

Dr. Prasant Kumar Swain

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Research Interest

- 📌 **Vibration and Flutter Control, Smart Laminated Composite Structures, Uncertainty Quantification and Reliability Analysis, Structural and Health Monitoring**

Education

- 📌 **PhD (Aerospace Structures)**; Indian Institute of Technology, Kharagpur, West Bengal, India
- 📌 **M. Tech (Machine Design and Analysis)**; National Institute of Technology, Rourkela, Odisha, India.
- 📌 **B. Tech (Mechanical Engineering)**; VSSUT (Formerly UCE), Burla; Odisha, India.

Research Publications

Journal Articles

- 1 Sharma, N., Swain, P. K., & Maiti, D. K. (2023a). Static and dynamic control of smart damaged variable stiffness laminated composite plate with piezoelectric layers. *Mechanics Based Design of Structures and Machines*.
- 2 Sharma, N., Swain, P. K., & Maiti, D. K. (2023b). Uncertainty quantification in free vibration and aeroelastic response of variable angle tow laminated composite plate. *Journal of Composite Materials*, 00219983231175468.
- 3 Verma, K., Swain, P. K., Maiti, D. K., & Singh, B. (2023). Uncertainty analysis of thermal stresses in shell structure subjected to thermal loads. *International Journal of Mechanics and Materials in Design*.
- 4 Sharma, N., Kumar Swain, P., Kumar Maiti, D., & Nath Singh, B. (2022). Vibration and uncertainty analysis of functionally graded sandwich plate using layerwise theory. *AIAA Journal*, 60(6), 3402–3423.
- 5 Sharma, N., Swain, P. K., & Maiti, D. K. (2022a). Active flutter suppression of damaged variable stiffness laminated composite rectangular plate with piezoelectric patches. *Mechanics of Advanced Materials and Structures*.
- 6 Sharma, N., Swain, P. K., & Maiti, D. K. (2022b). Aeroelastic control of delaminated variable angle tow laminated composite plate using piezoelectric patches. *Journal of Composite Materials*, 56(29), 4375–4408.
- 7 Sharma, N., Swain, P. K., Maiti, D. K., & Singh, B. N. (2022). Static and free vibration analyses and dynamic control of smart variable stiffness laminated composite plate with delamination. *Composite Structures*, 280, 114793.

- 8 Sharma, N., Swain, P. K., Maiti, D., & Singh, B. (2022). Stochastic frequency analysis of laminated composite plate with curvilinear fiber. *Mechanics of Advanced Materials and Structures*, 29(6), 933–948.
- 9 Swain, P. K., Maiti, D. K., & Singh, B. N. (2022). Passive flutter suppression of damaged smart laminated composite plate using active fiber composite layer. *Mechanics Based Design of Structures and Machines*, 50(2), 556–575.
- 10 Swain, P. K., Tiwari, P., Maiti, D. K., Singh, B. N., & Maity, D. (2022). Active flutter control of delaminated composite plate using active fiber composite patches. *Thin-Walled Structures*, 172, 108856.
- 11 Sharma, N., Swain, P. K., Maiti, D. K., & Singh, B. N. (2021). Stochastic aeroelastic analysis of laminated composite plate with variable fiber spacing. *Journal of Composite Materials*, 55(30), 4527–4547.
- 12 Swain, P., Sharma, N., Maiti, D., & Singh, B. (2020). Aeroelastic analysis of laminated composite plate with material uncertainty. *Journal of Aerospace Engineering*, 33(1).
- 13 Swain, P. K., Adhikari, B., Maiti, D., & Singh, B. (2019). Aeroelastic analysis of cnt reinforced functionally graded laminated composite plates with damage under subsonic regime. *Composite Structures*, 222, 110916.

Conference Proceedings

- 1 Sharma, N., Swain, P. K., & Maiti, D. K. (2019). Time domain flutter analysis using rational function approximation. In *Icracm*.
- 2 SWAIN, P. K., MAITI, D. K., & SINGH, B. N. (2018). Analysis of damaged laminated composite plate under dynamic and aeroelastic environment. In *Proceedings of the american society for composites—thirty-third technical conference*.

Employment History

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|---------------------------------|---|
| Academic (Feb 2004 – Sep 2005) | <ul style="list-style-type: none"> ■ Indira Gandhi Institute of Technology, Sarang, Odisha, India Padmanav College of Engineering, Rourkela, Odisha, India |
| Industry (Oct 2005 – July 2013) | <ul style="list-style-type: none"> ■ Reliance Industries Ltd.(RIL), Navi Mumbai, Maharashtra, India Foster Wheeler India Pvt. Ltd., Kolkata, West Bengal, India Petrofac International (UAE) LLC, Sharjah, United Arab Emirates & Petrofac Engineering Services India Pvt. Ltd, Chennai, Tamil Nadu, India |
| Academic(July 2015 – Dec 2015) | <ul style="list-style-type: none"> ■ Gandhi Institute of Excellent Technocrats (GIET), Bhubaneswar, Odisha, India |
| Academic (Apr 2022 – Oct 2023) | <ul style="list-style-type: none"> ■ C V Raman Global University (CGU), Bhubaneswar, Odisha, India |
| Academic (Nov 2022 – Tilldate) | <ul style="list-style-type: none"> ■ National Institute of Advanced Manufacturing Technology, Hatia, Ranchi, Jharkhand, India |

Work Experience

- Academic experience **Under Graduate Courses Taught:** Mechanics of solid (MOS), Advanced mechanics of solid (AMOS), Engineering Mechanics, Mechanical Vibration (MV), Finite Element Method (FEM)
- Industry experience **Design and Detailed Engineering:** Preparation of technical specification, Mechanical data sheets, Material requisition for quotation (MRQ) and purchase (MRP), Technical bid evaluation of offers, Coordinating and participating in bid clarification meeting, kick-off meeting and reviewing vendor documents and drawing for various types of pumps (centrifugal and positive displacement) (API, ASME), Compressors (API 618, API 619), and packages (chemical injection package, instrument air compressor, water treatment package, waste water treatment packages).

Projects

- Research Projects **Reliability Analysis of Aircraft Wing under Aeroelastic Environment (continuing)**, sponsored by Aeronautical Development Agency, ADA Bengaluru.
- Industry Projects **Jamnagar Export Refinery Project (JERP), Jamnagar, Gujrat, India,** Reliance Industries Limited;
Paradip Refinery project, Odisha, India; Indian Oil Corporation Limited;
South Yoloten Gas Field Development Project, Turkengas, Turkmenistan;

Skills

- Languages **English, Hindi, Odia.**
- Coding **MATLAB, C**
- Software **ABAQUS, MSC.Nastran, CATIA**
- Codes and Standards **API-610, 675, 682, 685, and ASME-B73.1, B73.2**
- Misc. **L^AT_EX typesetting and publishing.**

Miscellaneous

Scholarship Awarded

- 2013-2015 **MHRD Scholarship for M.Tech. Programme.**
- 2015-2020 **MHRD Scholarship for PhD Research Programme.**

References

Prof. Dipak Kumar Maiti

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