


Dr.Komathi C



Dr.Komathi C	
Designation:	Professor
Qualification:	Ph.D
Area of Specialization:	Embedded System Technologies
Experience:	Teaching- 20 yrs
	Industry/Polytechnic: NA
Number of Workshops/ Conferences/ FDP Attended:	WORSHOPS-25 FDP-20
Publication:	Journal: International: 15 Patent Published 02
	Conference: National: 04 International: 11
Research Guidance:	Guided 23 UG projects till date

General:	<ul style="list-style-type: none"> • Life Member of ISTE (LM 126427) and Current Annual Member of IEEE(95409645) • Reviewer of SCI indexed journals like IEEE Transactions on Power Electronics, IEEE Transactions on Industrial Electronics IET Power Electronics, International Journal of Electronics, Taylor & Francis, IET Electronics Letters, IET Circuits, Devices and Systems, IET Systems Biology • Co-Convenor for International Conference for Computing, Communication and Control • Department Level Coordinator for NAAC , NBA and ISO • Acted as Department Coordinator for workshops and guest lectures. • Acted as Coordinator for Anna University Sponsored Faculty Development Programme • Coordinator of TED^x event
Skill Set	<ul style="list-style-type: none"> • MATLAB • Thingworx • Python ,R • Embedded C • Programming with microcontrollers like 8051, PIC, ARM, Texas Tiva series, C2000 etc • PLC programming • Latex Editing for journal
Honours and Awards:	<ul style="list-style-type: none"> • Received Award of Recognition for the paper published in the IEEE journal in the year 2018-19 from IEEE Madras Section during IEEE day held on 3rd Nov 2019 • Acted as a mentor of the team shortlisted for the Regional Convention of AICTE-Chhatra Vishwakarma Award held on 18th December 2019 under Southern Region of India • Published a book on Industrial Data Networks • Awarded Elite with Gold Medal and Topper(1%) for the NPTEL Course Digital Circuits and Automatic Control •

<p>Online Courses</p>	<p>NPTEL Courses Completed</p> <p>Matlab Programming and Applications (Elite with Silver medal)-Nov 2019</p> <p>Automatic Control- Elite with Gold Medal (Top 1%)-April 2019</p> <p>Digital Circuits - Elite with Gold Medal (Top 1 %) – Nov 2018</p> <p>Control Engineering – Elite – April 2018</p> <p>Optimal Control – Successfully Completed- Nov 2017</p> <p>Coursera</p> <ol style="list-style-type: none"> 1. 'Introduction to Git and GitHub', ' 2. Programmin g for Everybody (Getting Started with Python)', 3. 'Python Data Structures', 4. Using Python to Access Web Data', 5. 'The Data Scientist’s Toolbox', 6. 'R Programming', 7. 'AI For Everyone', 8. 'Using Databases with Python', 9. 'Capstone: Retrieving, Processing, and Visualizing Data with Python', 10. 'Introduction to Data Science in Python'! 11. Beyond the Sustainable Development Goals (SDGs): Addressing Sustainability and Development! 12. The Sustainable Development Goals – A global, transdisciplinary vision for the future. <p>Thingworx (IIoT Software) Professional Certification from PTC University</p>
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- Currently reviewer of many SCI indexed journals like IEEE Transactions on Power electronics, IEEE Transactions on Industrial Electronics, IEEE Transactions on Energy Convesrion, IET journals like IET-Circuits, Devices and Systems, IET -Power electronics, IET-Control theory and applications, International Journal of Electronics, Taylor and Francis etc,

Research Interests:

Power Converters, Process Control, Soft Computing Techniques, Embedded System

Academic Qualification

PhD- Electrical Engineering

Awarded for the thesis titled “ Investigation of Meta Heuristic Algorithms for cascade control strategy based current harmonic suppression using Interleaved DC-DC SEPIC Converter from Anna University, Chennai during September 2020

M.E – Embedded System Technologies

Awarded with CGPA of **8.91 (University I rank-Gold Medalist)** from Anna University, Chennai during April 2008

B.E – Instrumentation and Control Engineering

Awarded with **84.46% (University V rank)** from University of Madras during April 2002

Experience:

S. No	Name of the Institution	Department	Period of Experience
1.	Sri Sairam Engineering College, West Tambaram, Chennai	Electronics and Instrumentation Engg	10 years (1.06.12-till date)
2.	Panimalar Engineering College	Electronics and Instrumentation Engg	1 yr 25.4.11-30.4.12
3.	R.M.K Engineering College, Kavaraipettai, Chennai	Electronics and Instrumentation Engg	9 months 1.9.10-20.4.10
4.	R.M.K Engineering College, Kavaraipettai, Chennai	Electronics and Instrumentation Engg	1 year and 9 months 1.12.08- 31.8.10
5.	R.M.K Engineering College, Kavaraipettai, Chennai	Electronics and Instrumentation Engg	6 years 15.11.02-30.11.08

Theory Subjects Handled:

- Power Electronics
- Digital Logic Circuits
- VLSI design
- Embedded Systems
- Electrical Measurements
- Renewable Energy
- Fiber Optics and Laser Instruments
- Advanced Control System
- Control Systems
- Computer Control of Processes
- Microprocessor and Microcontroller
- Transducer Engineering
- Industrial Data Networks
- Applied Soft computing
- Communication Engineering
- Process Control

UG projects Guided (Last five years):

S. No	Title of the Project work	Year of Guidance
1	Wifi Enabled Power Extension Board	2020
2	Decentralised Optimal Dispatch of Photovoltaic inverters in Residential Distribution Systems	2019

3	Smart energy metering for cost and Power reduction in house hold applications	2019
4	Carieteeth-A handheld device for tooth cavity detection	2018
5	Performance Analysis of various control schemes for a Quadrupte Tank System	2017
6	Low Cost IOT based Industrial Monitoring and Alert system using Raspberry Pi3	2017
7	Soft computing based highly efficient wind energy harvesting system using MPPT technique	2016
8	Implementing Safety Integration Level in Terminal Automation system	2016
9	Modeling and Analysis of RO process plant using PID controller	2015
10	Modeling and Analysis of separately excited DC motor under loaded conditions using various controllers	2015
11	Flex ray Routed Distributed Governing of Injection Press	2014
12	An Intelligent Wearable sensor for Safety monitoring	2013

Workshops Attended:

- Attended 3 day workshop on Statistical Analysis using Python by ISAR, Chennai during December 2020
- Attended 5 day workshop on Statistical Analysis using R by ISAR, Chennai during Nov 2020
- Attended 3 day workshop on PLC and SCADA programming by Microwin Automation, Trichy during May 2020
- Attended One day Workshop on “Intellectual Property Rights and Innovations at Sri Sairam Engineering College on 20th July 2019.
- Attended five day Hands on Workshop on “Rapid Prototyping –IoT Robotic System Design” conducted by Digital Shark Technology under Texas University Programme form 22.4.19 to 26.4.19
- Attended One day workshop on Latex organized by SRM Institute of Science and Technology, Vadapalani Campus on 29th March 2019.
- Attended three day Hands on Workshop on “Rapid Prototyping –IoT and Embedded System Design” conducted by Digital Shark Technology under Texas University Programme form 12.11.18 to 14.11.18
- Attended three day workshop on “ Process Automation using Matlab” conducted by Intellectz Tech 4 all from 23rd to 25th July 2018.
- Attended training on “Quality Management Systems and Audit Training” conducted by Creative management Consultants, Chennai on 8th June 2018.
- Attended two days National Workshop on “PID Controller”, organized by Madras Institue of Technology Campus, Anna university, Chennai during 16th and 17th September 2016.
- Participated in Siemens Education Day organized by Siemens and Vi Micro Systems Pvt Ltd

at Hotel Le Royal Meridian, Chennai on 24th April 2015

- Attended Faculty Enablement Programme on “A step to Outcome based Accreditation”, organized by Sri Sairam Institute of Technology, Chennai during 4th April 2015.
- Attended training on “Quality Management Systems and Audit Training” conducted by Creative management Consultants, Chennai on 23rd February 2013
- Attended two days National Workshop on “Design and Development of RTOS based Embedded System Design”, organized by SRM Easwari Engineering College, Chennai during 18th and 19th March 2013.
- Attended five-day workshop on “DCS and Field instruments by Yokogawa India Ltd, Chennai” at Sri Sairam Engineering College, Chennai during 7th to 11th January 2013.
- Attended three-day workshop on “PLC and SCADA Applications by Technocrat Automation, Chennai” at Sri Sairam Engineering College, Chennai during 3rd to 5th September 2012.
- Attended two days National Workshop on “Matlab and its Applications”, organized by St.Joseph’s College of Engineering, Chennai during 25th and 26th August 2009.
- Attended National Workshop on “Training the Trainers programme”, organized by R.M.K Engineering College, Chennai during 30th July 2009.
- Attended three days National Workshop on “Electrical Applications in Embedded Systems”, organized by S.R.M University, Chennai during 15th and 17th March 2007.

FDPs/SDPs Attended:

- Attended AICTE sponsored ATAL FDP on “IoT” organized by Sri Sairam Engineering College during 30th Nov– 5th Dec 2020
- Attended AICTE sponsored ATAL FDP on “Data Science” organized by IIITDM during 12th – 17th Nov 2020
- Attended AICTE sponsored Short Term Training program on “E vehicles” organized by RMK Engineering College during 12th – 17th Oct 2020
- Attended Faculty Development program on “Evolutionary Optimization techniques” organized by SSN college of Engineering during 15th -17th June 2020
- Attended AICTE sponsored Short Term Training program on “Recent Trends and challenges of IoT in Automation” conducted by RMD Engineering College from 14th to 19th Sep 2020
- Attended Faculty Development programme on “Biopython” organized by Sathyabama Institute of Science and Technology in collaboration with spoken tutorial, IIT Bombay from 4.5.20 to 9.5.20
- Attended Faculty Development programme on “Entrepreneurship Career Development Program” held at Sri Sairam Engineering College from 8th to 12th April 2019.
- Attended Faculty Development programme on “Power Electronics for Renewable Energy Systems” held at Tagore Engineering College from 18th to 20th January 2018
- Attended Faculty Development programme on “Process Control” organized by Easwari Engineering College in association with CFR, Anna university, Chennai during 1st to 4th and 9th to 11th December 2016.

- Attended and Coordinated Faculty Development programme on “Power Electronics”, organized by the Department of Electronics and Instrumentation Engineering, Sri Sairam Engineering College, Chennai during 1st to 8th June 2015.
- Attended Faculty Development programme on “Role of Academic Excellence in developing World class Higher Learning Institutions and Faculties” organized by Sri Sairam Engineering College, Chennai on 12th December 2012.
- Attended 1 month certified course on “Embedded System” at Fotronichs, Chennai during 1st to 30th November 2010

Special Lectures Delivered:

- Delivered lecture and hands on session on “ Statistical Analysis using R programming in the AICTE sponsored STTP on Applications of AI towards Industry 4.0 on 17th December 2020
- Delivered lecture on “Teaching Learning Process-NBA” in the AICTE Margadharshan sponsored Workshop on NBA organized by Sri Sairam Engineering College on 3rd December 2020
- Delivered lecture on Embedded based System Design in the Guest Lecture organized by SRM Valliammai Engineering College on 16th September 2019.
- Conducted One day Workshop on “IoT based Embedded and Robotic System Design using Texas Processor” in the National Level Robofest on 19th August 2019 at Sri Sairam Engineering College, Chennai
- Delivered a lecture on Data Transfer, Manipulation and Control Algorithms and I/O Instructions in 8051” in Anna University sponsored FDP on “ Microprocessor and Microcontroller” at R.M.D Engineering College on 19th June 2019
- Conducted Five day Workshop on “IoT based Embedded and Robotic System Design using Texas Processor” as value added course for students from 3rd - 8th June 2019 at Sri Sairam Engineering College, Chennai
- Delivered a lecture on “ Characteristics of on-off, proportional, single speed and floating mode controllers” in Anna University Sponsored FDP on “ Control Systems” on 20th December 2016 at Sri Sairam Engineering College, Chennai
- Delivered a lecture on “Software performance optimization, Program level energy and power analysis and optimization” in Anna University Sponsored FDP on “ Real Time Embedded Systems” on 7th June 2016 at Sri Sairam Engineering College, Chennai.
- Delivered a lecture on “Introduction to PWM Techniques- Voltage and harmonic Control” in Anna University Sponsored FDP on “ Power Electronics” on 5th June 2015 at Sri Sairam Engineering College, Chennai.
- Delivered a lecture on “ Block Diagram reduction Techniques and Signal Flow graph” in Anna University Sponsored FDP on “ Control Systems” on 2nd December 2013 at KCG College of Technology

Patent Filed

- Published a patent titled “ Carieteeth-A Handheld device for tooth cavity detection” (Application No.202041047231 A- Published on 6.11.2020)
- Published a patent titled THE SMART SYSTEM FOR PRE-DETECTION OF CARDIAC ISSUES(Application No.202041047200 A- Published on 6.11.2020)

Journal Publications:

S. No	Paper Title	Journal Details	Publication details (Vol/Edition/Year and month of publication)
1	Adaptive Neuro-Fuzzy Inference System-Based Bass Gura Controller for Solar-Powered SEPIC Converter	IETE Journal of Research	https://doi.org/10.1080/03772063.2022.2143442 , Nov 2022
2	Design and Simulation of a Bidirectional DC-DC Converter with PI Controller for Regenerative Braking in Electric Vehicles	IEEE Xplore	10.1109/CENCON58932.2023.10369135 Dec 2023
3	Smart power strip for household power outlet control and energy conservation using IoT	Smart Grids for Smart Cities	Vol2, pp. 175–186, 2023

4	Analysis and design of IMC-PI controller with faster set point tracking and disturbance rejection for Interleaved DC-DC SEPIC converter based power factor correction	International Journal of Power electronics	13(1), Jan 2021
5	Modified Design using Cuckoo search optimization algorithm for backlight LED lighting applications	Lecture Notes in Electrical Engineering , Springer	Vol.659, August 2020 Scopus indexed
6	Design of Grey Wolf Optimizer Algorithm based Fractional Order PI controller for Power Factor Correction in SMPS applications	IEEE Transactions on Power Electronics	IEEE Transactions on Power Electronics vol 35 No.2 Feb 2020 pp: 2100-2118. (SCI and Scopus Indexed with Impact factor of 7.2)
7	Analysis and design of Genetic Algorithm based cascade control strategy for improving the dynamic performance of Interleaved DC-DC SEPIC Converter	Neural Computing and Applications, Springer	Neural Computing and Applications volume 32, pages5033–5047(May 2020) DOI: 10.1007/s00521-018-3944-9 (SCI and Scopus Indexed with Impact factor of 4.217) (listed in Annexure-1,
8	Analysis and design of IMC-PI controller with faster setpoint tracking and disturbance rejection for Interleaved DC-DC SEPIC converter based power factor correction	International Journal of Electronics, Inderscience	Accepted for publication and listed in forth coming articles with DOI: 10.1504/IJPELEC 2020.10017074 (Scopus Indexed)
9	Performance Optimization of a Decoupled Quadruple Tank System Using Fractional Order Proportional Integral Controller.	International Journal of Electronics, Electrical and Computational System IJEECS	vol 6, no 11 pp.258-265 Nov 2017(UGC Indexed)

10	Multi Objective Bacterial Foraging Optimization Algorithm for Power Factor Correction using Interleaved DC-DC SEPIC Converter	IEEE Xplore Digital Library	DOI: 978-1-5090-3001-9 (Scopus Indexed)
11	Performance Optimization of a Quadruple Tank System Using Particle Swarm Optimization Algorithm	Advances in Natural and Applied Sciences, ANSI publications	vol. 11, no. 7 pp. 212-221, May 2017
12	Modeling and Analysis of RO Process plant with and without decoupling using PID Controller	International Journal of Emerging Technology in Computer Science and Electronics (IJETCSE)	vol. 13, no.1, pp. 22-28 March 2015
10	Modeling and analysis of separately excited dc motor under loaded conditions using various Controllers	Journal of Science and Innovative Engineering & Technology	no.11, pp. 5-9, May 2015
11	Adaptive Neuro-Fuzzy Inference System-Based Bass Gura Controller for Solar-Powered SEPIC Converter	IETE Journal of Research	https://doi.org/10.1080/03772063.2022.2143442 , Nov 2022
12	Design and Simulation of a Bidirectional DC-DC Converter with PI Controller for Regenerative Braking in Electric Vehicles	IEEE Xplore	10.1109/CENCON58932.2023.10369135 Dec 2023
13	Smart power strip for household power outlet control and energy conservation using IoT	Smart Grids for Smart Cities	Vol2, pp. 175–186, 2023

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Conference proceedings

National Conference:

S. No	Title of the paper	Conference Details	Month/Year of publication
1	Smart Energy Metering for cost and power reduction in house hold applications	National Conference on Smart Computing and Advanced Communication	March 2019

2.	Performance Optimization Of A Quadruple Tank System Using Fractional Order Proportional Integral Technique Without Decoupling	National Conference on Innovative Techniques in Power Engineering and Drives at Velammal Engineering College, Chennai	March 2017
3.	Design Of IMC-PI Controller For Interleaved DC-Sepic Converter Based Power Factor Correction	National Conference on Innovative Techniques in Power Engineering and Drives at Velammal Engineering College, Chennai	March 2017
4	Digital Watermarking at HDL level for protection of IP Cores	National Conference on Innovative Techniques in Power Engineering and Drives at College of Engineering, Guindy, Chennai	March 2008

International Conferences:

International Conferences:			
1	An Improved Onboard Electric Vehicle Battery Charger Using Optimized Fractional Order Power Factor Correction Controller	IEEE International Conference on “Modelling, Simulation and Computational Intelligence” at Bits Pilani, Dubai	December 2023
2	Smart Power Distribution system for Residential and Industrial Applications	IEEE International Conference on Power, Energy, Transmission and Control systems	December 2020
2	Optimal Controller Tuning for three tank non interacting process	IEEE International Conference on Power, Energy, Transmission and Control systems	December 2020
3	Smart Machine Learning System for Blind Assistance	IEEE International Conference on Power, Energy, Transmission and Control systems	December 2020
4	WiFi Enabled Power Extension Board for Energy Optimization and Control of Devices	International Conference on Research and Advancements & Challenges in Engineering Sciences	March 2020

5.	Decentralized Optimal Dispatch of Photovoltaic Inverters in Residential Distribution systems	7 th International Conference on Contemporary Engineering and Technology, Chennai	March 2019
6.	Performance Optimization of Decoupled Quadraple Tank system using Fractional Order PI Controller.	5 th International Conference on Engineering, Applied Science and Management, Bangalore	Nov 2017
7.	Performance Optimization of a Quadraple Tank System Using Particle Swarm Optimization Algorithm	International Conference on Emerging Trends in Science, Engineering & Technology at Jerusalem Engineering College, Chennai	March 2017
8.	Multi objective Bacterial Foraging Optimization Algorithm for Power Factor Correction using Interleaved DC-DC SEPIC Converter	9 th IEEE Sponsored International Conference on Trends in Industrial Measurements and Automation (TIMA 2017) held at Madras Institute of Technology, Chennai	January 2017
9	Soft Computing based Highly Efficient Wind Energy harvesting System using MPPT Technique	International Conference on Innovative Trends in Engineering by IOSRD, Chennai	September 2016
10.	Modeling and Analysis of RO Process plant with and without decoupling using PID Controller	International Conference on Recent Research in Engineering at S.K.R Engineering College	March 2015
11	Modeling and analysis of separately excited dc motor under loaded conditions using various controllers	International Conference on Contemporary Engineering and Technology, Chennai, India at Ramanujam Engineering College, Chennai	March 2015
12.	FLEXRAY Rooted Distributed Intelligent Governing Of Injection Press	International Conference on Mechanical & Production Engineering held at Chennai	March 2014

13	SURAKSHA- An Intelligent Wearable sensor for safety and monitoring	International Conference ICMMME 2013 at Institute of Research and Development (IRD India), Pune	March 2013.
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