naveen Kumar, Prajwal K. T., (2021) A Novel Current Sensor less MPPT based Approach for PV Applications Using PSO Technique, *Journal of Physics: Conference Series*, 2070(1), pp.1-8. **(SCOPUS – Q4)**
<https://doi.org/10.1088/1742-6596/2070/1/012123>
5. Prajwal K. T., Pritam Bhat, (2020) Thermal Analysis of a Thermoelectric Generator (TEG) using FEM Analysis, *IOP: Materials Science and Engineering*, 1045(1), pp.1-7. **(SCOPUS – Q4)**
<https://doi.org/10.1088/1757-899X/1045/1/012018>
6. Prajwal K. T., H Kajol, S Junaid, S Jain, A Chaudhary, (2019) Design and Development of a Voice Actuated Hospital Bed for Patient Care, *International Journal of Recent Technology and Engineering*, 08(04), pp. 1751-1757. **(SCOPUS - Q4)**
<http://doi.org/10.35940/ijrte.C5882.118419>
7. Mamatha H., Ranjitha T., Vinutha R., Prajwal K. T. and Naveen Kumar T. (2019) Design and Development of Low-Cost IR based Home Automation System, *SASTECH J.*, 18(01), pp. 33-36. **(ICI, UGC -CARE List Journal)**
8. Prajwal K. T. (2019) Economic Fuzzy Energy Controller for a Smart Home, *Research Journal of Engineering and Technology*, 10(02), pp. 83-93. **(ICI, UGC -CARE List Journal)**
<http://doi.org/10.5958/2321-581X.2019.00015.1>

Conference Papers

1. N. N. Kumar, S. Patil, Prabhudeva, S. Nair and K. T. Prajwal, "Design and Development of Smart Portable Gadget for Mobility," *2022 6th International Conference on Trends in Electronics and Informatics (ICOEI)*, 2022, pp. 01-06. **(Scopus Indexed Conference)**
<https://doi.org/10.1109/ICOEI53556.2022.9776835>
2. Nikita, T., Prajwal, K.T. (2021) Electromagnetic Analysis of Dynamic Charging of Electric Vehicles, *5th IEEE International Conference on Electronics, Communication and Aerospace Technology, RVS Technical Campus, Coimbatore*. **(Scopus Indexed Conference)**
<https://doi.org/10.1109/ICECA52323.2021.9676153>
3. Nikita, T., Prajwal, K.T. (2021) PID Controller Based Two Wheeled Self Balancing Robot, *5th IEEE International Conference on Trends in Electronics and Informatics, SCAD College of Engineering and Technology, Tirunelveli*. **(Scopus Indexed Conference)**
<https://doi.org/10.1109/ICOEI51242.2021.9453091>
4. Prajwal, K.T., Swathy Nair., Roopini, C. (2020) Shock Data Loggers for Transport Applications, *4th IEEE International Conference on Electronics, Communication and Aerospace Technology, RVS Technical Campus, Coimbatore*. **(Scopus Indexed Conference)**
<https://doi.org/10.1109/ICECA49313.2020.9297497>
5. Prajwal, K.T., Kruthika Ramesh., Roopini, C., Monish Gowda M. H., Sitaram Gupta, V. V. S. N. (2020) Design and Development of an Agirbot for Automatic Seeding and Watering Applications, *2nd IEEE International Conference on Inventive Mechanisms for Industrial Applications, Dayananda Sagar College of Engineering, Bengaluru*. **(Scopus Indexed Conference)**
<https://doi.org/10.1109/ICIMIA48430.2020.9074856>
6. Prajwal, K. T. and Sitaram Gupta, V. V. S. N. (2018) Smart Home Energy Management System Using Fuzzy Logic for Continuous Power Supply with Economic Utilisation of Electrical Energy, *2nd IEEE International Conference on Inventive Systems and Control, JCT College of Engineering and Technology, Coimbatore*. **(Scopus Indexed Conference)**
<https://doi.org/10.1109/ICISC.2018.8399078>
7. Prajwal, K. T. (2015) Energizing Circuit for Electromagnetic Contactors, *National Conference of Horizons in Power Engineering, K S School of Engineering and Management, Bangalore*.

Book Chapters

1. Swathy Nair., Prajwal K.T., Kiran Kumar B.M., S. Nagaraja Rao, (2021) Performance Analysis of a High Gain Quasi Z-Source Network based Cascaded H-Bridge Multi-Level Inverter. In: Sudhan Majhi, Rocio Perez de Prado, Chandrappa D.N., (eds) *Distributed Computing and Optimization Techniques, Lecture Notes in Electrical Engineering*. Springer, Germany.

Patents

1. Prajwal K. T., K. Manickavasagam, Swathy Nair and Nikita T, "Vertical Coil-Magnet Stack Electromagnetic Energy Harvester", Indian Patent Application: 202341004839, January 23, 2023. **(Patent Filed)**
2. Prajwal, K. T. and Manickavasagam, K. "Fusion of Horizontal and Vertical Movement Electromagnetic Energy Harvester", Indian Patent Application: 202241003995, January 24, 2022. **(Patent Published)**
3. Prajwal K. T., K. Manickavasagam and T. Naveen Kumar "Conical shaped Electromagnetic Energy Harvester", Indian Patent Application: 202041055630, December 21, 2020. **(Patent Published and First Examination Report Received)**
4. Sitaram Gupta, V. V. S. N. and Prajwal, K. T. "Method and System for Continuous Power Supply System from Multiple Energy Source Based on Demand Management", Indian Patent Application: 201741046744, December 27, 2017. **(Patent Published and First Examination Report Received)**

Funds / Grants Received

1. Received a grant of **Rs. 3.99 Lakhs** as seed money for the project titled "Design and Development of a Miniaturized Conical Electromagnetic Energy Harvester" from Ramaiah University of Applied Sciences, Bengaluru.
2. Received a grant of **Rs. 6000/-** as funds for the project titled "Design and Development of an Intelligent Medical Dispenser" from Karnataka State Council for Science and Technology, Bengaluru.

Projects / Theses Guided

1. Design and Development of Low-Cost Home Automation System Based on Infrared Technology.
2. Design and Development of a Voice Actuated Hospital Bed for Patient Care.
3. Development of IoT Based Safety Alarm Using Piezoelectric Effect
4. Thermal Analysis of a Thermoelectric Generator using COMSOL.
5. Development of and Hybrid Energy Harvester from vehicular Suspension System.
6. Development of a Self-Balancing Robot.
7. Development of Convolutional Neural Network for Hand Gesture Classification.
8. Energy and Emergency Management System for Indian Highways.
9. A Novel Current Sensorless MPPT based Approach for PV Applications Using PSO Technique.
10. Design and Development of an Underwater ROV.
11. Design and Development of an Acoustic Energy Harvester.
12. Design and Development of an intelligent Medical Dispenser for Aged People.

Workshops / Seminars / Conferences Attended

1. "5th IEEE International Conference on Trends in Electronics and Informatics", SCAD College of Engineering and Technology, Tirunelveli, June 2021.
2. Workshop on "Types of Patents in India", organized by Turnip Innovations India, BITS Vadodra, January 16, 2021.

3. "AICTE Sponsored National Level Five Days online Short-Term Training Program (STTP) - 2 on Assembly Line Automation and Machine Building", organized by Department of Electrical and Electronics Engineering, Nitte Meenakshi Institute of Technology, Bangalore, 4th -9th January 2021.
4. "First International Conference on Electrical Energy and Power Engineering", Organized by Renewable Energy and Energy Management Research Group, Universiti Teknologi MARA, Penang, Malaysia, November 2020.
5. "4th IEEE International Conference on Electronics, Communication and Aerospace Technology", RVS Technical Campus, Coimbatore, November 2020.
6. Two days National level Seminar on "Recent Trends in Electric Vehicle Technology", Organized by Department of EEE, IFET College of Engineering, Villupuram, 05-11-2020 to 06-11-2020.
7. "Modeling and Simulation of Structural Mechanics and CFD Analysis using MATLAB and ANSYS" organized by JSS Science and Technology University, Mysuru, 24th-28th August 2020.
8. "AICTE Sponsored National Level Five Days Virtual Short-Term Training Program (STTP) - 2 on INDUSTRY 4.0", organized by Department of Mechanical Engineering, Nitte Meenakshi Institute of Technology, Bangalore, 24th -28th August 2020.
9. "AICTE Sponsored National Level Five Days Virtual Short-Term Training Program (STTP) - 1 on INDUSTRIAL INTERNET OF THINGS", organized by Department of Mechanical Engineering, Nitte Meenakshi Institute of Technology, Bangalore, 12th – 16th August 2020.
10. "Demystifying New Education Policy", organized by LEADIndia Foundation, Bangalore, 08th August 2020.
11. "6th International Conference on Electronics, Computing and Communication Technologies, IEEE CONECCCT, organized by IEEE Bangalore Section, 2nd – 4th July 2020.
12. "National level Webinar on Simulation Driven Innovation for e – Mobility, Organized by Altair India, June 10th 2020.
13. "IEEE Society Chapter Webinar Series ", Organized by IEEE Bangalore, Virtual Workshop, 12th May 2020 - 15th May 2020.
14. "Effective Online Engineering Education: Tips and Tricks" Organized by IEEE Bangalore, Virtual Workshop, 26th April 2020.
15. "IEEE International Conference on Inventive Mechanisms for Industrial Applications" organized by Dayananda Sagar College of Engineering, Bangalore, March 2020.
16. "IEEE Authorship Workshop – How to Publish with IEEE?" organized by Indian Institute of Science (IISc), Bangalore, 9th September 2019.
17. "International Conference in Innovations in Engineering, Technology and Sciences" Organized by NIE Institute of Technology, Mysore, September 2018.
18. "Electric Propulsion" organized by M S Ramaiah University of Applied Sciences, 6th July 2018.
19. "2nd IEEE International Conference on Inventive Systems and Control" organized by JCT College of Engineering, Coimbatore, January 2017.

Workshops/ Conferences/ Seminars Organized

1. "Webinar on Celebration of International Day of Light 2021", organized by IEEE Student Branch RUAS and M S Ramaiah University of Applied Sciences, 16th May 2021.
2. "Workshop on Recent Topics in Optical Communication and Photonics", organized by IEEE Student Branch RUAS and M S Ramaiah University of Applied Sciences, 4th March 2020.
3. "Workshop on Artificial Intelligence (AI) and Robotics", organized by Center for Control Systems and Robotics Research and M S Ramaiah University of Applied Sciences, 18th and 19th November 2019.

Certificate Courses Completed

1. NPTEL Certificate Course on “Transducers for Instrumentation” organized by Indian Institute of Technology Madras from July 2023 – October 2023.
2. Certificate Courses on Mechatronics –Recent Trends and Future Prospects”, Under Karyashala (High-End Research Training Programme), organized by SERB in association with Ramaiah University of Applied Sciences Bangalore, Bangalore from 20th July 2023 to 26th July 2023.
3. Certificate Course on Sensor Technology organized by All India Council for Technical Education (AICTE) in association with Shri Vithal Education and Research institute College of Engineering, Pandharpur.9th September 2020 to 11th September 2020 (ATAL FDP).
4. Certificate Course on Electric Vehicles organized by All India Council for Technical Education (AICTE) in association with Gyan Ganga Institute of Technology and Sciences, Jabalpur, 1st September 2020 to 5th September 2020 (ATAL FDP).
5. Certificate Course on Programmable Logic Controller, Variable Frequency Drive and Human Machine Interface Development organized by Autmac Solutions in association with K S School of Engineering and Management, July – August 2015.
6. Certificate Course on “Introduction to Artificial Intelligence” by IBM in association with Coursera – a four-week online MOOC.
7. Certificate Course on “Neural Networks and Deep Learning” by Deeplearning.ai in association with Coursera – a four-week online MOOC.

Awards and Recognitions

1. Received Faculty Achiever award on RUAS Innovation Day organized by Ramaiah University of Applied Sciences in October 2023.
2. Received Best Paper award for the paper titled “Design and Development of an Agirbot for Automatic Seeding and Watering Applications” in IEEE International Conference on Inventive Mechanisms for Industrial Applications held at Dayananda Sagar College of Engineering, Bengaluru.
3. Certificate of Merit in Engineering for being second topper in 6th Semester and 8th Semester.

Additional Roles and Responsibilities

- Departmental coordinator for NAAC and NIRF
- Has served as a Project coordinator for M.Tech. and B.Tech.
- Participated in curriculum revisions for courses related to sensors, automation and control systems
- Member Secretary – DAAPC
- Member Secretary – IEEE Student Branch RUAS
- Member – IEEE ExeCom, Student Branch RUAS

Personal Details

Date of Birth: 25/07/1993

Place of Birth: Bangalore, Karnataka, India

Languages: English, Kannada, Hindi and Telugu