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## Present Position

Professor, Department of Instrumentation Engineering, , Anna University, Chennai from November-2018.

## Present Additional Responsibility

- Deputy Director, Sports Board, Anna University, Chennai from May-2019.

## Previous Positions

- Teaching Fellow, Department of Electrical and Electronics Engineering, College of Engineering Guindy, Anna University, Chennai during August-1998 and July-2003.

## Previous Additional Responsibility

- Ph.d Co-ordinator, Department of Instrumentation Engineering, Anna University, Chennai during June-2014 and June-2015.
- Programme Secretary, Staff Recreation Club, , Anna University, Chennai from January-2014.
- Athenaeum Vice President, Madras Institute of Technology, Anna University, Chennai during September-2013 and August-2014.
- Coordinator, National Service Scheme, Anna University, Chennai during September-2008 and September-2009.

## Degree

- ❖ M.E. in INSTRUMENTATION ENGINEERING, MADRAS INSTITUTE OF TECHNOLOGY, ANNA UNIVERSITY (1996 - 1998).
- ❖ B.E. in ELECTRONICS AND INSTRUMENTATION ENGG , , ANNAMALAI UNIVERSITY (1984 - 1988).

## Research Degree

- ❖ Ph.D. in INSTRUMENTATION from Faculty of ELECTRICAL, COLLEGE OF ENGINEERING, ANNA (2000 - 2006).  
Title: PETRINET BASED MODELING ANALYSIS DESIGN AND CONTROL OF DISCRETE EVENT DYNAMIC SYSTEM .

### Area of Specialisation

- > Petrinet Based modeling and control of DEDS

### Membership in Professional Organization

- > MISTE
- > ISA

### Research Guidance

Number of Ph.D Scholars Guided	: 1
Number of Ph.D Scholars Guiding	: 4
Number of M.E./ M.Tech. Projects Guided	: 32
Number of Ph.D Scholars Guided as Joint-Supervisor	: 1

### Papers Published in Journals

Research Papers Published in International Journals	: 23
Research Papers Published in National Journals	: 1

1. K.Latha & Dr.B.Umamaheswari, " 'PID and Fuzzy Control of DEDS using hybrid Petri Net and PLC'", International Journal of Hybrid Systems, Vol. 4, Issue 1, pp. 165-178 (2004).
2. K.Latha & Dr.B.Umamaheswari, " Reliability analysis and optimal design using Petrinet", AMSE journal on Modeling, Measurement and Control-Series D, Vol. 10, Issue 2, pp. 65-77 (2005).
3. Latha.K, Umamaheswari.B, " Petri Net controller for network connectivity ", IETE Journal of Research, Vol. 51, Issue 4, pp. 295-300 (2005).
4. V.Rajinikanth, Dr.K.Latha, " Identification and Control of Unstable Biochemical Reactor", International Journal of Chemical Engineering and Applications (IJCEA), Vol. 1, Issue 1, pp. 106 - 111 (2010).
5. V. Rajinikanth, K. Latha, " Optimization of PID Controller Parameters for Unstable Chemical Systems Using Soft Computing Technique", International Review of Chemical Engineering (I.RE.CH.E.), , Vol. 3, Issue 3, pp. 350-358 (2011).

6. Rajinikanth.V., Latha. K, " Bacterial Foraging Optimization Algorithm based PID controller tuning for Time Delayed Unstable Systems", The Mediterranean Journal of Measurement and Control, Vol. 7, Issue 1, pp. 197-203 (2011).
7. V. Rajinikanth and K. Latha, " Setpoint weighted PID controller tuning for unstable system using heuristic algorithm ", Archives of Control Sciences, Issue 4, pp. pp. 371-395 (2012).
8. V. Rajinikanth and K. Latha, "Tuning and Retuning of PID Controller for Unstable Systems Using Evolutionary Algorithm ", ISRN Chemical Engineering, (2012).
9. V. Rajinikanth and K. Latha,, "Controller Parameter Optimization for Nonlinear Systems Using Enhanced Bacteria Foraging Algorithm", .", Applied Computational Intelligence and Soft Computing, , (2012).
10. V.Rajinikanth and K.Latha.,, "Modeling, Analysis, and Intelligent Controller Tuning for a Bioreactor: A Simulation Study" ", ISRN Chemical Engineering, (2012).
11. V.Rajinikanth, K.Latha., "I-PD Controller Tuning for Unstable System Using Bacterial Foraging Algorithm: A Study Based on Various Error Criterion, ", Applied Computational Intelligence and Soft Computing, (2012).
12. V. Rajinikanth, K.Latha., " PID Parameter Optimization for Nonlinear Systems using Enhanced Bacteria Foraging Algorithm ", Applied Computational Intelligence and Soft Computing, published by Hindawi Publications. (2012).
13. V. Rajinikanth, K.Latha.,, " "IMC - PID Controller Tuning for FOPTD Unstable Systems using Bacterial Foraging Algorithm", ", Scientific Research and Essays, Vol. 7, Issue 40, pp. 3406-3420 (2012).
14. V. Rajinikanth and K. Latha, "Particle Swarm Approach for Identification of Unstable Processes",Proceedings of the International Conference on Frontiers of Intelligent Computing: Theory and Applications (FICTA)", Advances in Intelligent Systems and Computing, Vol. 199, pp. 505-513 (2013).
15. V. Rajinikanth, K. Latha, and N. Sri Madhava Raja, "Model Parameter Estimation Procedure for a Class of Dynamic Systems using Firefly Algorithm", International Journal of Computational Intelligence Research, Vol. 9, Issue 2, pp. 101-114 (2013).
16. K. Latha, V. Rajinikanth, and P. M. Surekha, "PSO-Based PID Controller Design for a Class of Stable and Unstable Systems", ISRN Artificial Intelligence, (2013).
17. K.Balakrishnan, B.Umamaheswari, K. Latha, "Identification of Resonance in Hybrid Stepper Motor through Measured Current Dynamics in Online for Accurate Position Estimation and Control", IEEE Trans. Industrial Informatics, Vol. 9, Issue 2, pp. 1056-1063 (2013).
18. N Sri Madhava Raja, V Rajinikanth, K Latha, " Otsu based Optimal Multilevel Image Thresholding using Firefly Algorithm ", Hindawi Journals , (2014).
19. V. Rajinikanth and K. Latha, "BFO Approach to identify and control unstable process using a double feedback loop", Intelligent Automation and Soft Computing, (2014).

20. S. SARAVANA KUMAR, K.LATHA and V.RAJINIKANTH, "Intelligent Tuning of PI Controller in an Aerobic Bio-reactor", ARPN JOURNAL OF ENGINEERING AND APPLIED SCIENCES, published by ASIAN RESEARCH PUBLISHING NETWORK. Vol. 10, Issue 4, pp. 1846-1850 (2015).
21. J.Gnanasoundharam , K.Latha, "Adaptive Network based Fuzzy Inference System for Aircraft control", International Journal of Applied Engineering Research, published by Research India Publications. Vol. 10, Issue 7, pp. 17581-17591 (2015).
22. S.Padma and K.Latha, " Mutiple-loop PI Controller design for TITO system using Teaching Learning Based Optimisation", Indian Journal of Science and Technology, Vol. 9, Issue 12, pp. 1-6 (2016).
23. V. Rajinikanth and K. Latha, " Design of PID controller for MIMO system " A study with Heuristic Algorithms", International Journal of Advanced Multidisciplinary research and Studies (IJAMRS), , Vol. 1, Issue 1, pp. 21-26 (2016).
24. S. Saravana Kumar, K.Latha, " Fuzzy control for effluent nitrogen violation removal in wastewater treatment plants", Journal of Environmental Protection and Ecology, Vol.21, Issue 3, 2020, pp., published by Scibulcom Ltd. Vol. 21, Issue 3, pp. 934-942 (2020).

## Papers Presented in Programmes

Research Papers Presented in International Programmes : 7  
Research Papers Presented in National Programmes : 2

1. M.Rekha, M.Padma, K.Latha, "Supervisory control of an automated system with ladder logic programming and analysis using petri nets" presented in a International level conference on Proceedings of the IEEE International Conference on Systems, Man and Cybernetics , organised by Vol.3, pp. 205-209, 2002.
2. "Petri Net Tool for Modeling, Analysis of Discrete Event System and Simulation using FPGA" presented in a International level conference on International Conference on Trends in Industrial Measurements and Automation, Chennai, India, 2009., organised by MIT, India .
3. "Integrating and Unstable Process Model Estimation with Relay Feedback" presented in a International level conference on International Conference on Modeling and Simulation (MS09), , India .
4. "Estimation of rotor position and speed for hybrid stepper motor under various phase excitation schemes and compensated resonance" presented in a International level conference on Third IEEE International Conference on Power Engineering, Energy and Electrical Drives, Power Eng 2011, Spain .
5. "Optimal Multilevel Image Thresholding using Lévy driven BFO Algorithm" presented in a International level conference on International Conference on Trends in Industrial Measurements and Automation, India .

6. "Hybrid heuristic Algorithm based controller Tuning for a Bioreactor" presented in a International level conference on International conference on green Computing, communication and electrical Engineering, India .
7. "FSPN based modeling and Simulation of a boiler in Thermal Power plant" presented in a International level conference on DAMS 2003, organised by CIT, Coimbatore, india from 06-May-2003.
8. R.Saranya, S.SaravanaKumar, K.Latha , "Modelling and control of an Activated sludge process using Advanced Control Strategy" presented in a National level conference on Recent Trends in Power, Control, Networking, Embedded and Communication Engineering, organised by Karpaga Vinayaga Engineering College, India from 26-Mar-2015 to 26-Mar-2015.
9. M.Rekha,S.Padma,K.Latha, "Firefly Algorithm based PID Controller design for a Non-Linear bioreactor" presented in a National level conference on International Conference on Applications of Engineering,Science & Technology, India from 13-Apr-2015 to 13-Apr-2015.

### Sponsored Projects Completed

1. "Advanced Process Control Library", funded by DIT (April-2009 - October-2010). Project Cost: 25.07.

### Programme Chaired

1. Co Chairman, International level conference titled "TIMA2017-Preconference Tutorial" conducted by MIT from 06-Jan-2017.

### Programme Organized

1. C0 Co-ordinator, National level Short Course on "3-day short-term course on Power Plant Instrumentation " from 14-Nov-2006 to 16-Nov-2006.
2. Organizing Secretary, National level conference on "Recent trends in Instrumentation & Control" from 22-Mar-2013 to 23-Mar-2013.
3. Co-Ordinator, National level Short Course on "Faculty Development Training Programme on Embedded Systems" from 30-Nov-2015 to 20-Dec-2015.
4. co-ordinator, National level workshop on "Two days workshop on Internet of Things" from 21-Oct-2016 to 22-Oct-2016.
5. Publication chair, International level conference on "ICCST2019-53rd IEEE International Carnahan Conference on Security Technology" from 01-Oct-2019 to 03-Oct-2019.

### Programme Attended

1. Participated in a National level workshop on "Empowerment of Women in Engineering" organized by CEG, Anna University, India from 26-Sep-2003 to 27-Sep-2003.

2. Attended a National level Short Course on "Short term course on Virtual Instrumentation" organized by MIT, Anna University, India from 24-Nov-2003 to 27-Nov-2003.
3. Attended a National level Short Course on "Course on Re-Engineering Teaching Skills" organized by MIT, Anna University, India from 06-Apr-2004 to 07-Apr-2004.
4. Attended a National level Short Course on "Course on Trends in Intelligent measurement and control" organized by MIT, Anna University, India from 22-Nov-2004 to 27-Nov-2004.
5. Participated in a International level conference on "4th International Conference on 'trends in Industrial measurements and Automation'" organized by Madras Institute of Technology, Chennai, India from 16-Dec-2004 to 18-Dec-2004.
6. Attended a National level Short Course on "Course on Recent trends in process Automation" organized by Madras Institute of Technology, Chennai, India from 18-Feb-2005 to 18-Feb-2005.
7. Attended a National level Short Course on "Course on Physical Design and Verification Issues in ASIC " organized by Madras Institute of Technology, Chennai, India from 08-Sep-2005 to 09-Sep-2005.
8. Attended a National level Short Course on "A course on Control Engineering" organized by Madras Institute of Technology, Chennai, India from 19-Jun-2006 to 24-Jun-2006.
9. Attended a National level Short Course on "Co-ordinated 3-day short-term course on Power Plant Instrumentation " , India from 14-Nov-2006 to 16-Nov-2006.
10. Attended a National level Short Course on "Short term course on 'Control Loop performance Assessment' " organized by Indian Institute of Technology Madras, India from 08-Dec-2006 to 09-Dec-2006.
11. Participated in a National level workshop on "Virtual Instrumentation" organized by Madras Institute of Technology, Chennai, India from 02-Mar-2007 to 03-Mar-2007.
12. Participated in a National level workshop on "CS 3000 Fundamentals and Engineering" organized by Yokogawa India Ltd., Chennai, India from 14-May-2007 to 18-May-2007.
13. Attended a National level Short Course on "Faculty Development Training Programme on Process Control " organized by Madras Institute of Technology, Chennai, India from 01-Dec-2008 to 08-Dec-2008.
14. Participated in a International level conference on "International conference TIMA 2009" organized by Madras Institute of Technology, Chennai, India from 04-Jan-2009 to 06-Jan-2009.
15. Participated in a National level workshop on "Indo-German workshop on Advanced technology" organized by Madras Institute of Technology, Chennai, India from 03-Dec-2009 to 04-Dec-2009.
16. Attended a National level seminar on "2nd National Seminar on Automation Systems Technology& Tutorial on AdvancedAutomation" organized by Madras Institute of Technology, Chennai, India from 18-Dec-2009 to 19-Dec-2009.

17. Participated in a National level workshop on "National workshop on high temperature Materials in Aerospace Applications" organized by Madras Institute of Technology, Chennai, India from 08-Jan-2010 to 09-Jan-2010.
18. Participated in a National level workshop on "Two day Workshop on Recent trends and development in Engine Management system and Alternate fuels" organized by Madras Institute of Technology, Chennai, India from 22-Mar-2010 to 23-Mar-2010.
19. Attended a National level Short Course on "Faculty Development Training Programme on "Adaptive control"" organized by Madras Institute of Technology, Chennai, India from 03-May-2010 to 09-May-2010.
20. Participated in a National level workshop on "Two day workshop on PID Controller" , India from 17-Sep-2010 to 18-Sep-2010.
21. Attended a International level seminar on "Preconference tutorial on System simulation, Advanced process Control & IntelligentSystems" organized by CDAC, Trivandrum, India from 16-Dec-2010 to 17-Dec-2010.
22. Participated in a National level workshop on "ISTE WORKSHOP(MHRD) on Basic Electronics" organized by Indian Institute of Technology Bombay, India from 28-Jun-2011 to 08-Jul-2011.
23. Attended a National level Short Course on "AICTE sponsored Staff Development Programme on "Robotics technology for Manufacturing"" organized by Madras Institute of Technology, Chennai, India from 10-Dec-2011 to 23-Dec-2011.
24. Participated in a National level workshop on "Research trends in Embedded system" , India from 30-Mar-2012 to 31-Mar-2012.
25. Attended a International level Short Course on "One day Awareness Course on ISO 9001:2008" organized by BUREAU VERITAS, India from 12-Mar-2013 to 12-Mar-2013.
26. Attended a National level Short Course on "FDP on "Instrumentation in Petrochemical industry"" organized by Madras Institute of Technology, Chennai, India from 03-Jun-2013 to 09-Jun-2013.
27. Participated in a National level workshop on "Workshop on" R & D Project proposals-Awareness,needs and benefits"(CTDT)" organized by Madras Institute of Technology, Chennai, India from 28-Jun-2013 to 28-Jun-2013.
28. Attended a National level Short Course on "FDP on "Digital control system"(CFD)" organized by Madras Institute of Technology, Chennai, India from 02-Dec-2013 to 08-Dec-2013.
29. Attended a International level seminar on "Pre Conference Tutorial on " Embedded systems" & TIMA-2013" organized by Madras Institute of Technology, Chennai, India from 22-Dec-2013 to 24-Dec-2013.
30. Attended a National level Short Course on "FDP on " Finite Element Analysis"" organized by Madras Institute of Technology, Chennai, India from 04-Dec-2014 to 06-Dec-2014.

31. Participated in a National level conference on "National Conference on, "Recent trends in Instrumentation & Control(RTIC-2015)"" organized by Madras Institute of Technology, India from 13-Mar-2015 to 14-Mar-2015.
32. Attended a National level seminar on "SIEMENS EDUCATION DAY" organized by SIEMENS and VI Microsystems Pvt.Ltd, India from 24-Apr-2015 to 24-Apr-2015.
33. Participated in a National level workshop on "Two days hands-on workshop on "FPGA Based Embedded System Design"" organized by National Institute of Electronics & Information Technology, Chennai, India from 18-Sep-2015 to 19-Sep-2015.
34. Participated in a National level conference on "Recent Trends in Instrumentation & Control(RTIC - 2016)" organized by MIT, India from 18-Mar-2016 to 19-Mar-2016.
35. Participated in a International level conference on "TIMA2017" organized by MIT, India from 06-Jan-2017 to 08-Jan-2017.
36. Participated in a National level workshop on "FDTP on EI6602-Process Control" organized by MIT, India from 30-Nov-2017 to 06-Dec-2017.
37. Participated in a National level workshop on "One Day workshop on Intellectual Property Rights 2018" organized by MIT, India from 02-Feb-2018.
38. Participated in a National level conference on "4th National Conference on "Recent Trends in Instrumentation and Control(RTIC2018)" organized by MIT, India from 02-Mar-2018 to 03-Mar-2018.
39. Participated in a National level workshop on "Gian course on "Practical PID control" organized by MIT, India from 08-Oct-2018 to 12-Oct-2018.
40. Participated in a National level workshop on "2 weeks online Refresher/FDP on Recent innovations in Electrical, Electronics, Instrumentation, Automation and teaching Pedagogy organized by MHRD " organized by Sairam Engg College, India from 18-May-2020 to 30-May-2020.
41. Participated in a National level workshop on "Government Officials Training Program on "Internet of Things(IOT) under "FutureSkills PRIME" " organized by NIELIT & CDAC, India from 15-Feb-2021 to 26-Feb-2021.
42. Participated in a National level workshop on "5 day online FDP on the theme "inculcating Universal Human values in Technical Education " organized by AICTE, India from 12-Jul-2021 to 16-Jul-2021.

### Invited Lectures

1. Delivered a Lecture on "Bode Plot" in FDTP on Control Engg organized by EEE department, CEG, Anna University, Chennai (28-Nov-2012).
2. Delivered a Lecture on "Fuzzy logic Theory and few applications" in 10 thDec2012 to 16thDec 2012" in FDTP on Soft computing organized by MIT,Anna University , chennai (13-Dec-2012).



3. Delivered a Lecture on "Fuzzy fundamentals and FLC" in FDTP on CS2461 Applied Soft computing/EE2025 Intelligent Control organized by SSN Engg College, Chennai (11-Jun-2013).
4. Delivered a Lecture on "Embedded and real time systems" in Guest Lecture organized by Mohammed Sathak A.J.College of Engineering, Chennai (10-Feb-2014).
5. Delivered a Lecture on "Embedded and real time systems" in Guest Lecture organized by S.A.College of Engineering, Chennai (18-Feb-2014).
6. Delivered a Lecture on "PLC counters and Timers and other programming languages" in FDP on Automaton organized by Mechatronics Division, MIT (19-May-2017).
7. Delivered a Lecture on "PLC Basics and Applications" in FDP on Industrial Automation organized by Sakthi Polytechnic, online mode (24-Mar-2021).