# Dr. MOHANA LAKSHMI J


**Associate Professor, Department of E&EE**
**Associate Dean (Corporate Affairs)**
**COO, ME-RIISE FOUNDATION (A Section 8 Company)**

+91-9740596743
mohana2024@gmail.com
mlj@mcehassan.ac.in


Industry & Academic Experience|| Specialization in Power electronics, Drives and IoT|| Researcher|| Strategic Planning, Operations & Finance management || Involvement in developing startup eco-system

## PROFILE SUMMARY

- **A strategic leader** with **over 13 years** of extensive exposure in Academia & Electrical Engineering.
- Gained industry exerience in the development of motor drives for compressor and pump applications.
- **Gained Industry Expertise**; worked with **Altium, LTSpice, MatLab, Code Composer Studio, LABVIEW (hardware + firmware).**
- Published **15 International Journals**, attended **11 International Conferences**, and **1 National Conference**.
- **Extensive Research** carried out in Sensorless Vector Control of Induction Motor Drives, Remote and Virtual reality-based laboratory establishment for engineering education and development of sustainable solutions for **smart cities**.

## AWARDS

- **Winner** of **"ELEVATE GRAND FINALE 2024"** securing grant of **₹21 Lakh from Department of Electronics, IT, BT, S&T, Govt. of Karnataka in February, 2025.**
- "**Best Project Guide**" for the Project on Automated Garden Watering System with Real time monitoring" **by Malnad College of Engineering, Hassan in 2023.**
- **"Spot Award"** for good contribution in VFD Project from ICP HR, L & T Technology Services, 11th April, 2022.
- **"Winner"** in "R10 Product Demo Session" for the product title: "Labzcon" organized during R10HTC by IEEE Bangalore Section on 2 October 2021
- **International Engineering Educator certificate** from Indo–US Collaboration for Engineering Education (IUCEE) in 2021.
- **Best Paper Presenter** at Third International Conference on Electrical,
- Electronics, Communication, Computers and Optimization Techniques held at GSSS Institute of Engineering & Technology for Women, Mysuru, during 14-15, 2018
- **Best Project Guide** (B.E. Programme) for the year 2017-18 for guiding project entitled "Fabrication of Portable Solar Water Purifier."
- **VTU First Rank and gold medalist** in M.Tech. Degree (under VTU) in 2012

## CERTIFICATIONS

- 2023: **Internet of Things** by Benny Mellon & ISTE
- 2022: **Executive Post Graduate Certificate Program in Electric Vehicle Design**- IIT Roorkee (Sponsored by LTTS)
- 2022: **Innovation, Business Models and Entrepreneurship**, NPTEL
- 2022: **Financial Statements 101** – Acumen Academy.
- 2022: **PCB Designing in Altium Designer** – Udemy
- 2020: **Artificial Intelligence –Webex** by AGIMUS Technologies
- 2019: **Introduction to Machine Learning –Swayam** by NPTEL
- 2019: **Electric Vehicles: Part 1 –Swayam** by NPTEL
- 2019: **Entrep101X: Entrepreneurial Opportunities** – edX by AdelaideX, University of Adelaide
- 2018: **eCARSx: Electric Cars: Technology –edX by DelftX**, Delft University of Technology

## CORE COMPETENCIES

- Strategic Planning
- Research & Development
- Learning & Development
- Operations and Finance Management
- Electrical Engineering
- University Relations
- Curriculum Designing
- E-Learning Solutions
- Technical analysis and testing

## EDUCATION

| | |
|---|---|
| **2019** | **Ph.D/Doctorate Electrical,** Visvesvaraya Technological University (VTU) |
| **2012** | **M.Tech Electrical,** Malnad College of Engineering, Hassan (1st Rank & Gold Medalist) |
| **2010** | **B.E. Electrical**, PES College of Engineering, Mandya |

## PATENTS

- **2 Design patents granted**
- **Indian Patent Published** - Dr. Mohana Lakshmi J.- "A Wide Range Compatible Water Flow Meter System For Monitoring Water Wastage" - Indian Patent Journal- February, 2024
- **Indian Patent Granted - Mohana Lakshmi J**, – "Method and System for Performing Experiments in a Remote Laboratory" – 201941041529, April 2021.
- **Indian Patent Published** – Dr. Mohana Lakshmi J.- "System and Method of a Hybrid Control Model for Power Quality Improvement of Wind Energy Conversion system with Unified Power Quality Controller" –Indian| Patent Journal No. 202041030781, July 2020.

## WORK EXPERIENCE

**Nov'22 till date with Malnad College of Engineering, Hassan as Associate Professor**

**May'23 till date as Chief Operating Office, ME-RIISE, FOUNDATION, A Section 8 Company**

Feb' 22 to Oct' 22 with L & T Technology Services, Mysore as Lead

Apr'21 with The National Institute of Engineering, Mysore as Assistant Professor - PG & UG

Aug'16 – Apr'21 with Malnad College of Engineering, Hassan as Assistant Professor - PG & UG

Jul'15 – Aug'16 with A.T.M.E College of Engineering, Mysore as Assistant Professor – UG

Sep'12 – May'15 with Malnad College of Engineering, Hassan as Assistant Professor - PG & UG

**Key Result Areas as COO:**

- Leading a team of **2 members at ME-RIISE FOUNDATION (A Section 8 Company),** overseeing strategic planning, cash flow analysis, event execution, and complete operations management.
- Developing and implementing new processes and procedures to improve operational efficiency.
- Analyzing data to identify operational trends and opportunities for improvement.
- Coordinating with other departments within the organization to ensure successful implementation of initiatives.

**Projects Mentored:**

- Mentoring 2 innovators under Rajiv Gandhi Entrepreneurship Programme with a funding support of Rs. 6,65,000.
- Sustainable Agro-Intelligent Systems, Machine learning based oral cavity detection and diagnosis system.
- Mentor for Innovative Project, "Solar Panel Cleaning Robot" with a grant of Rs. 1,00,000/- from New Age Innovation Network, Govt. of Karnataka, November 2020.
- Mentor for Innovative Project "Automated machine for precision farming" with a grant of Rs. 2,00,000/- from New Age Innovation Network, Govt. of Karnataka, December 2024.
- Mentor for Innovative Project "AI powered model for Oral cancer detection" with a grant of Rs. 2,00,000/- from New Age Innovation Network, Govt. of Karnataka, December 2024.
- Mentor for Innovative Project "Scoot lite" with a grant of Rs. 1,00,000/- from New Age Innovation Network, Govt. of Karnataka, December 2024.

## PROFESSIONAL MEMBERSHIPS

- **Senior member IEEE** – PES, Smart Cities, Smart Grid, Young Professional, Robotics and Automation: 92512636
- **Associate Member Institution of Engineers**, India, Mysore Chapter: AM166619-6
- **Life Member Indian Society for Technical Education (ISTE)**: LM - 110976
- **Life Member International Association of Engineers (IA ENG)**: 170329

## REVIEW OF PAPERS – NATIONAL/INTERNATIONAL CONFERENCE/JOURNAL

- IEEE Access, 2025, 2024, 2023, 2022, 2021, 2020
- Conference on Power, Energy and Innovations 2021 IEEE Connect 2021
- Alexandria Engineering Journal 2021
- IEEE Transactions on Transportation Electrification 2024, 2020
- ETASR - Engineering, Technology & Applied Science Research (Scopus Indexed) 2019-20
- ECTI Transactions on Electrical Engineering, Electronics, and Communications (Scopus Indexed) 2019-20 IEEE Transactions on Transportation Electrification 2018-19

## PERSONAL DETAILS

**Address** : **D/o Jayaramu, Haralahalli New Extension, Pandavapura RS Post, Mandya – 571435**

**Date of Birth** : **20th March 1989**

**Languages Known** : **Kannada, English, Hindi, Tamil**

## ANNEXURE

### International Journals

1. Gowtham, N., Mohana Lakshmi, J., Savyasachi, G. K., & Bukya, M. (2025). A novel transformer-less eleven-level inverter with optimized Buck–Boost controller and minimal switch design for grid-connected PV systems. Automatika, 66(4), 950–971. https://doi.org/10.1080/00051144.2025.2577008
2. AI powered model for Oral-cancer Detection, International Journal of Scientific Research in Engineering and Management (IJSREM), Volume: 09 Issue: 02 | Feb – 2025, ISSN: 2582-3930.
3. Automated harvest machine for precision farming, , International Journal of Scientific Research in Engineering and Management (IJSREM), Volume: 09 Issue: 02 | Feb – 2025, ISSN: 2582-3930.
4. N. Sushma, H.N. Suresh, Lakshmi J. Mohana, K.B. Santhosh Kumar, Experimental investigation on wireless integrated smart system for energy and water resource management in Indian smart cities, Results in Engineering, Volume 23, 2024, 102687, ISSN 2590-1230, https://doi.org/10.1016/j.rineng.2024.102687. (Impact Factor of 6.0/ SCI indexed-Q1).
5. N. Sushma, H. N. Suresh, Mohana Lakshmi J, Parvathaneni Naga Srinivasu, Akash Kumar Bhoi, Paolo Barsocchi, "A unified metering system deployed for water and energy monitoring in smart city" IEEE Access, vol. 11, pp. 80429-80447, 2023, doi: 10.1109/ACCESS.2023.3299825(Impact Factor of 3.9/ SCI indexed-Q1).
6. Mohana Lakshmi J, Suresh H. N., Mahajan Sagar Bhaskar, et. al, "Real-Time Implementation of Extended Kalman Filter Observer with Improved Speed Estimation for Sensorless Control", IEEE Access, pp. 50452 – 50465, 30th March 2021, (Impact Factor of 3.9/ SCI indexed-Q1)
7. Mohana Lakshmi J., Neethu V S, Deeksha R and Raghvendraprasad Deshpande, "Bus Clamped Modulation for Harmonic Minimization in Vector Control of Induction Motor Drives", International Journal of Advanced Research in Engineering and Technology, 12(1), 2021, pp. 760-770 (Scopus Indexed)
8. Geetha Kiran A., Mohana Lakshmi J., "Student Centric Pragmatic Approach to Impart Concepts of Python Applications Programming", Journal of Engineering Education Transformations. (Accepted and in press), Vol. 34, No. 1, pp. 52-60, July 2020. (Scopus Indexed)
9. Arjun G. T., N. S. Jyothi, Mohana Lakshmi J., Neethu V. S., "Simulation of Vector Controlled Adjustable speed System of Doubly Fed Induction Machine", International Journal on Recent and Innovation Trends in Computing and Communication, vol. 6, Issue June 2018 (indexed in Thomson Reuters with an Impact factor 5.75)
10. Arjun G. T., N. S. Jyothi, Mohana Lakshmi J., "Vector Control of Induction Motor Using Xilinx System Generator", International Journal of Research in Engineering & Technology, vol. 7, Issue 7, pp. 141-149, Jul'18 (Google Scholar)
11. Mohana Lakshmi J, Geetha Kiran A., "Inculcating Glocalization Culture in Young Graduands", International Journal for Research in Engineering Application and Management, Vol. 4, Special Issue ICSGUPSTM 2018 (indexed in Thomson Reuters with an Impact factor 5.86)
12. Geetha Kiran A, Mohana Lakshmi J., "Instigating Research Culture at Institute Level", International Journal for Research in Engineering Application and Management, Vol. 4, Special Issue ICSGUPSTM 2018 (indexed in Thomson Reuters with an Impact factor 5.86)
13. Geetha Kiran A, Mohana Lakshmi J., Nanditha B. R., Swathi H. Y., "Inter-Departmental Student Projects- Challenges and Benefits", Journal of Engineering Education Transformations, Special IssueJan'18, eISSN 2394-1707 (Scopus indexed)
14. A Geetha Kiran, Mohana Lakshmi J, H S Chandrashekar, "An Empirical Vision for Inspiring Students as a Core Driver to meet Global Challenges", Journal of Engineering Education Transformations; Volume 30, Issue 3, January 2017
15. Mohana Lakshmi J. and H. N. Suresh, "A Robust EKF based Speed Estimator & Fuzzy Optimization Technique for Sensorless Induction Motor Drives", International Journal of Power Electronics and Drive Systems, vol. 8, issue 1, March 2017, pp. 147- 155 (Scopus Indexed, H-index-17, Q2)
16. Varaprasad N. L., P. M. Krishna, S. Rajanna, Mohana Lakshmi J., Shruthi K and T. S. Shruthi, "Microcontroller Based DC Motor Control with Fuzzy Maximum PowerPoint Tracking of PV System", International Journal of Current Engineering and Technology Vol. 3, No. 4, pp. 1315-1319, October 2013
17. Raghavendra N., H. N. Suresh, Mohana Lakshmi J., Shruthi K. and Shruthi T.S., Fabrication and Development of Signal Loss Recovery System for AC Drives, International Journal of Emerging Technology and Advanced Engineering (IJETAE), vol. 3, issue 8, August 2013, pp.164-171

### Publication as Chapter in Book

1. Mohana Lakshmi J., Varsha K. S. Pai and H. N. Suresh, "Non–Linear Speed Estimator and Fuzzy Control for Sensorless IM Drive", Smart Innovation, Systems and Technologies, Vol. 79, pp. 307-318, Springer – Singapore, 2018 (https://doi.org/10.1007/978-981-10-5828-8_30) (Scopus Indexed, Hindex-31, Q4).

### International Conferences/Symposium

1. Multifunctional Borewell Rescue Robot for Enhanced Child Safety, *2025 International Conference on Computing Technologies & Data Communication (ICCTDC)*, HASSAN, India, 2025, pp. 1-6, doi: 10.1109/ICCTDC64446.2025.11158883.
2. Development of Automated Harvest Machine for Precision Farming of Areca Nut, *2025 International Conference on*

*Computing Technologies & Data Communication (ICCTDC)*, HASSAN, India, 2025, pp. 01-08, doi: 10.1109/ICCTDC64446.2025.11158830.

3. Compact, Foldable and Lightweight Electric Scooter: Scootlite, *2025 International Conference on Computing Technologies & Data Communication (ICCTDC)*, HASSAN, India, 2025, pp. 1-6, doi: 10.1109/ICCTDC64446.2025.11159059.
4. Development of AI Powered Model for Oralcancer Detection, *2025 International Conference on Computing Technologies & Data Communication (ICCTDC)*, HASSAN, India, 2025, pp. 1-8, doi: 10.1109/ICCTDC64446.2025.11159023.
5. S. K. K. B, S. N, M. L. J and V. R. Koll, "Simulink Design of Optimized Turbo Code for Next-Generation Wireless Networks: A 5G and Beyond Perspective," 2024 Third International Conference on Distributed Computing and Electrical Circuits and Electronics (ICDCECE), Ballari, India, 2024, pp. 1-7, doi: 10.1109/ICDCECE60827.2024.10548833.
6. Manoj B. M., Mohammed Suhail, Sushma N, Santhosh Kumar K B and Mohana Lakshmi J, "Sustainable Solutions: Deploying an loT-Based Water Leakage Detection System for Urban Water Management in India" in Springer Nature's 3d International Conference on Renewable Power (ICRP-2023), held on 28h - 29h March, 2023 at MAIT Delhi, India.
7. Preethi S, Mohana Lakshmi J, "Development of Virtual reality-based experimentation of Digital Electronics Laboratory", 2nd International Conference on Research Trends in Engineering and Management (ICRTEM), 25-26th August, 2022.
8. N Sushma, Suresh H N, Mohana Lakshmi J, "Smart Water Flow Meter for Improved Measurement of Water Usage in a Smart City", 2022 Second International Conference on Advances in Electrical, Computing, Communication and Sustainable Technologies (ICAECT), 2022, pp. 1-6, doi:10.1109/ICAECT54875.2022.9808041.
9. Deeksha R, Mohana Lakshmi J, H M Harshita, "Performance Improvement in Sensorless Vector Control of IM using Bus Clamped PWM", 5th IEEE sponsored International Conference on Design Innovation for 3Cs-Compute, Communicate, Control ICDI3C-2021, pp. 88-92, held at MVJ College of Engineering, Bangalore, 11-12 June 2021
10. Mohana Lakshmi J, H. N. Suresh, "Accuracy Improvement of Induction Motor Speed Estimation using Improvised Tuning of Extended Kalman Filter Technique", 13th IEEE International Conference on Industrial and Information System 2018 held at Indian Institute of Technology, Ropar, pp. 191-196, 1-2 December 2018
11. Mohana Lakshmi J, H. N. Suresh, Deekshitha N., "Performance Analysis of Five-level Inverter for Hybrid Distribution Generation System", Third International Conference Electrical, Electronics, Communication, Computers and Optimization Techniques at GSSS Institute of Engineering & Technology for Women, Mysuru, during 14-15 Dec 2018.
12. Mohana Lakshmi J. and G. K. Purushothama, "A Double Fuzzy based torque ripple minimization for DTC Induction motor drives", Proceedings of International Conference on Intelligent and Autonomous Systems (ICIAS2015), ISBN: 978-93-84659-38-7, Paper ID 40, Malnad College of Engineering, Hassan, November 28 - 29, 2015
13. Rekha H. R., Mohana Lakshmi J. and H. N. Suresh, DC Bus Voltage Clamp Method to Prevent Overvoltage Failures, Proceedings of International Conference on Intelligent and Autonomous Systems (ICIAS2015), ISBN: 978-93-84659-38-7, Paper ID 8, Malnad College of Engineering, Hassan, pp. 21-26, November 28 - 29, 2015
14. Mohana Lakshmi J. and H. N. Suresh, Sensorless Vector Control of Induction Motor Drives, International Symposium on Advances in Power Distribution Engineering: Distributed Generation (DG), Micro Grid (MG) & Renewable Integration (RI), National Institute of Engineering, Mysore, 28th& 29th August 2015
15. Mohana Lakshmi J. and H. N. Suresh, "Sensorless Speed Estimation and Vector Control of an induction motor drive using Model Reference Adaptive Control", in proceedings of International Conference on Power and Advanced Control Engineering at BNMIT, Bangalore from 12th to 14thAugust, 2015 (published in IEEE Digital Library)

**National Conference**

1. Mohana Lakshmi J., Nithin Kumar, Mohammed Zilfikar, Bhupinson, "Enhanced Solar Photovoltaic Based Electric Bike Charging Unit using Cascaded Boost Converter", in the web-based 6th National Conference on "Emerging Trends in Engineering & Technology" on 15th May, 2020

## Workshops/ Faculty Development Programs Attended – Last 3 years

1. 2025: One Week faculty development programme on "Innovation and Design Thinking" at NITK Surathkal from 17th to 21st March, 2025.
2. 2024:"Certification course on PowerBi" from Course Era
3. 2023: FDP on "Internet of Things" – by ISTE – 3 months programme
4. 2021: Online ATAL FDP on Augmented Reality & Virtual Reality -Maulana Azad National Urdu University Polytechnic, Hyderabad 2021: Education 4.0 – Role of Education Technologies - Online by IEEE Pune section
5. 2021: AICTE Training and Learning (ATAL) Academy on Computer Science & Biology - Online FDP by MCE, Hassan
6. 2020: AICTE - Advances in Power Electronics for Smart Grid, Renewable Energy Systems & Electric Vehicle Technology- Agni College of Technology, Chennai
7. 2020: AICTE- online workshop on Universal Human Value- "Inculcating Universal Human Values in Technical Education"- Online Workshop
8. 2020: AICTE Examination Reforms -Online FDP conducted by KLE University
9. 2020: TEQIP-3/Swayam – Digital Transformation in teaching learning process - MCE, Hassan 2019: AICTE Smart, Green & 5G Technologies - MCE, Hassan
10. 2019: Internet of Things: Industry Trends - JIT, B'Lore
11. 2019: AICTE-Smart Grid & Smart Cities: Recent Trends - MCE, Hassan
12. 2018: TEQIP –III, Recent Trends in Solar and Wind Energy Technologies for On/OFF Grid Applications- MCE, Hassan 2018: E&ICT Academy, Electric Vehicle 28-5-2018 2-5-2018 IIT, Guwahati
13. 2018: Professional and Academic Quality in Engineering Courses - MCE, Hassan

## Student Development Programs Conducted/Coordinated

1. 2023 – Till-date Entrepreneurial Development Programs under ME-RIISE FOUNDATION
2. 2023: Two-day Workshop on “Beyond Boundaries: Building Circuitry using Machine Learning”, February 2023.
3. 2022: Two-day Workshop on “Recent Trends in IoT and its Applications”, December 2022.
4. 2021: One day Webinar - Overview of the Indian energy ecosystem and technology, policy imperatives as we move to a cleaner energy future as Coordinator
5. 2020: One day State level Event –Ideathon as Coordinator
6. 2020: One day State level Event - Hackathon Covid’19 as Coordinator
7. 2020: One day State level Event - IEEE PES Day 2020 as IEEE SBC Faculty Advisor 2020: One day Training Programme B-Plan Challenge for Women as Coordinator 2019: One day state level event - Seed Grant as Coordinator
8. 2019: One day Expert Talk - Capacity Building &Entrepreneurship Development as Coordinator 2019:5- day Training Programme Sales Force Developer as Coordinator