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Area of Specialization : Modeling and Control of Auto tuning

## **Publications:**

### **International Journal Publications:**

1. Kamal, C., Thyagarajan, T. , and **Kalpana, D.** “Thermal Analysis of BLDC Motor using Multiobjective Optimization”, International Transactions on Electrical Energy Systems, 2020. DOI: 10.1002/2050-7038.12546 [Impact Factor: **1.692**] (Online)
2. Kamal, C., Thyagarajan, T. , **Kalpana, D.**, and Pragadheeshwaran T. “Multiobjective design optimization and analysis of magnetic flux distribution for slotless permanent magnet brushless DC motor using evolutionary algorithms”, Journal of Magnetism and Magnetic Materials, Vol. 476, pp. 524-537, 2019. [Impact Factor: **3.046**]
3. **Kalpana, D.**, and Thyagarajan, T. “Parameter Estimation using Relay Feedback”, Reviews in Chemical Engineering, Vol. 0, No. 0, pp. 0, 2018. [Impact Factor: 4.490], ISSN 0167-8299, published online: 14.4.2018, DOI: <https://doi.org/10.1515/revce-2017-0099>. [Impact Factor: **4.49**]
4. **Kalpana, D.**, **Thyagarajan, T.** and Thenral, R. “Improved Identification and Control of 2-by-2 MIMO system using Relay Feedback”, Control Engineering and Applied Informatics, Vol. 17, No. 4, pp. 23-32, 2015. [Impact Factor: **0.537**], ISSN 1454-8658.
5. **Kalpana, D.**, Thyagarajan, T. and Gokulraj, N. “Modeling and control of non-square MIMO system using relay feedback”, ISA Transactions, Vol.59, No.1, pp.408-417, 2015. [Impact Factor: **2.984**], SJR: 1.210, SNIP: 2.427.
6. Shri Shankari,S., Mohitha Gireeshan, Azhagan,V. & **Kalpana, D.** “Real Time Implementation of Advanced Control Scheme (Fuzzy Logic Controller) for Three Tank Interacting System”, Middle-East Journal of Scientific Research, Vol.23, (Sensing, signal Processing and Security), 232-238, 2015.

### International Conference:

1. **D. Kalpana** and M. Chidambaram, “Auto Tuning of Decentralized PI Controllers for a Non-Square Unstable MIMO System”, 1<sup>st</sup> IEEE International Conference on Measurement, Instrumentation, Control and Automation (ICMICA 2020), organized by Department of Electrical Engineering, National Institute of Technology, Kurukshetra, on 24<sup>th</sup> to 26<sup>th</sup> June, 2020.
2. **D. Kalpana** and M. Chidambaram, “Auto tuning of Decentralized PI Controllers for a Non-square System”, First International Conference on Automation, Signal Processing, Instrumentation and Control-iCASIC-2020, Vellore Institute of Technology, Vellore, on 27<sup>th</sup> and 28<sup>th</sup> February, 2020.
3. Priyadarshini Mahalingam, **Kalpana Dharmalingam** and Thyagarajan Thangavelu, “Univariate Sensor Data Prediction using Conventional and Machine Learning based Time Series Techniques”, First International Conference on Automation, Signal Processing, Instrumentation and Control-iCASIC-2020, Vellore Institute of Technology, Vellore, on 27<sup>th</sup> and 28<sup>th</sup> February, 2020.
4. M.Priyadharsini, **D.Kalpana** and T.Thyagarajan, “Decentralized Control of Stable MIMO System using Improved Relay Autotuning”, Proceedings of 6th International Conference on Electrical Energy Systems (ICEES 2020) dated on 20 - 22 February 2020 organized by the Department of Electrical and Electronics Engineering, SSN College of Engineering, Kalavakkam, Chennai.
5. D.Kalpana and M.Chidambaram, “**Comparison of autotuning methods of PI Controllers for TITO Systems**” Proceedings of International Conference on Instrumentation and Control Engineering (ICECON 2019) dated on 19<sup>th</sup> to 21<sup>st</sup> December 2019 organized by the Department of Instrumentation and Control Engineering at National Institute of Technology, Trichy.
6. **D.Kalpana**, T.Thyagarajan and N.Venkatachalam, “Design of Fractional Order PI Controller for MIMO System using Relay Feedback”, in the 9<sup>th</sup> International conference on “Trends in Industrial Measurements and Automation (TIMA-2017)” in Madras Institute of Technology, Chennai-44, January 2017.
7. B.S.Thamarai Selvi, **D.Kalpana** and T.Thyagarajan, “Modeling and Prediction of Boiler

Drum in a Thermal Power Plant”, in the 9<sup>th</sup> International conference on “Trends in Industrial Measurements and Automation (TIMA-2017)” in Madras Institute of Technology, Chennai-44, January 2017.

8. C.Kamal, T.Thyagarajan, M.Selvakumari and **D.Kalpana**, “Cogging Torque Minimization in Brushless DC Motor using PSO and GA based Optimization”, in the 9<sup>th</sup> International conference on “Trends in Industrial Measurements and Automation (TIMA-2017)” in Madras Institute of Technology, Chennai-44, January 2017.
9. K.Bijeesh, **D. Kalpana** and T.Thyagarajan, “Identification of 3-By-3 MIMO System using Relay Feedback”, in the IEEE International conference on “Advanced Communication Control and Computing Technologies (ICACCCT-2014)” in Syed Ammal Engineering college, Ramanathapuram, May 2014.
10. M. Priyadharsini , T. Thyagarajan, **D. Kalpana**, C. Esakkiappan, “Modeling of 2x2 MIMO System using Relay Feedback”, in the 8<sup>th</sup> International conference on “Trends in Industrial Measurements and Automation (TIMA-2013)” in Madras Institute of Technology, Chennai-44, March 2013.
11. Presented a paper on, “Modelling of Binary Truncated CDMA based On-chip Interconnected Network” in the International conference on “Swarm, Evolutionary and Memetic Computing, SEMCCO 2010” in SRM University, Kattankulathur.

#### **National conferences:**

1. M.Priyadharsini and **D.Kalpana**, “Precision motion control of Piezoelectric Actuator using Fuzzy PID Control”, in the 4<sup>th</sup> National Conference on Recent Trends in Instrumentation and Control (RTIC-2018) at Department of Instrumentation Engineering, MIT Campus, Anna University, Chromepet on 2<sup>nd</sup> & 3<sup>rd</sup> March 2018.
2. **Kalpana, D.** & BharathRaj, K. “Home Automation using Internet of Things”, National Conference on Robotics, Automation and Mechatronics Systems (NCARMS-2016), Organized by the Department of Production Technology, MIT Campus, Anna University, Chennai.
3. R.Thenral and **D. Kalpana**, “Identification and Control of 2-By-2 MIMO System using Relay Feedback”, in the National conference on “Communication Control and Energy

Engineering (NCCCEE-2014)” in Vel Tech Dr.RR & Dr.SR Technical University, Chennai-62, April 2014.

4. M. Priyadharsini , T. Thyagarajan, **D. Kalpana**, C. Esakkiappan ,” Modelling of 2 X 2 MIMO system using relay feedback”,1<sup>st</sup> National Conference NCETEEE’13, UCEP, Panruti, March 2013.
5. M. Priyadharsini , T. Thyagarajan, **D. Kalpana**, C. Esakkiappan,”,” “Modeling of Off Diagonal Interactive Transfer function of 2-by-2 MIMO System using Relay Feedback”, in the DST Purse Sponsored National conference on “Recent Trends in Instrumentation and Control (RTIC-2013)”, Department of Instrumentation Engineering, MIT Campus, 2013.
6. **D.Kalpana**, ‘Low Power VLSI Design for a RFID Passive Tag baseband system enhanced with a Cryptography Engine’ in the National conference on “Innovative Techniques in Power Engineering and Drives” in Velammal Engineering College, Chennai-66.
7. **D.Kalpana**, ‘Modelling of Binary Truncated CDMA based On-chip Interconnected Network’ at the Third National conference on “Advanced Techniques in Instrumentation Control and Communication Engineering” in St.Peter’s Engineering College, Chennai-54.
8. **D.Kalpana**, ‘Binary Truncated CDMA based Modelling for On-chip Interconnection’ in the National conference on “Advanced Technologies in Electrical Engineering-NCEE 09” in Kamaraj College of Engineering and Technology, Virudhunagar-626001.