Mr. Prabhat Kumar Vidyarthi

Assistant Professor (Adhoc); Department of Electronics & Communication Engineering, Indian Institute of Information Technology (IIIT) Bhagalpur, Sabour, Bhagalpur – 813210 (Bihar), India.

- Google Scholar Link: https://scholar.google.com/citations?hl=en&user=2RMHJHQAAAAJ
- LinkedIn Profile Link: https://www.linkedin.com/in/prabhat-kumar-vidyarthi-b163412b3/
- Research Gate: https://www.researchgate.net/profile/Prabhat-Vidyarthi/research
- ORCID: **0009-0008-1928-6981**
- Mobile No: **+91 7903285456**
- Email ID: pkvidyarthi.ece@iiitbh.ac.in; prabhat.vidyarthi100@gmail.com.

CAREER OBJECTIVE

"To contribute to academic excellence through innovative teaching, impactful research, and active engagement in departmental and institutional development, while fostering a collaborative learning environment that inspires students to achieve their full potential."

EDUCATIONAL QUALIFICATION

- **Ph.D. – Control and Energy Systems,** from National Institute of Technology Patna, India (Session: 2022-2025, Percentage/CGPA: 76.1%,)
- **M.Tech. – Control Systems,** from National Institute of Technology Patna, Bihar (Session: 2018-2020, Percentage/CGPA-86.6%)
- **B.Tech.** – **Electrical and Electronics Engineering**, from Birla Institute of Technology Mesra Ranchi, India (Session: 2013-2017, CGPA-70.7%)
  Higher Secondary – Science (PCM Group), from Bihar School Examination Board Patna, Bihar (Session: 2010-2012, Percentage- 73.8%)
- **Secondary – General** (All Subject), from Bihar School Examination Board Patna, Bihar (Session: 2009-2010, Percentage- 81.7%)

ATTRIBUTES

An enthusiastic, adaptive, and quick learner with a strong passion for exploring and developing innovative ideas in the field of Electrical and Electronics Engineering. Skilled in collaborating with researchers across disciplines to acquire new knowledge, foster innovation, and drive impactful solutions.

RESEARCH INTERESTS

- Designing intelligence-based controllers.
- Optimization techniques.
- Load Forecasting.
- Penetration of Renewable and Virtual Inertia.
- Microgrids stability.
- Power System Cyber Security.

Expertise

Software Skills

- Power system optimization, Grid stability, Artificial neural network, Deep learning, Fuzzy control design.
- Microsoft Office: Word, Excel, Power Point, math type, Latex, and Visio.
- Advance Blackboard, Adobe Photoshop.
- MATLAB/SIMULINK, C.

Hardware Skills

- OPAL-RT OP4510 Platform

AWARDS & CERTIFICATES

- **Best Paper awards** received in '2024 Third International Conference on Power, Control and Computing Technologies (ICPC2T), Raipur, India organized by NIT Raipur.
- **Best Paper awards** received in '9th International conference on Micro-Electronics, Electromagnetics and Telecommunications (ICMEET-2024), Kolkata, India organized by NIT Mizoram.
- **Best Poster Presentation** awards received in 2024 IEEE 4th International Conference on Sustainable Energy and Future Electric Transportation (IEEE SeFeT 2024).
- **RUNNER-UP** in Power system cybersecurity Hackathon organized by IIT Roorkee-2024.
- **Reviewer of different reputed Journal and conference**: Chaos, Solitons & Fractals (Elsevier), Optimal Control application & Methods (Wiley), International Journal of System Assurance Engineering and Management, Scientific Reports, ICEFEET2023, IEEE SeFeT-2024, IEEE PEDES-2024, INDISCON2024, GIEST2024, & ICEFEET2024, SeFeT-2025, NE-IECCE-2025.
- Received **Ministry of Human Resource Development (MHRD)** Scholarship for pursuing M.Tech and Ph.D.
- **Qualified Graduate Aptitude Test in Engineering (GATE)**: GATE-2017, GATE-2018, and GATE-2020.

PUBLICATIONS

INTERNATIONAL JOURNAL PUBLISHED

1) **P. K. Vidyarthi**, A. Kumar, and S. Raj, 'Chaos quasi-opposition sea-horse based modified new tilt controller designed for multi-area deregulated AGC using deep learning against cyber-attacks', Chaos Solitons Fractals, vol. 188, 2024, doi: 10.1016/j.chaos.2024.115542. **(SCI, Q1, I.F-5.6).**

2) **Vidyarthi PK**, Kumar A. A modified tilt controller for AGC in hybrid power system integrating forecasting of renewable energy sources. Optim Control Appl Methods. 2023; 45:185-207. doi:10.1002/oca.3052. **(SCI, Q2, I.F-2.0).**

3) **Vidyarthi PK**, Kumar A. A cascaded tilt MPC controller for AGC in multi-area interconnected HPS with penetration of RESs and virtual inertia. Electrical Engineering. 2024;1-17. doi.org/10.1007/s00202-024-02398-5. **(SCI, Q2, I.F-1.7).**

4) **Vidyarthi PK**, Kumar A. Enhancing frequency regulation in multi-area interconnected MPS with virtual inertia using MPC+PIDN controller. Optim Control Appl Meth. 2024;1-24. doi: 10.1002/oca.3121. **(SCI, Q2, I.F-2.0).**

5) **Vidyarthi PK**, Kumar A, Kumari A and Kumar A. Renewable sources with virtual inertia penetration in multi area interconnected AGC using a modified MPC controller. Eng. Res. Express 6 (2024) 025320.1-16. doi: 10.1088/2631-8695/ad408c. **(ESCI, Q3, I.F-1.5).**

INTERNATIONAL JOURNAL UNDER REVIEW

6) **Prabhat Kumar Vidyarthi**, Ashiwani Kumar, and Ravi Shankar, Enhancing a Resilient Frequency Regulation Demand Response Based Hybrid Power System Against Cyber Threats. (Under Revision in IEEE Transactions on Industry Applications) **(IEEE, Q1 I.F-4.2).**

7) **Prabhat Kumar Vidyarthi**, Ashiwani Kumar, and Ravi Shankar, Enhanced Resilient Frequency Regulation for Hybrid Power System with Interactive Demand Response through Kalman-based Cybersecurity Strategy. (Under Revision in Computers and Electrical Engineering) **(SCI, Q1 I.F-4.0).**

8) **Prabhat Kumar Vidyarthi**, Ashiwani Kumar, and Ravi Shankar, AGC performance improvement of multi-area deregulated HPS penetrated forecasting of RESs utilizing a novel CFPD μ F-TI controller. (Under Revision in Soft Computing) **(SCI, Q2 I.F-3.2).**

INTERNATIONAL CONFERENCE

9) **P. K. Vidyarthi**, A. Kumar and R. Shankar, "Improvement of AGC for Multi-Area Deregulated Power Systems with Integrated RESs using a modified TID.," 2023 IEEE 3rd International Conference on Smart Technologies for Power, Energy and Control **(STPEC)**, Bhubaneswar, India, 2023, pp. 1-6, doi: 10.1109/STPEC59253.2023.10431292.
10) **P. K. Vidyarthi**, A. Kumar and R. Shankar, "Virtual Inertia Support in AGC of Deregulated Interconnected Power System with Penetration of Electric Vehicles," 2024 Third International Conference on Power, Control and Computing Technologies **(ICPC2T),** Raipur, India, 2024, pp. 492-497, doi: 10.1109/ICPC2T60072.2024.10474892.
11) **P. K. Vidyarthi**, A. Kumar and R. Shankar, "Enhancement of AGC for Deregulated Interconnected Power System with Integration of EV Using a Type-2 Fuzzy Controller," 2024 IEEE 4th International Conference on Sustainable Energy and Future Electric Transportation **(SEFET)**, Hyderabad, India, 2024, pp. 1-6, doi: 10.1109/SEFET61574.2024.10717486.
12) **P. K. Vidyarthi**, A. Kumar and R. Shankar, "Different Types of Cyber-Attacks on Microgrid and its Detection and Mitigation," 2024 IEEE 4th International Conference on Sustainable Energy and Future Electric Transportation **(SEFET)**, Hyderabad, India, 2024, pp. 1-5, doi: 10.1109/SEFET61574.2024.10718222.
13) **P. K. Vidyarthi**, A. Kumar and R. Shankar, "Enhancing the Frequency Deviation in MPS Utilizing Demand Response Techniques for Irregularity Between Sources and Load," 2024 IEEE International Conference on Power Electronics, Drives and Energy Systems (PEDES), Mangalore, India, 2024, pp. 1-5, doi: 10.1109/PEDES61459.2024.10961601.
14) **P. K. Vidyarthi**, K. Mukherjee and B. K. Roy, "Fish-Like Robots and Applications of Sensor -A Review," 2022 4th International Conference on Energy, Power and Environment (**ICEPE**), Shillong, India, 2022, pp. 1-6, doi: 10.1109/ICEPE55035.2022.9798191.
15) **P. K. Vidyarthi**, A. Kumar and P. Aryan, "Application of Quasi Opposition Based Whale Algorithm for LFC of Multi-area Deregulated Power System Using Fractional Controller," 2020 International Conference on Emerging Frontiers in Electrical and Electronic Technologies **(ICEFEET**), Patna, India, 2020, pp. 1-6, doi: 10.1109/ICEFEET49149.2020.9186971.
16) **P. K. Vidyarthi**, A. Kumar and R. Shankar, "Enhancing the frequency regulation in hybrid deregulated AGC incorporating modified 2DOF cascaded controller". (Accepted in NE-IECCE 2025).
17) **P. K. Vidyarthi**, A. Kumar and R. Shankar, "Demand Response based optimally modified fractional cascade controller in hybrid AGC incorporating EV". (Accepted in NE-IECCE 2025).
18) **P. K. Vidyarthi**, A. Kumar, S Kumar and R. Shankar, "A resilient frequency enhancement of deregulated hybrid power system penetration of EV using modified tilt cascade controller". (Accepted in SEFET 2025).
19) **P. K. Vidyarthi**, A. Kumar, P.P.Singh, R.Shankar and S.N. Singh "Enhancing the Resilient Frequency Management in Hybrid Power System against Cyber-attacks and its Mitigation.". (Accepted in SEFET 2025).
20) **P. K. Vidyarthi**, A. Kumar, and S. Kumar"A Resilient Frequency for Enhancing Hybrid AGC incorporating modified IEEE-39 with RESs". (Accepted in SEFET 2025).
21) P.P.Singh, R.Shankar, S.N. Singh, and **P. K. Vidyarthi** "A Novel Controller for Resilient Frequency Regulation in Multi-Area Deregulated Power Structure Considering Nonlinearities and RESs.". (Accepted in SEFET 2025).

BOOK CHAPTER

1. **P. K. Vidyarthi** and A. Kumar, "Modelling of multi-area deregulated LFC microgrid based on renewable energy sources". Accepted in E2A – 2024 (Springer).
2. **P. K. Vidyarthi** and A. Kumar, "Designing of two-area deregulated fuzzy based microgrid penetration of renewable energy sources". Accepted in ICMEET – 2024 (Springer).
3. **P. K. Vidyarthi**, P.P. Singh, A. Kumar and R Shankar "Analytical Approaches to Microgrid Frequency Control.". Accepted in ELSEVIER Book Chapter.

REFERENCES

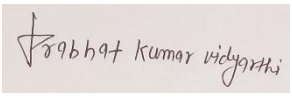
Dr. Ashiwani Kumar
Assistant Professor, EE Department
National Institute of Technology Patna, Bihar, India-800005
Mobile: +91 9162075024
Email ID: ashwani@nitp.ac.in

Dr. Ravi Shankar
Assistant Professor, EE Department
National Institute of Technology Patna, Bihar, India-800005
Mobile: +91 7853969647
Email ID: ravi@nitp.ac.in

Dr. S. K. Parida
Associate professor, EE Department
Indian Institute of Technology Patna, Bihar, India-801106
Mobile: +91 8328852298
Email ID: skparida@iitp.ac.in

DECLARATION

I hereby declare that the above-mentioned details are true and correct to the best of my knowledge.



Place: Patna
Date: 11/08/2025

(Prabhat Kumar Vidyarthi)