

Profile Page



Name : Dr Mahendra Kumar

Designation : Assistant Professor Grade-ii

Department : Instrumentation & Control Engg.

Qualification : PhD System and Control (Indian Institute of Technology Roorkee)
MTech Control and Instrumentation Engg (Rajasthan Technical University Kota)
BTech Electronics and Comm. Engg (Rajasthan Technical University Kota)

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Research Interests :

Advances in Control Theory, Design and Approaches, Feedback and Feedforward Control, Robust and Resilient control, PID control and its variants, Internal model control design, Polynomial control design, Observer design, AI, Soft computing, Machine Learning (Reinforcement Learning), Formation Control, Cyber Physical System & Control (CPS & C), Stability analysis and their applications in Time-delayed and uncertain systems, MicroGrid, Renewable Energy Systems, Power System Operation & Control, DC-DC Converters, Aerodynamical Systems, Autonomous Systems, Biomedical Robotics Systems, Medical Imaging Systems, and Agriculture.

In collaboration, Sliding Mode Control, Event-triggered Control, Active Disturbance Rejection Control (ADRC), Formal Verification & Synthesis, and Formal Methods.

Other Profile Links :

Google Scholar Link :

Google Scholar [Click Here](#)

Personal Web Link :

Mahendra Kumar Web-portal [Click Here](#)

Scopus [Click Here](#)

Vidwan [Click Here](#)

Researcher ID [Click Here](#)

ORCID ID [Click Here](#)

Journal Publications :

Year	Journal	Publication
2023	Scientific Reports, Nature, 13, 2901 (2023)	Mahadeva, R., Mahendra Kumar, Gupta, V. et al. Modified Whale Optimization Algorithm based ANN: a novel predictive model for RO desalination plant.
2023	Arabian Journal for Science and Engineering	R Mahadeva, M Kumar, A Goel, SP Patole, G Manik, "A Novel AGPSO3-based ANN Prediction Approach: Application to the RO Desalination Plant,"
2022	Water Supply	Rajesh Mahadeva, Mahendra Kumar, Gaurav Manik, Shashikant P. Patole, "An optimized PSO-ANN model for improved prediction of water treatment desalination plant performance"
2022	IEEE Transactions on Industry Applications	Mahendra Kumar, "Resilient PIDA Control Design based Frequency Regulation of Interconnected Time-delayed Microgrid Under Cyber-attacks"
2022	IEEE Access	Rajesh Mahadeva, Mahendra Kumar, Gaurav Manik, Shashikant P. Patole, "PID Control Design using AGPSO Technique and its Application in TITO Reverse Osmosis Desalination Plant"
2022	Sustainable Computing: Informatics and Systems	Rajesh Mahadeva, Mahendra Kumar, Gaurav Manik, Shashikant P. Patole, "Employing artificial neural network for accurate modeling, simulation and performance analysis of an RO-based desalination process"
2022	IEEE Access	Rajesh Mahadeva, Mahendra Kumar, Gaurav Manik, Shashikant P. Patole, "Desalination Plant Performance Prediction Model Using Grey Wolf Optimizer based ANN Approach"
2021	Desalination and Water Treatment	Rajesh Mahadeva, Mahendra Kumar, Gaurav Manik, Shashikant P. Patole, "Modeling, simulation, and optimization of the membrane performance of seawater reverse osmosis desalination plant using neural network and fuzzy based soft computing techniques"
2021	Electrical Engineering	Mahendra Kumar and Yogesh V. Hote, "Maximum Sensitivity Constrained Coefficient Diagram Method based PIDA Controller Design: Application for Load Frequency Control of an Isolated Microgrid,"
2021	Journal of Intelligent & Robotic Systems	Mahendra Kumar and Yogesh V. Hote, "Real-time Performance Analysis of PID2 Controller for Nonlinear Twin Rotor TITO Aerodynamical System,"
2021	Asian Journal of Control	Mahendra Kumar and Yogesh V. Hote, "Comments and Further results on "Optimal design of non-fragile PID controller","
2020	Sensing and Imaging Journal	Maloo, Snehlata, Mahendra Kumar, and N. Lakshmi, "A Modified Whale Optimization Algorithm Based Digital Image Watermarking Approach,"
2020	IEEE Transactions on Control Systems Technology	Mahendra Kumar and Yogesh V. Hote, "Robust PID2 Controller Design for Perturbed Load Frequency Control of an Interconnected Time Delayed Power Systems,"
2020	IEEE Transactions on Industry Applications	Mahendra Kumar, Y. V. Hote and S. Vishwanatha, "Polynomial Controller Design and its Application: Experimental Validation on a Laboratory Setup of Nonideal DC-DC Buck Converter,"
2020	IET Generation, Transmission and Distribution	Mahendra Kumar and Yogesh V. Hote, "Graphic RCRA-PIDA Tuning based on Maximum Sensitivity for Automatic Generation Control of Thermal and Hydro Power Systems,"
2019	IETE Journal of Research	Seema Agrawal, D. K. Palwalia and Mahendra Kumar, "Performance Analysis of ANN Based 3-Phase 4-Wire Shunt Active Power Filter for Harmonic Mitigation under Distorted Supply Voltage Conditions"

Conference Publications :

Year	Conference	Publication
2021	2021 IEEE Texas Power and Energy Conference (TPEC2021), Texas A&M University, Texas, February 2-5, 2021	Mahendra Kumar, Seema Agrawal and Tarek H. Mohamed, "Application of AGPSO Algorithm in Frequency Controller Design for Isolated Microgrid,"
2021	2021 IEEE Texas Power and Energy Conference (TPEC2021), Texas A&M University, Texas, February 2-5, 2021	Mahendra Kumar and Yogesh V. Hote, "PID2 Controller Design Based on Internal Model Control Approach for a Non-ideal DC-DC Boost Converter,"
2020	2020 IEEE 17th India Council International Conference (INDICON), Delhi, India, 2020	Mahendra Kumar and Yogesh V. Hote, "A Novel PIDA Controller Design for a Single-Axis Gimbal System,"
2020	2020 IEEE International Conference on Power Electronics, Smart Grid and Renewable Energy (PESGRE2020), Cochin, Kerala, India	Mahendra Kumar, Yogesh V. Hote, and Vishwanatha Siddhartha. "Analysis and Application of a Polynomial Controller Design for Non-ideal DC-DC Buck Converter (Part I)."
2019	2019 IEEE 58th Conference on Decision and Control (CDC), Nice, France	Mahendra Kumar and Yogesh V. Hote. "Robust IMC-PIDA Controller Design for Load Frequency Control of a Time delayed Power System."
2018	3rd IFAC Conference on Advances in Proportional-Integral-Derivative Control (PID 2018), Ghent, Belgium, May 08-11, 2018	Mahendra Kumar and Yogesh V. Hote, "Robust CDA-PIDA Control Scheme for Load Frequency Control of Interconnected Power Systems,"

Professional Affiliations :

Designation	Organization
Member	IEEE
Member	IEEE Control System Society
Member	AIENG

Award and Honours :

Title	Activity	Given by	Year
IEEE student travel support award	2019 IEEE 58th Conference on Decision and Control (CDC-2019), Nice, France	IEEE Control System Society	2019
International student travel fund	CDC-2019, France	Indian Institute of Technology Roorkee	2019
National student travel fund	PESGRE-2020, Kerala	Electrical Engineering Department, Indian Institute of Technology Roorkee	2019
Gold Medal	Securing First Position in MTech Control and Instrumentation at University Level	Rajasthan Technical University Kota	2014