

Jitendra Adhikari

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R⁶ <https://www.researchgate.net/profile/Jitendra-Adhikari-2>

EDUCATION

- Doctor of Philosophy, Ph. D.** 08/2018 – 10/2023
Indian Institute of Technology Mandi, India
Specialisation: Machine Learning, MEMS, CGPA: 9.0
- Master of Technology, M.Tech** 07/2013 – 06/2015
Indian Institute of Technology Roorkee, India
Specialisation: CAD, CAM & Robotics, CGPA: 7.788
- Bachelor of Technology, B.Tech** 07/2009 – 06/2013
GBPUAST, Pantnagar, India
Branch: Production Engineering, Marks: 77.16 %

PROFESSIONAL EXPERIENCE

- Assistant Professor** 10/2024 – present
Maulana Azad National Institute of Technology Bhopal, India
- Post Doctoral Fellow** 02/2024 – 10/2024
Indian Institute of Technology Bombay, India
- Assistant Professor** 07/2015 – 12/2017
Graphic Era Hill University, Dehradun, India

RESEARCH AREA

Smart materials and Structures, Machine learning, Micro Electromechanical Systems, Energy Harvesting, Composite Materials

PUBLICATIONS

1. Singh, K., **Adhikari, J.** and Roscow, J., 2024. Prediction of the electromechanical properties of a piezoelectric composite material through the artificial neural network. *Materials Today Communications*, p.108288. (<https://doi.org/10.1016/j.mtcomm.2024.108288>) [IF-3.7, Q2]
2. **Adhikari, J.**, Singh, K., Sagar, A.K., Sharma, V.K., Kumar, R. and Jain, S.C., 2023. Prediction of Piezoelectric Tile Performance in Flat and Mountainous Terrains Through Deep Neural Network. *Advanced Theory and Simulations*, 6(12), p.2300539 (<https://doi.org/10.1002/adts.202300539>) [IF-3.59, Q1]
3. **Adhikari, J.**, Kumar, A., Kumar, R. and Jain, S.C., 2023. Performance enhancement of functionally graded piezoelectric tile by tailoring poling orientation. *Mechanics Based Design of Structures and Machines*, 51(7), pp.3759-3778 (<https://doi.org/10.1080/15397734.2021.1939047>) [IF 2.59, Q1]
4. Sagar, A.K., **Adhikari, J.**, Chauhan, R. and Kumar, R., 2023. Geometric modifications to bluff body for enhanced performance in a wind-induced vibration energy harvester. *Mechanics of Advanced Materials and Structures*, pp.1-11. (<https://doi.org/10.1080/15376494.2023.2222397>) [IF 3.6, Q2]
5. **Adhikari, J.**, Kumar, R. and Jain, S.C., 2023. Using modified Halpin Tsai based approach for electromechanical analysis of functionally graded graphene reinforced piezoelectric tile. *International Journal of Mechanics and Materials in Design*, 19(2), pp.299-318. (<https://doi.org/10.1007/s10999-022-09632-7>) [IF-2.7, Q1]
6. **Adhikari, J.**, Kumar, R. and Jain, S.C., 2023. Influence of material grading and compositional platinum profile on the functionally graded piezoelectric bridge structure. *Proceedings of the Institution of Mechanical Engineers, Part L: Journal of Materials: Design and Applications*, 237(5), pp.1026-1041. (<https://doi.org/10.1177/1464420722113310>) [IF 2.5, Q2]
7. **Adhikari, J.**, Kumar, R., Narain, V. and Jain, S.C., 2023. Electromechanical study of graphene reinforced lead-free functionally graded tile for vibration energy harvesting. *Journal of Intelligent Material Systems and Structures*, 34(7), pp.861-876. (<https://doi.org/10.1177/1045389X221121949>) [IF - 2.4, Q2]

8. **Adhikari, J.**, Kumar, R. and Jain, S.C., 2022, December. Finite Element Analysis of Functionally Graded Graphene-Induced Piezoelectric Composites for Energy Harvesting Systems. In *Asian Conference on Mechanics of Functional Materials and Structures* (pp. 95-105). Singapore: Springer Nature Singapore. (https://doi.org/10.1007/978-981-99-5919-8_9)
9. **Adhikari, J.**, Kumar, R. and Jain, S.C., 2022. Angular poling effect on cymbal piezoelectric structure using rhombohedral and tetragonal PMN-0.33 PT for energy harvesting applications. *Applied Physics A*, 128(5), p.384(<https://doi.org/10.1007/s00339-022-05512-1>) [IF -2.5, Q2]
10. **Adhikari, J.**, Kumar, R., Narain, V. and Jain, S.C., 2022. Effect of Poling Orientation in Performance of Piezoelectric Materials. In *Machines, Mechanism and Robotics: Proceedings of iNaCoMM 2019* (pp. 1721-1732). Springer Singapore. (https://doi.org/10.1007/978-981-16-0550-5_166)
11. **Adhikari, J.**, Kumar, R. and Jain, S.C., 2021. Modeling and parametric analysis for performance improvement in piezoelectric energy harvesting tile. *Ferroelectrics*, 573(1), pp.201-213. (<https://doi.org/10.1080/00150193.2021.1890477>) [IF -0.8, Q4]
12. Singh, V., **Adhikari, J.**, Kumar, R. and Talha, M., " Design & Analysis of Piezoelectric Energy Harvester for the Cochlear Implant." In *International Conference on Composites: Design, Processing, Manufacturing and Health Monitoring 2024 (CDPMHM 2024)*, Springer (Under Review).
13. Singh, V., **Adhikari, J.**, Kumar, R. and Talha, M., " A Simplified Modeling of Auditory Dysfunction: The Lumped Model Perspective." In *International Conference of Design and Manufacturing Technologies 2024 (ICDMT 2024)*, Springer (Under Review).
14. **Adhikari, J.** " Design and Optimization of Mobile Microrobots with Piezoelectric Actuation for High-Precision Manipulation" In *11th International Electronic Conference on Sensors and Application* (Accepted).
15. Mohan, C., **Adhikari, J.**, Annachhatre, A. and Dikshit, A., *Machine Learning Models for Enhanced Methane Production in Biochar-Amended Anaerobic Digestion of Wastewater*. Chemometrics, Elsevier. (Under Review)

SKILLS

- Languages: C, C++, MATLAB, Python
- FEA Softwares: COMSOL Multiphysics

CONFERENCES

Jitendra Adhikari, Rajeev Kumar, Satish Chandra Jain(2022), Finite element analysis of functionally graded graphene induced piezoelectric composites for energy harvesting systems, 8th Asian Conference on Mechanics of Functional Materials and Structures (ACMFMS-2022), Guwahati, India.

Jitendra Adhikari, Rajeev Kumar, Satish Chandra Jain(2020), Electric Power Generation by harvesting energy through Piezoelectric PZT-PZNM Tile, International Conference on Smart Materials and Sustainable Technology (SMST 2020), Goa, India

Jitendra Adhikari, Rajeev Kumar, Satish Chandra Jain (2019), Effect of poling orientation in performance of piezoelectric materials, 4th International and 19th National Conference on Machines and Mechanisms (iNaCoMM 2019), IIT Mandi India.

Jitendra Adhikari, Rajeev Kumar, Satish Chandra Jain (2019), Modeling and Simulation of piezoelectric energy harvesting tile, International Conference on Clean and Renewable Energy (ICCARE-2019), NIT Durgapur , West Bengal, India