

CURRICULUM-VITAE



Dr. Natwar Singh Rathore

Asst. Professor (Electrical Engineering)

College of PHT & FP,

Sardar Vallabhbhai Patel University of Agriculture and Technology, Modipuram, Meerut-250110, Uttar Pradesh, India

Mobile:- +91-8770528148, +91-9462658092

E-Mail:- natwarismertia@gmail.com, nsrathore@svpuat.edu.in

GOOGLE SCHOLAR : <https://scholar.google.com/citations?user=FOwJIAoAAAAJ&hl=en>

SCOPUS ID : <https://www.scopus.com/authid/detail.uri?authorId=55820363400>

ORCID ID : <https://orcid.org/0000-0002-1690-9919>

PUBLONS : <https://publons.com/researcher/1729554/dr-natwar-singh/>

EDUCATIONAL QUALIFICATION

- Ph. D. (2014-2018) in **Application of AI in Control and Instrumentation (Electrical Engineering)** from **National Institute of Technology, Raipur (CG)**.
- M. Tech. (2011-2013) in **Control and Instrumentation (Electrical Engineering)** from **Motilal National Institute of Technology, Allahabad, Prayagraj**.
- B. Tech. (2006-2010) in **Electronics Instrumentation and Control Engineering** from **Govt. Engineering College, Ajmer**.
- Sr. Secondary (2005) in **PCM** from **Mayoor School, Ajmer**
- Secondary (2003) from **St. Paul's Sr. Secondary School, Ajmer**.

THESIS/DISSERTATION/PROJECT WORK

Ph.D. Thesis– “Controller Design for Reverse Osmosis Desalination Plants using Optimization Techniques”.

M. Tech. Dissertation– “Simulation of RO plant using PID controller based on Particle Swarm Optimization”.

B. Tech. Projects–

- “Voice Guided Wireless ROBOT” (B. Tech Major-Project).
- “Sound Recorder Analyzer” (B. Tech Minor-Project)

WORK EXPERIENCE

- Working as **Asst. Professor (Electrical Engineering)** in **College of PHT & FP, SVPUAT, Meerut, India** since April 2025.
- Working as Asst. Professor (Research) in KIET Group of Institutions, Delhi-NCR from July 2019 to March 2025.
- Worked as Asst. Professor in G. H. Rasoni University Amravati (MH) from July 2018-June 2019.
- Worked as Senior Research Fellow in National Institute of Technology Raipur (CG) from Aug 2014-July 2018.
- Worked as Project Fellow in CSIR-CEERI Pilani (Rajasthan) from Sep-2013 to Dec-2013.
- Worked as Junior Research Fellow in CSIR-CEERI Pilani (Rajasthan) from Apr-2011 to April-2013.
- Worked as Guest Faculty in Aptech Education, Ajmer from June-2010 to March-2011.

International Journals

1. **N. S. Rathore**, V. P. Singh, Bui Duc Hong Phuc “A Modified Controller Design Based on Symbiotic Organisms Search Optimization for Desalination System ”, **Journal of Water Supply: Research and Technology - AQUA**, 2019, Vol. 68 (5), pp. 337-345, **I.F.-3.007**.
2. **N. S. Rathore**, V. P. Singh, “Whale Optimisation Algorithm Based Controller Design for Reverse Osmosis Desalination Plants”, **International Journal of Intelligent Engineering Informatics** (Inderscience), 2019, Vol. 7 (1), pp. 77-88, **I. F.- 0.19**.
3. Bui Duc Hong Phuc, Sam-Sang You, **N. S. Rathore**, and Hwan-Seong Kim, “Dynamical analysis and robust control for dive plane of supercavitating vehicles”, **Applied Ocean Research** (Elsevier), 2019, Vol. 84, pp. 259–267, **I.F.- 3.761**.
4. BDH Phuc, Sang-Do Lee, Sam-Sang You, **N. S. Rathore**, “Nonlinear Robust Control of High-Speed Supercavitating Vehicle in the Vertical Plane”, **Journal of Engineering for the Maritime Environment** (SAGE Journals), Vol. 234 (2), pp. 510-519, 2020, **I.F.-1.531**.
5. S. Akter, S. Biswal, **N. S. Rathore**, P. Das, Almoataz Y. Abdelaziz “Amplitude Based Directional Relaying for UPFC Compensated Line during Single Pole Tripping”, **Electrical Power System Research** (Elsevier), Vol. 184, July 2020, pp. 106290, **I.F.-3.818**.
6. **N. S. Rathore**, V. P. Singh, “Design of Optimal PID Controller for the Reverse Osmosis using Teacher-Learner-Based-Optimization”, **Membrane Water Treatment** (Techno-press), 2018, Vol. 9 (2), pp. 129-136, **I.F.-1.167**.
7. **N. S. Rathore**, V. P. Singh, Bhavnesk Kumar, “Controller Design for Doha Water Treatment Plant using Grey Wolf Optimization”, **Journal of Intelligent & Fuzzy Systems** (IOS Press) 2018, Vol. 35 (5), pp. 5329-5336, **I.F.-1.851**.
8. V. P. Singh, T. Prakash, **N. S. Rathore**, D.P.S. Chauhan, S.P. Singh, “Multilevel thresholding with membrane computing inspired TLBO”, **International Journal on Artificial Intelligence Tools** (World Scientific), 2016, Vol. 25 (6), pp. 1650030 (1-21), **I.F.-1.208**.
9. S. Biswal, M. Tajdinian, A. R. Adly, R. D. Patidar, A. K. Bhoi, **N. S. Rathore** “Kullback- Leibler Divergence Based Differential Protection Scheme for Shunt Compensated Transmission Line”, **IET Generation, Transmission & Distribution**, 2021, Vol. 15 (12), pp. 1808-1819, **I.F. 2.995**.
10. V. Gupta, **N. S. Rathore**, A. K. Arora, S. Gupta, A. Kanungo, Salim and N.K. Gupta, “Electrocardiogram signal pattern recognition using PCA and ICA on different databases for improved health management”, **International Journal of Applied Pattern Recognition** (Inderscience), 2022, Vol. 7 (1), pp. 41-62. (ESCI).
11. V. Gupta, P. Kumar, S. Diwania, N.K. Saxena, **N. S. Rathore**, “Preprocessing ECG signal based on ANF and ICA: a Comparison”, **International Journal of Data Analysis Techniques and Strategies** (Inderscience), 2022. (Scopus)
12. V. Gupta, A. Kanungo, **N. S. Rathore**, N. K. Saxena, S. Diwania, “ARTFA-SVM-NPCA based ECG signal analysis for advancement in computational medicine”, **Theory of Computing Systems** (Springer), 2024, (Under review), **I.F.-0.5**
13. Gyan Singh, Amit K. Chaturvedi, **N. S. Rathore**, “Task scheduling algorithms in the cloud computing environment: A comprehensive review”, **Solid State Technology**, 2020, Vol. 63 (6), pp. 17012-17030. (Scopus)
14. S. Gupta, V. P. Singh, S. P. Singh, T. Prakash, **N. S. Rathore**, “Elephant Herding Optimization based PID Controller Tuning”, **International Journal of Advanced Technology and Engineering Exploration**, 2016, Vol. 3 (24), pp.194-198. (Scopus)

15. **N. S. Rathore**, D. P. S. Chauhan, V. P. Singh, "Luus-Jaakola Optimization Procedure for PID Controller Tuning in Reverse Osmosis System", **International Journal of Electrical, Electronics and Data Communication**, 2015, Vol. 3 (6), pp 77-80.
16. **N. S. Rathore**, N. Kundariya, A. Narain, "PID Controller Tuning in Reverse Osmosis System based on Particle Swarm Optimization", **International Journal of Scientific and Research Publications**, 2013, Vol. 3 (6), pp. 1-5.

Research Projects/Consultancies/ Patents

1. **Patent entitled** "Transformer-Based Weight Measurement System" Design No. 6381150, Grant Dated 06/08/2024, UK Design.
2. **Patent entitled** "An Implicit Approach for Power Quality Assessment and Controlling of Solar Photovoltaic Integrated Converter System" Application No. 202211013318A, The Patent Office Journal No. 12/2022, Dated 25/03/2022, pp. 17922.
3. **Co-PI** in the Project Consultancy Grant of Rs. 150562 for "MATLAB Fundamentals Training Program" received from Learning Link Foundation (LLF), New Delhi.
4. **Co-PI** in the Research Consultancy Grant of Rs. 100000 for "Industrial Training Program cum MATLAB Training" received from SARACA Solutions Pvt. Ltd, Noida, 19/02/2024.
5. **PI** in the Research Consultancy Grant of Rs. 12000 for "Training on Mission Life Program on Clean Energy" received from The Energy and Resources Institute (TERI), New Delhi.
6. **PI** in the Research Consultancy Grant of Rs 65000 for Faculty Development Program on Artificial Intelligence and Machine Learning, in collaboration with EICT, IIT Guwahati at KIET Group of Institutions, Delhi-NCR, Ghaziabad from 3rd to 5th Feb. 2025.

International/National Conferences/Book Chapter

1. Salim, S diwania, Sumit Sharma, **N. S. Rathore**, "Efficient Design and Control of a Multi- Floor Elevator System Using PLC", International Conference on Sustainability and Technological Advancements in Engineering Domain, SUSTAINED - 2024, Dec 13-14, 2024 (Accepted).
2. **N. S. Rathore**, Arun Kumar, Rajat Srivastava, Surya Prakash Pandey, "A Review Paper on Solar Power Based Reverse Osmosis Desalination System", 3rd International Conference on Frontiers of Science & Technology, ICFST-21, August 13-14, 2021.
3. Arun Kumar, **N. S. Rathore**, A. K. Pandey, "A Scientific Study on Effect of Polarization in Calculation of Rain Attenuation using ITU-R Model", Book Title: Renewable Power for Sustainable Growth, Lecture Notes in Electrical Engineering (Springer Nature), 2021, Vol 723, pp. 367-376 (**Scopus**). https://doi.org/10.1007/978-981-33-4080-0_35.
4. **N. S. Rathore**, Neha Tiwari, Deepali Yadav, D P S Chauhan "Design Simplification of SOI MEMS based Trenchless Comb type Capacitive Accelerometer for FEM analysis" "Innovative Applications of Computational Intelligence on Power, Energy and Controls with their impact on Humanity" (VCIPECH-2020), KIET Ghaziabad (UP), 6-7 Nov. 2020.

5. Ayushi Sharma, Ajeet Kumar Rai, **N. S. Rathore**, “Photovoltaic Reverse Osmosis Desalination Plant: An Analytical Application of the Solar Energy”, "Innovative Applications of Computational Intelligence on Power, Energy and Controls with their impact on Humanity" (VCIPECH-2020), KIET Ghaziabad (UP), 6-7 Nov. 2020.
6. Ayush Srivastava, Abhishek Gupta, Samarth Shukla, Aditya Srivastava, **N. S. Rathore**, “Rust Detection in Large Metal Structure by CNN”, "Innovative Applications of Computational Intelligence on Power, Energy and Controls with their impact on Humanity" (VCIPECH-2020), KIET Ghaziabad (UP), 6-7 Nov. 2020.
7. **N. S. Rathore**, V. P. Singh, “Modified Controller Design Approach Based on Symbiotic Organisms Search Optimization for Reverse Osmosis Desalination System", International Conference on Desalination (InDACon-2018), NIT, Tiruchirappalli (TN), 20-21 April 2018.
8. **N. S. Rathore**, V. P. Singh, Bhavnes Kumar, “Controller Design for Doha Water Treatment Plant using Grey Wolf Optimization”, International Conference on Signals. Machines and Automation (SIGMA-2018), NSIT Delhi, 23-25 Feb, 2018.
9. **N. S. Rathore**, D.P.S. Chauhan and V. P. Singh, “Tuning of PID Controller for Position control of DC Servo Motor using Luus-Jaakola optimization”, proceeding of IEEE- International Conference on Computer Communication & Control (IC4), Indore (M.P), 10-12 September 2015.
10. **N. S. Rathore**, V. P. Singh and D.P.S Chauhan, “ISE based PID Controller Tuning for Position Control of DC Servo-Motor using LJ”, IEEE-International Conference on Signal Processing, Computing and Control (2015 ISPCC), Solan (H.P) 24-26 September 2015.
11. **N. S. Rathore**, D. P. S. Chauhan, V. P. Singh, “Luus-Jaakola Optimization Procedure for PID Controller Tuning in Reverse Osmosis System”, International Academic Conference on Electrical, Electronics and Robotics (IACEER), Chennai on 5th April 2015.
12. **N. S. Rathore**, N Kundariya, S Sadistap, A. Narain, “Mathematical modeling and simulation of concentration polarization layer in reverse osmosis process”, in IEEE Students Conference on Engineering and Systems (SCES), 2013, 12-14 April 2013..
13. T. Prakash, V. P. Singh, **N. S. Rathore**, and M. G. Babu, “Unconstrained Optimization with IDE Algorithm having Variable Dynamic Non-Linear Increased Crossover”, in IEEE Students Conference on Engineering and Systems (SCES), 2015, pp. 1-5, 6-9 November.

WORKSHOPS/ STTP/Conference/Guest Lectures (Organized)

1. **Coordinator** for Faculty Development Program on Artificial Intelligence and Machine Learning, in collaboration with EICT, IIT Guwahati at KIET Group of Institutions, Delhi-NCR, Ghaziabad from 3rd to 5th Feb. 2025.
2. **Coordinator and Speaker** for the program on Awareness of “Clean Energy” in collaboration with TERI, New Delhi at KIET Group of Institutions, Delhi-NCR, Ghaziabad from on 11 Dec. 2024.
3. **Session Chair** at IEEE International Conference on Sustainable Power and Energy (ICSPE) 2024 from 28-29th Nov. 2024.
4. **Coordinator** for Grand Finale of “Smart India Hackathon-2024 (Hardware edition)”, from 11-15 Dec. 2024.
5. **Organizing Co-Chair** at International Conference “BCIPECH-2022” organized by Department of Electrical Engineering, KIET Group of Institutions Ghaziabad from 4-5th Nov. 2022.
6. **Technical Chair** at International Conference “VCIPECH-2020” organized by Department of Electrical Engineering, KIET Group of Institutions Ghaziabad from 6-7th Nov. 2020.
7. **Organizing Committee Member** at International Virtual Workshop on "4.0 Overseas (An Initiative to Develop Chat ROOM on Industry 4.0)" organized by KIET Group of Institutions & FACENS university Brazil held during 20-24 September 2021.

8. **Faculty Coordinator** for “INNOTECH-2019, “INNOTECH-2022”, “INNOTECH-2024”, organized by KIET Group of Institutions, Ghaziabad on 19th May. 2022.
9. **Organizing Committee Member** for 2nd National STTP on “Logic building using C and MATLAB”, organized by Electrical Engineering Department, NIT Raipur (CG), during 26th- Feb to 01st-March-2016.
10. **Organizing Committee Member** at National conference on “Recent Advancement in Engineering & Technology”, organized by Govt. Engineering College Ajmer (Rajasthan) on 26th April 2008.
11. **Guest Lecturers on** “Sensors & Transducers” in DD SWAYAM PRABHA, MHRD National Channel, Govt. Of India on 6th March 2021.

AREAS OF INTEREST

Basic Electrical Engineering, Instrumentation and Control, Electrical Measurements & Instrumentations, Digital Electronics, Microprocessor and Microcontroller, IOT and Embedded Systems, Artificial Intelligence & Soft Computing, Emerging Technology for Engineering, Control & Automation, Sensor & Transducers.

COURSE CERTIFICATES

Python Programming, AI and Machine Learning, PLC & SCADA

TRAINING/ INTERNSHIP/ COURSE

- **Organization**-CSIR-Central Electronics Engineering Research Institute Pilani
Project Title- Simulation and evaluation of reverse osmosis system for water purification. (2 months at the end of M. Tech 2nd semester).
- **Organization**-Hindustan Zinc Limited, Udaipur (Rajasthan)
Project Title-To study automatic casting machine and its breakdown reduction (1 Months at the end of B. Tech 6th semester & learned about plant monitoring and machineries used at HCL)
- **Organization**- PROLIFIC Systems & Technologies Pvt. Ltd., (Ajmer)
Course Title- Ladder logic programming & SCADA (1 Month during B. Tech 7th semester & gained knowledge about Ladder logic programming of Allen Bradley & Siemens PLCs).

MEMBERSHIPS

- Life Fellow of IAENG,
- SIEEE,
- Senior Member of “Universal Association of Computer and Electronics Engineers”
- Member of IEEE SIGHT, Member of IEEE System Council, Member of IEEE Sensor Council, Member of IEEE Council on Electronic Design Automation

SERVICES (Research/ Administration)

- **Examiner for Ph.D. thesis** entitled "Cascaded Extended State Observer Based Full Order Sliding Mode Control Strategies for Underactuated Flexible Joint Robots" for Swinburne University, Melbourne, Australia in 2019.
- Active Examiner and paper setting for AKTU, RGVP etc. Universities.
- NBA Coordinator at KIET Group of Institutions, Ghaziabad.
- **Reviewer** for IEEE India International Conference IICPE-2018, ICPC2T-2020, UPCON 2020, UPCON 2022, ASPCT-2020, ICSPE-2024, etc.
- **Active Reviewer** for “IEEE Transactions on Control Systems Technology” (SCI), “ISA Transactions-Elsevier” (SCI), “International Journal of Industrial Engineering: Theory,

Applications and Practice” (SCI), “Mathematical Problems in Engineering-Hindawi” (SCI), “International Journal of Management Science and Engineering Management-Taylor & Francis” (ESCI), “Advances in Electrical and Electronic Engineering-VSB” (ESCI)”, etc.

- **E-lectures** at (Swayam Prabha Channel/AKTU Digital Platform/YOUTUBE):

1. <https://www.youtube.com/watch?v=n1XcDq-Ynv0&t=167s>
2. <https://www.youtube.com/watch?v=RQsYJT4Zh5w&t=1238s>

ACHIEVEMENTS/AWARDS

- Received (**Young Drona Charya Award** (Best Faculty Award-2022) with at KIET Ghaziabad, India
- Received International Scientist Awards 2020 by VDGGOOD Technology Factory.
- Received **best paper award** at international conference SIGMA 2018 organized by NSIT Delhi (23-25 Feb 2018).
<http://www.nsit.ac.in/static/images/SIGMA2018/Best%20Paper%20Award.pdf>
- Received MHRD PhD Fellowship for PhD from 2014-2018.
- Received CSIR-GATE Fellowship award for JRF from 2011-2013.
- Qualified in Gate-2010 (IN) with 95.70 Percentile.
- N.C.C. “B” and “C” Certificate holder with “B” grade.
- National service scheme (NSS) volunteer for 3 years (2007-2009).

NAME AND ADDRESS OF REFERENCES

- | | |
|---|--|
| 1. Dr. V. P. Singh
Associate Professor
Department of Electrical
Engineering, MNIT Jaipur-302017
E-mail: vinaymnnit@gmail.com
Mob: +91-8878208323 | 2. Dr. S. Sadistap
Sr. Principal Scientist & Head
Electronics Group
CSIR-CEERI Pilani- 333031
E-mail: ssadistap@yahoo.co.in
Mob: +91-9414742992 |
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PERSONAL DETAILS:

Father's Name	:	Mr. Shankar Singh Rathore
Date of Birth	:	07 th May 1988
Permanent Address	:	Plot No-95, New Chandra Nagar, Beawar Road Ajmer, 305003 (Rajasthan)
Nationality	:	Indian

DECLARATION

I solemnly declare that the information furnished by me is true and correct to best of my knowledge and belief.

Dr. Natwar Singh Rathore