



Mr. Apurba Pal

Present Position: Assistant Professor

Department of Civil Engineering, School of Engineering and Technology

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Education:

- PhD (Pursuing) (Civil Engineering), National Institute of Technology, Durgapur
- M.Tech. (Structural Engineering), National Institute of Technology, Durgapur
- B.Tech. (Civil Engineering), Bengal College of Engineering and Technology, Durgapur

Research Key Areas:

- Structural Engineering
- Structural Health Monitoring
- Earthquake Engineering
- Masonry Structures
- Concrete Technology
- AI and Machine Learning

Research Highlights:

- Received Ministry of Human Resource Development (MHRD), Government of India for PhD Assistantship – Govt. of India

Experience:

- Assistant Professor, Department of Civil Engineering, School of Engineering and Technology, Adamas University, October 2024 to Present.
- PhD Institute Research Scholar (Full Time), National Institute of Technology, Durgapur, October 2021 to October 2024.
- Assistant Professor, Department of Civil Engineering, Asansol Engineering College, July 2017 to October 2021
- Lecturer, The New Horizons Institute of Technology, Durgapur, February 2014 to July 2015.
- Junior Civil Engineer, Misra Associates Development Consultant Pvt. Ltd., Asansol, February 2013 to January 2014.

Research Publication (s):

- Number of research papers published in International journals: 12
- Number of research papers published in International Conference Proceedings: 07
- Number of Book-Chapters: 1

For Details, Visit: <https://vidwan.inflibnet.ac.in/profile/576989>

Selected Publication (s):

JOURNAL

- [1] Pal, A., Datta, A.K. (2024). “Development of Smart Real-time Fault Detection Approach in Railway Track Deploying a Single Acoustic Emission Sensor Data”, Journal of Vibration Engineering & Technologies, Springer. DOI: <https://doi.org/10.1007/s42417-024-01374-4>, (SCIE).
- [2] Pal, A., Kundu, T., & Datta, A. K. (2024). “Acoustic Emission-Based Assessment of Weld Effects on the Health Monitoring of the Rail Section: An Experimental Study”, Engineering Research Express, IOP Publication. DOI: [10.1088/2631-8695/ad26e1](https://doi.org/10.1088/2631-8695/ad26e1), (ESCI)
- [3] Pal, A., Kundu, T. & Datta, A.K. (2023), “Assessing the Influence of Welded Joint on Health Monitoring of Rail Sections: An Experimental Study Employing SVM and ANN Models”, Journal of Nondestructive Evaluation, Springer, 42, 102. <https://doi.org/10.1007/s10921-023-01014-z>, (SCIE).
- [4] Pal, A., Kundu, T., & Datta, A. K. (2023). “Damage Localization in Rail Section Using Single AE Sensor Data: An Experimental Investigation with Deep Learning Approach”, Nondestructive Testing and Evaluation, Taylor & Francis. <https://doi.org/10.1080/10589759.2023.2243004>, (SCIE).
- [5] Kundu, T., Datta, A. K., Roy, P., Topdar, P., Banerjee, A., Mukerjee, A., ... & Pal, A. (2023). “An experimental study on health monitoring of rail section using an indigenously developed AE system”. International Journal of Structural Engineering, Inder Science, 13(4), 463-481. DOI: [10.1504/IJSTRUCTE.2023.134346](https://doi.org/10.1504/IJSTRUCTE.2023.134346), (ESCI).
- [6] Pal, A., Kundu, T. & Datta, A.K. (2023), “Sensor-based smart diagnosis of rail defects using an ann model”. Asian Journal of Civil Engineering, Springer, 3001–3008. <https://doi.org/10.1007/s42107-023-00690-6>, (SCOPUS).
- [7] Kundu, T., Pal, A., Roy, P., Datta, A. K., & Topdar, P. (2024). “Development of a novel real-time AE source localisation technique using ANN for health monitoring of rail section: an experimental study”. Structural Health Monitoring, SAGE, 23(1), 479-494. <https://doi.org/10.1177/14759217231171026>, (SCIE).

- [8] Ekambaram, T., Datta, A.K. & Pal, A (2024). “Seismic structural health monitoring of RC framed building using artificial neural network model: a study”. Asian Journal of Civil Engineering, Springer. DOI: <https://doi.org/10.1007/s42107-024-01043-7>, (SCOPUS).
- [9] Behera, B., Datta, A.K. & Pal, A (2024). “Earthquake resistant design of framed reinforced concrete building using artificial intelligence model”. Asian Journal of Civil Engineering, Springer. <https://doi.org/10.1007/s42107-024-01051-7>, (SCOPUS).
- [10] Sanjay, S. S., Pal, A., Chakraborty, S. K., & Khan, H. A. (2022). “Reduction of shrinkage of self-compacting concrete using polycarboxylate ether as shrinkage reducing admixture.” Materials Today: Proceedings, Elsevier, 60, 448-451. DOI: [10.1016/j.matpr.2022.01.316](https://doi.org/10.1016/j.matpr.2022.01.316), (SCOPUS).
- [11] Nanda, R. P., Khan, H. A., & Pal, A. (2017). “Seismic retrofitting of unreinforced brick masonry panels with glass fibre reinforced polymers”. International Journal of Geotechnical Earthquake Engineering (IJGEE), 8(1), 28-37. DOI: [10.4018/ijgee.2017010102](https://doi.org/10.4018/ijgee.2017010102), (ESCI), (M. Tech).
- [12] Das, S., Datta, A.K., Topdar, P & Pal, A. (2024). “Innovative approaches to concrete health monitoring: wavelet transform and artificial intelligence models”. Asian Journal of Civil Engineering, Springer. <https://doi.org/10.1007/s42107-024-01178-7>, (SCOPUS).

CONFERENCE

- [1] “Application of AI in Health Monitoring of Railway Track (2024)”, Authors: Apurba Pal, Alope Kumar Datta. All India Seminar on ‘Machine Learning and Soft Computing Applications in Engineering and Science (MLSC-ES) Organized by The Institution of Engineers (India) Durgapur Local Centre Under the Aegis of Computer Engineering Division Board, IEI.
- [2] “Selection of best-performing AE sensor for damage localization in rail section using Artificial Intelligence Model (2023)”, Authors: Sagnik Datta, Tamal Kundu, Apurba Pal, and Alope Kumar Datta. International Conference on Creative and Innovative Solutions in Civil Engineering (CISCE) at MNIT, Jaipur, India.
- [3] “A Study on the Effect of Weld in Health Monitoring of Indian Rail Section using AE Technique (2022)”, Authors: Apurba Pal, Tamal Kundu, and Alope Kumar Datta. International Conference on Science, Technology & Sustainability (ICSTS 2022).
- [4] “On the application of UPV in health monitoring of Indian Rail section using AE Technique (2022)”, Authors: Tamal Kundu, Apurba Pal, Parikshit Roy, Alope Kumar Datta, and Pijush Topdar. Published in NDT.net: NDT.net Issue: 2022-11. Link: <http://www.ndt.net/?id=27467>. International conference on Imaging NDE ICINDE 2022, Mahabalipuram, Chennai, India.

[5] “Applicability of Energy Efficient ANN Model for Smart Diagnosis of Rail’s Defect: A Study in Indian Perspective (2022)”, Authors: Apurba Pal, Tamal Kundu, and Alope Kumar Datta. 3rd Energy System Modeling and Optimization Conference, NIT Durgapur, India.

[6] “On Development of Smart Energy Efficient Damage Detection ANN Model for Indian Rail Section (2022)”, Authors: Tamal Kundu, Apurba Pal, Alope Kumar Datta and Pijush Topdar. 3rd Energy System Modeling and Optimization Conference, NIT Durgapur, India.

[7] “Application of UPV-Instrument in Health Monitoring of Indian Rail Section Using AE Technique 2022)”, Authors: Tamal Kundu, Apurba Pal, Alope Kumar Datta and Pijush Topdar. 12th Structural Engineering Convention 2022At: MNIT Jaipur, Volume: Volume 1 Issue 1, [DOI: 10.38208/acp.v1.673](https://doi.org/10.38208/acp.v1.673).

BOOK CHAPTER

[1] “Enhancing AI Model for Fault Detection in Rail Through the Evaluation of AE Parameters with Proper Weighting Approach: A Comprehensive Study (2023)”, Authors: Rajdeep Majumdar, Apurba Pal, Tamal Kundu, Alope Kumar Datta. International Conference on Advances in Computer Engineering and Communication Systems (ICACECS-2023), September 22-23, 2023, Department of Computer Science & Engineering, VNR VJIET, co-located at The University of The West Indies (UWI), at Mona, Jamaica. [DOI-10.2991/978-94-6463-314-6_10](https://doi.org/10.2991/978-94-6463-314-6_10). Proceedings of the Fourth International Conference on Advances in Computer Engineering and Communication Systems. (Scopus Indexed).

Research Advisor / Supervisor:

- Under Graduate Thesis Advisor / Supervisor: 20 (Awarded)

Award/ Academic Recognition/ Major Professional Activity:

- Best Paper Award (International Conference on Advances in Computer Engineering and Communication Systems (ICACECS-2023), September 22-23, 2023, Department of Computer Science & Engineering, VNR, VJIET, co-located at The University of The West Indies (UWI), At Mona, Jamaica.
- Reviewer of the journal:
 1. Scientific Reports - Nature (Q1, SCIE Indexed, Nature Publication)
 2. Measurement Science and Technology (Q2, SCI Indexed, IOP Science Publication)
 3. Proceedings of the Institution of Civil Engineers - Construction Materials, (Q3, SCIE Indexed, ICE Publication.)