



Dr. Biresh Kumar Dakua

Name : Dr. Biresh Kumar Dakua
Designation : Senior Assistant Professor
Department : Department of Electrical Engineering
(Joined The Institute In 28TH August 2019)
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ACADEMIC QUALIFICATIONS:

- ✓ Ph.D., Department of Electrical Engineering, Veer Surendra Sai University of Technology, Odisha, India.
- ✓ M-Tech, Power Electronics Control & Drives, Department of Electrical Engineering, Veer Surendra Sai University of Technology, Odisha, India.
- ✓ B-Tech, Electrical & Electronics Engineering, Biju Patnaik University of Technology, Odisha, India.

RESEARCH INTERESTS:

- ✓ Linear & Nonlinear Control Systems
- ✓ Fractional Order Systems & Control
- ✓ System Identification
- ✓ Optimization Techniques

TEACHING/INDUSTRY/RESEARCH EXPERIENCE:

- ✓ 13 Yrs. of Teaching Experience.

PUBLICATIONS

JOURNAL & CONFERENCES:

- [1]. **B. K. Dakua** & B. B. Pati, "A deterministic design approach of tilt integral derivative controller for integer and fractional-order system with time delay," Engineering Research Express, vol. 6, No-3, 035331, pp. 1–19, 2024.
- [2]. **B. K. Dakua** & B. B. Pati, "PI λ D μ Controllers for Suppression of Limit Cycle in a Plant with Time Delay and Backlash Nonlinearity," International Journal of Automotive Science and Technology, vol. 8, No-4, pp. 506–526, 2024.
- [3]. **B. K. Dakua** & B. B. Pati, "A frequency domain-based loop shaping procedure for the parameter estimation of the fractional-order tilt integral derivative controller," Mathematical Modelling and Control, vol. 4, No-4, pp. 374–389, 2024.

- [4]. **B. K. Dakua**, B. Sahoo, & B. B. Pati, "Design of $PI\lambda D\mu$ Controller for a Fractional-Order Automatic Voltage Regulator System," IFAC-PapersOnLine, vol. 55, No-1, pp. 649–654, 2024.
- [5]. K. C. Patra & **B. K. Dakua**, "Investigation of Limit Cycles and Signal Stabilization of Two-Dimensional Systems with Memory Type Nonlinear Elements", Archives of Control Sciences, vol. 28(LXIV), No-2, pp. 285–330, 2018.
- [6]. S. Kerketta, T. K. Pati, J. Dash, S. Mishra and **B. K. Dakua**, "Performance Evaluation of Integer and Fractional Order Controllers for an Automobile Cruise Control System," 2025 5th IEEE International Conference on Applied Electromagnetics, Signal Processing, & Communication (AESPC), Bhubaneswar, India, 2025, pp. 1-6, DOI: 10.1109/AESPC67542.2025.11326886.
- [7]. **B. K. Dakua** et.al.: A Comparison Between $PIDD2$ and $PIDD\alpha$ Controller for the Performance Enhancement of AVR System, International Conference on Sustainable Power and Energy Research (ICSPER-2024), Springer, NIT Warangal.
- [8]. **B. K. Dakua** et.al.: A Comparison between the FOTID and FOPID Controller for the Close-Loop Speed Control of a DC Motor System, 2023 International Conference on Artificial Intelligence and Applications (ICAIA) Alliance Technology Conference (ATCON-1), IEEE, Bangalore, 21st April 2023, pp. 1-6.
- [9]. **B. K. Dakua** et.al.: Design of $PI\lambda-PD\mu$ Controller for Industrial Unstable and Integrating Processes with Time Delays, 2023 International Symposium on Sustainable Energy and Technological Advancements, Springer, NIT Silcher, 24th February 2023, pp. 261-275.
- [10]. **B. K. Dakua** and B. B. Pati: Prediction and Suppression of Limit Cycle Oscillations for a Plant with Time Delay and Backlash Nonlinearity, 2020 IEEE International Symposium on Sustainable Energy, Signal Processing and Cyber Security (iSSSC), IEEE, GIET University, Gunupur, 16th-17th December 2020, pp. 1-5, February, 2021 DOI: 10.1109/iSSSC50941.2020.9358900.
- [11]. **B. K. Dakua** and B. B. Pati: Computation of Limit Cycle in a Nonlinear Fractional-Order Plant with Time Delay, 2021 1st Odisha International Conference on Electrical Power Engineering, Communication and Computing Technology (ODICON), IEEE, SOA University, Bhubaneswar, 08-09 January 2021, pp. 1-6, May, 2021 DOI: 10.1109/ODICON50556.2021.9428950.
- [12]. **B. K. Dakua** and B. B. Pati: $PI\lambda-PD\mu$ Controller for Suppression of Limit Cycle in Fractional-Order Time Delay Systems with Nonlinearities, 2021 1st Odisha International Conference on Electrical Power Engineering, Communication and Computing Technology (ODICON), IEEE, SOA University, Bhubaneswar, 08-09 January 2021, pp. 1-6, May, 2021 DOI: 10.1109/ODICON50556.2021.9428971.

WORKSHOPS/FDPS/SEMINARS ATTENDED:

- [1]. One week workshop on Emerging Technologies of Industry 4.0: AI, Robotics and IOT organized by BIT, Mesra from 23rd-27th February, 2026.
- [2]. One-week STTP on Power Sector Transformation for a Sustainable and Reliable Future: Industry Perspectives and Practical Insights (PSRIP 2026) organized by NIT, Silchar from 7/03/2026 -11/03/2026.
- [3]. One week FDP on Driving the Future: Sustainable Mobility through Electric Vehicle Technologies and MATLAB simulation organized by Shri Viswakarma Skill University from 8/12/2025 to 13/12/2025.
- [4]. One week FDP on AI/ML Based Controller Design and Deployment on real time platforms (AMCDDRP-2025) organized by NIT, Rourkela from 5/11/2025 to 9/11/2025.
- [5]. One week FDP on AIML Based Controller Design and Deployment on Real World Platform (AMCDDRP-2025) Organized by Department of EE, NIT Rourkela from 05/11/2025 to 09/11/2025.
- [6]. Two weeks Faculty Development Program on Emerging Trends, Opportunities & Challenges for a Smart and Sustainable Energy Grid Organized jointly by Department of EE, IIIT Bhubaneswar and E&ICT Academy NIT Warangal from 30/06/2025 to 11/07/2025.
- [7]. AICTE (ATAL) Academy sponsored 1-Week online FDP on "Mitigating Climate Changes Through Sustainable Electrical Engineering Solutions" Organized by P MEC Odisha, 20-25 January 2025.
- [8]. AICTE (ATAL) Academy sponsored 1-Week online FDP on "Emerging Trends for Advanced Protection, Control, and Energy Management in Microgrid" Organized by VSSUT Burla, 23-28 September 2024.
- [9]. DST sponsored 1-Week Workshop on "High Performance Computing for Engineering Applications" Organized by Dept of CSE, NIT Warangal, 28 February-03 March 2024.
- [10]. NPTEL Online Certification Course on "Process Control: Design, Analysis, & Assessment" in April 2022.
- [11]. AICTE-ISTE approved 1-Week online orientation programme on "Development and Application of The Renewable Energy Source in Power System." Organized by CSIT, Durg, CG, 02-08 March 2022.
- [12]. NITTR Kolkata organized 1-Week Short Term Training Program through ICT Mode on "LABVIEW and MATLAB Applications in Engineering" from 03-07 January, 2022.
- [13]. AICTE-ISTE approved 1-Week online orientation programme on "Electric Vehicle and Smart Grid: A Path Towards Sustainable Energy." Organized by KIIT University, Bhubaneswar, 17-23 December 2021.
- [14]. NITTR Kolkata organized 1-Week Short Term Training Program through ICT Mode on "Optimization with MATLAB Applications" from 13-17 December, 2021

- [15]. AICTE (ATAL) Academy sponsored 1-Week online FDP on "Type-1 and Type-2 Fuzzy Logics and its applications" Organized by NPTI Southern Region, 09-13 December 2021.
- [16]. NITTR Kolkata organized 1-Week Short Term Training Program through ICT Mode on "Solar Photovoltaic System" from 22-26 November 2021.
- [17]. AICTE (ATAL) Academy sponsored 1-Week online FDP on "Recent Trends in Control System Engineering" Organized by IIIT, Kota, 06-10 December 2021.
- [18]. AICTE (ATAL) Academy sponsored 1-Week online FDP on "Data Sciences" Organized by NPTI Southern Region, 09-13 August 2021.
- [19]. AICTE sponsored 1-week online FDP on "Real Time Simulation: Roadmap for RE Grid Integration in Microgrid and Smart grid", organized by NITTR Chandigarh, 28 June-02 July 2021.
- [20]. 5-Days STTP on "Application of Advance Control Techniques in Power Electronics and Power Technology" Organized by Dept of EEE, SIT Bhubaneswar, 05-09 April 2021.
- [21]. TEQIP-III sponsored 5-Days online FDP on " Power Quality Issues and Energy Management in a Grid Integrated with Renewable Sources" Organized by Dept. Of EE, EATM Bhubaneswar, 24-28 February 2021.

WORKSHOPS/FDPS/SEMINARS ORGANISED:

- [1].1-Week ISTE sponsored National Workshop on "Nature Inspired Optimization Techniques & Microgrid Applications" NIOTMA-2022 from 21-26 March 2022.
- [2].2-Day online workshop on "Advanced MATLAB Tools and SIMULINK in Power System Applications" AMTSPSA-2021 from 26-27 July 2021, SIT Sambalpur.
- [3].A 4-days e-FDP on "Role of Artificial Intelligence in Future Microgrid Control" 17-20 June 2020, SIT Sambalpur.

AWARD/ACHIVEMENT:

- [1].IEEE paper presentation and best paper award (IEEE-2021) - 1st Odisha International Conference on 'Electrical Power Engineering, Communication and Computing Technology (ODICON) 2021'- 08.01.2021 to 09.01.2021.

PROFESSIONAL MEMBERSHIP:

- [1].Life Member ISTE. Membership ID: LM 134029.

LINK:

- [1].Google Scholar:https://scholar.google.com/citations?user=MKr_UJUAAAAJ&hl=en&authuser=1

[2].ORCID:<https://orcid.org/0000-0003-2921-5948>

[3].ResearchGate:https://www.researchgate.net/profile/Biresh-Dakua?ev=hdr_xprf