



Dr. Priyaranjan Pal

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Employment Record-

| Position Held | From & To | Institute |
|---------------------|----------------------------|---|
| Associate Professor | March 2018 to till date | M.N. National Institute of Technology Allahabad |
| Assistant Professor | January 2008 to March 2018 | M.N. National Institute of Technology Allahabad |

Educational Qualification-

| Degree | Discipline/Specialization | Year | Institute/University |
|--------|--|------|-----------------------|
| B. E. | Civil Engineering | 1999 | IEST, Shibpur, Howrah |
| M.E. | Civil Engineering (Structural Engineering) | 2001 | IEST, Shibpur, Howrah |
| Ph.D. | Civil Engineering (Structural Engineering) | 2008 | IIT Kharagpur |

Area of Research-

- Concretes; Composites; Fluid-Structure Interaction; Finite Element Analysis; Meshless Methods

Publication in Journals-

1. Deepak Kumar Singh, **Priyaranjan Pal** and S. K. Duggal, "Dynamic pressure on lock gate structure coupled with fluid", Vibroengineering Procedia, Vol. 29, pp. 165-170, 2019, doi:10.21595/vp.2019.21124 (**Scopus**)
2. **Priyaranjan Pal**, "Determination of dynamic modulus of elasticity of concrete", Indian Concrete Journal, Vol. 93, Issue 13, pp. 7-15, 2019, ISSN 00194565. (**Scopus**)
3. Preeti Agarwal, **P. Pal** & P. K. Mehta, "Analysis of RC Skew Box-Girder Bridge", International Journal of Science and Innovative Engineering & Technology, vol. 6, pp. 1-8, 2019, ISBN 978-93-81288-18-4.
4. **P. Pal**, "Dynamic Poisson's ratio and modulus of elasticity of pozzolana Portland cement concrete", International Journal of Engineering and Technology Innovation, vol. 9, no. 2, pp. 131-144, 2019, ISSN 2223-5329 (Print), ISSN 2226-809X (Online). (**Scopus**)
5. Nidhi Gupta, Preeti Agarwal & **Priyaranjan Pal**, "Free Vibration Analysis of RCC Curved Box Girder Bridges", International Journal of Technical Innovation in Modern Engineering & Science, vol. 5, no. 2, pp. 1-7, 2019, e-ISSN: 2455-2585.

6. **P. Pal**, "The displacement view of a multilayered HSDT plate", *Journal of Polymer Science and Engineering*, Vol. 1, pp. 1-9, 2018, doi:10.24294/jpse.v1i2.863.
7. Deepak Kumar Singh, S. K. Duggal & **Priyaranjan Pal**, "Free Vibration Analysis of Stiffened Lock Gate Structure Coupled with Fluid", *Journal of Structural Engineering (Madras)*, Vol. 45, No. 1, 2018, pp. 1–9, ISSN: 0970-0137. (**Scopus**)
8. Amit Kumar Gorai & **P. Pal**, "Economical Design of Stiffened Plate using FEM", *Journal of Structural Engineering and Management*, Vol. 4, Issue 2, pp. 50-57, 2017. ISSN: 2393-8773 (Online).
9. Amit Kumar Gorai, Lalit Kumar Shama, **P. Pal** & P.K. Mehta, "Effect of Partial Fixity on Negative Bending Moments in RCC Frames", *Journal of Structural Engineering and Management*, Vol. 4, Issue 1, pp. 73-80, 2017. ISSN: 2393-8773 (Online).
10. Rakesh Kumar, P.K. Mehta, **P.R. Pal** & TP Muhammed Ashiq, "Relation among Mechanical Properties of Ground Granulated Blast Furnace Slag Concrete" *International Journal of Civil Engineering and Technology*, Vol. 8, Issue 3, 2017, pp. 423–431, ISSN Print: 0976-6308 and ISSN Online: 0976-6316. (**Scopus**)
11. **P. Pal**, S. Shukla and A.K. Ranjan, "Performance of pervious concrete with recycled concrete aggregate", *Indian Concrete Journal*, Vol. 91, Issue 1, pp. 86-92, 2017, ISSN 00194565. (**Scopus**)
12. **P. Pal**, "Optimal choice of scaling parameter in moving least squares approximation used in Meshless Local Petrov-Galerkin approach", *International Journal of Advance Civil Engineering and Technology*, Vol. 1, Issue 3, pp. 1-24, 2016.
13. **P. Pal**, R. R. Singh & Deepak Kumar Singh, "Free Vibration Frequencies of Lock Gate Structure considering Fluid Structure Interaction", *International Journal of Advance Civil Engineering and Technology*, Vol. 1, Issue 2, pp. 1-22, 2016.
14. R. Sarkar, Tumpa Pal & **P. Pal**, "Studies on Piparwar Open Cast Mines of North Karanpura Coalfield", *Journal of Geotechnical Studies*, Vol. 1, Issue 3, pp. 1-14, 2016.
15. Amit Kumar Gorai & **P. Pal**, "Effectuality of Stiffeners in Plate using FEM", *Journal of Civil and Architectural Engineering*, Vol. 1, Issue 2, pp. 1-15, 2016.
16. R. R. Singh & **P. Pal**, "Analysis of stiffened isotropic and composite plate", *International Research Journal of Engineering and Technology*, Vol. 3, Issue 2, pp. 889-895, 2016. ISSN: 2395 -0056 (online); ISSN: 2395-0072 (print).
17. Sourav Das, **P. Pal** & R. M. Singh, "Prediction of Concrete Mix Proportion using ANN Technique", *International Research Journal of Engineering and Technology*, Vol. 2, Issue 5, pp. 820-825, 2015. ISSN: 2395 -0056 (online); ISSN: 2395-0072 (print).
18. Deepak Kumar Singh, S. K. Duggal & **P. Pal**, "Analysis of Stiffened Plates using FEM – A Parametric Study", *International Research Journal of Engineering and Technology*, Vol. 2, Issue 4, pp. 1650-1654, 2015. ISSN: 2395 -0056 (online); ISSN: 2395-0072 (print).
19. D. K. Pandey, H. S. Parihar & **P. Pal**, "A Study on the Performance of Elements in FEM" *International Journal of Engineering Research and Development*. Vol. 10, Issue 8, pp. 20-25, 2014. ISSN: 2278-067X (online); ISSN: 2278-800X (print).
20. Junaid Kameran Ahmed, V. C. Agarwal, **P. Pal** & Vikas Srivastav, "Static and Dynamic Analysis of Composite Laminated Plate" *International Journal of Innovative Technology and Exploring Engineering*. Vol. 3, Issue 6, pp. 56-60, 2013. ISSN: 2278-3075
21. **P. Pal** & A. Bhar, "The Displacement Perspective during Ultimate Failure of Composite Laminates" *Journal of Applied Composite Materials*, Vol. 20, Issue 2, pp. 171-183, 2013, doi: 10.1007/s10443-012-9262-y (**SCI**)
22. **P. Pal** & S. K. Bhattacharyya, "Slosh Dynamics of Liquid-Filled Composite Containers: A Two Dimensional Meshless Local Petrov-Galerkin Approach" *Journal of Fluids & Structures*, Vol. 39, pp. 60-75, 2013. doi: 10.1016/j.jfluidstructs.2013.02.002 (**SCI**)
23. **P. Pal**, "Slosh Dynamics of Liquid-Filled Rigid Containers: Two Dimensional Meshless Local Petrov-Galerkin Approach" *Journal of Engineering Mechanics*, Vol. 138, Issue 6, pp. 567-581. 2012. doi: 10.1061/(ASCE)EM.1943-7889.0000367 (**SCI**)
24. **P. Pal**, "Nonlinear Sloshing in Rigid Containers", *International Journal of Recent Trends in Engineering & Technology*, Issue on Civil Engineering, Vol. 5, No. 3, pp. 7-11, 2011. doi: 01.IJRT ET 5.3.80

25. **P. Pal**, "A study on effect of submerged block on sloshing characteristics using Meshless Local Petrov-Galerkin approach", International Journal of Earth Sciences and Engineering. Vol. 03, No. 03 – Special Issue, pp. 320-329, 2010. ISSN 0974-5904.
26. **P. Pal**, "Free-Vibration Analysis of Liquid-Filled Containers using Meshless Local Petrov-Galerkin Approach", International Journal of Recent Trends in Engineering & Technology, Issue on Civil Engineering, Vol. 3, No. 6, pp. 1-5, 2010. doi: 01.IJRTET.03.05.34
27. **P. Pal** & S. K. Bhattacharyya, "Sloshing in Partially Filled Liquid Containers – Numerical and Experimental Study for 2-D problems", Journal of Sound and Vibration, Vol. 329, Issue 21, pp. 4466-4485, 2010. doi: 10.1016/j.jsv.2010.05.006 (SCI)
28. **P. Pal**, "Sloshing in Partially Filled Liquid Containers – An Experimental Study", International Journal of Recent Trends in Engineering & Technology, Issue on Civil Engineering, Vol. 1, No. 6, pp. 1-5, 2009. doi: 01.IJRTET.1.6.173
29. **P. Pal** & S. K. Bhattacharyya, "Progressive Failure Analysis of Cross Ply Laminated Composite Plates by Finite Element Method" Journal of Reinforced Plastics and Composites, Vol. 26, No. 5, pp. 465-477, 2007. doi: 10.1177/0731684406072533 (SCI)
30. **P. Pal** & C. Ray, "Progressive Failure Analysis of Laminated Composite Plates by Finite Element Method" Journal of Reinforced Plastics and Composites, Vol. 21, No. 16, pp. 1505-1513. 2002. doi: 10.1106/073168402021488 (SCI)

Publication in Conference Proceedings-

31. **P. Pal** & S. K. Bhattacharyya, Element free Galerkin method for static and free vibration analyses of thin plates of complicated shape, Proc. 3rd International Conference on Theoretical, Applied, Computational and Experimental Mechanics (ICTACEM) IIT Kharagpur, December 28-30, 2004, pp. 435-443.
32. **P. Pal** & S. K. Bhattacharyya, Meshless Local Petrov-Galerkin (MLPG) approach for 2D sloshing of liquid under external excitation, Proc. 50th Congress of Indian Society of Theoretical & Applied Mechanics (ISTAM) (An International Meet), IIT Kharagpur, December 14-17, 2005.
33. **P. Pal** & S. K. Bhattacharyya, Choice of Scaling Parameter in Meshless Local Petrov-Galerkin (MLPG) method, Proc. 2nd International Congress on Computational Mechanics and Simulation (ICCMS), IIT Guwahati, December 8-10, 2006, pp. 1066-1072.
34. **P. Pal** & S. K. Bhattacharyya, Nonlinear sloshing of liquid in a container using meshless local Petrov-Galerkin (MLPG) approach, Proc. of the International Conference on Civil Engineering in the New Millennium: Opportunities and Challenges (CENeM-2007), BESU, Shibpur, Howrah, January 11-14, 2007, pp. 212-222.
35. **P. Pal** & S. K. Bhattacharyya, Two Dimensional Analysis of Sloshing of Liquid in a Container – Experimental and Numerical Study, Proc. International Conference on Recent Developments in Structural Engineering (RDSE), Manipal Institute of Technology Manipal, August 30-31&1st September, 2007, pp. 625-632.
36. **P. Pal** & S. K. Bhattacharyya, Liquid sloshing in rectangular tanks with a submerged block using MLPG approach, Proc. 4th International Conference on Theoretical, Applied, Computational and Experimental Mechanics (ICTACEM), IIT Kharagpur, December 27-29, 2007.
37. **P. Pal** & S. K. Bhattacharyya, Dynamic Analysis of Liquid Filled Composite Containers using Meshless Local Petrov-Galerkin (MLPG) Method, Proc. International Conference on Innovations in Building Materials, Structural Designs and Construction Practices (IBMSDCP), Bannari Amman Institute of Technology Tamil Nadu, May 15-17, 2008.
38. **P. Pal**, A Meshless Local Petrov-Galerkin Approach for 2-Dimensional Elastostatics, National Conference on Technical Advances in Civil Engineering, BIT CON-08, BIT Bhilai House, Durg, November 7-8, 2008.
39. **P. Pal** & S. K. Bhattacharyya, Liquid Sloshing in Containers under Seismic Excitation, Proc. The Sixth Structural Engineering Convention (SEC), SERC, CSIR Campus, Taramani, Chennai, December 18-20, 2008, pp. 129-138.
40. **P. Pal** & S. K. Bhattacharyya, Characterization of Liquid Filled Containers considering Fluid-Structure Interaction, Proc. 9th International Conference on Vibration Problems (ICOVP), IIT Kharagpur, January 19-22, 2009, pp. 9-16.

41. **P. Pal**, A study on effect of submerged block on sloshing characteristics using Meshless Local Petrov-Galerkin approach, Proc. International Conference on Advances in Concrete, Structural and Geotechnical Engineering (ACSGE), BITS Pilani, October 25-27, 2009.
42. **P. Pal**, Coupled Free-Vibration Analysis of Liquid-Filled Containers, A National Conference on CRDCE-10, SVIT, Vasad, Gujarat, January 21-22, 2010, pp. 14-15.
43. R. P. Singh & **P. Pal**, Appraisal of Certain Anaerobic Digestion Studies, 7th International Conference on Environmental Science and Technology 2014, Houston, Texas, USA, June 9-13, 2014, pp. 159-166.
44. Naveen Kumar Meena, Goutam Ghosh & **P. Pal**, Performance-Based Seismic Design of Buildings, International Conference on Recent Trends & Challenges in Civil Engineering (RTCCE-2014), MNNIT Allahabad, December 12-14, 2014, pp. 32.
45. **P. Pal**, Combined Effects of Flaky and Elongated Aggregates on the Compressive Strength of Concrete, International Conference on Advances in Engineering Sciences: ICAES2017, Phuket, Thailand, July 3-5, 2017, pp. 70.
46. Deepak Kumar Singh, S. K. Duggal & **P. Pal**, Free Vibration Analysis of Stiffened Lock Gate Structure Coupled with Fluid, 3rd Indian Conference on Applied Mechanics (INCAM-2017), MNNIT Allahabad, July 5-7, 2017, pp. 249-250.
47. Lalit Kumar Shama, Amit Kumar Gorai, S. K. Duggal & **P. Pal**, A parametric study on corrugated sheets using FEM, 3rd Indian Conference on Applied Mechanics (INCAM-2017), MNNIT Allahabad, July 5-7, 2017, pp. 61-62.
48. Arjit Verma, **P. Pal** & Y.K. Gupta, Soil-Structure Interaction for Building Structures: A Review, 8th International Joint Conferences on Advances in Engineering and Technology (AET 2018), Trivandrum, Kerala, January 20-21, 2018, pp. 155-160.
49. Chandan Kumar & **P. Pal**, Static Behaviour of Laminated Composite Plates using FEM, 8th International Joint Conferences on Advances in Engineering and Technology (AET 2018), Trivandrum, Kerala, January 20-21, 2018, pp. 161-167.
50. Nidhi Gupta, Preeti Agarwal & **Priyaranjan Pal**, Free Vibration Analysis of Curved Box Girder Bridges, International Conference on Modern Trends in Civil Engineering (ICMTCE-2019), Lucknow, Uttar Pradesh, March 01-02, 2019, pp. 42.
51. Preeti Agarwal, **Priyaranjan Pal** & P. K. Mehta, Analysis of RC Skew Box-Girder Bridge, International Conference on Contemporary Engineering and Technology (ICCET-2019), Inderprastha Engineering College, Ghaziabad, 201010, UP, April 27-28, 2019, pp. 4.
52. Preeti Agarwal, **Priyaranjan Pal** & P. K. Mehta, Analysis of Isotropic and Orthotropic Sandwich Bridge Decks, International Conference on Recent Trends and Innovations in Civil Engineering (ICRTICE 2019), Medi-Caps University, Indore, 453331, September 26-28, 2019, pp. 33.
53. Deepak Kumar Singh, **P. Pal** & S. K. Duggal, Free Vibration Frequencies of Lock Gate Structure, International Conference on Recent Trends and Innovations in Civil Engineering (ICRTICE 2019), Medi-Caps University, Indore, 453331, September 26-28, 2019, pp.39
54. Arjit Verma, **P. Pal** & Y.K. Gupta, Non-linear Dynamic Analysis of a Multi-storey Building Subjected to Earthquake, International Conference on Recent Trends and Innovations in Civil Engineering (ICRTICE 2019), Medi-Caps University, Indore, 453331, September 26-28, 2019, pp. 58
55. Deepak Kumar Singh, **P. Pal** & S. K. Duggal, Dynamic Pressure on Lock Gate Structure Coupled with Fluid, 43rd International JVE Conference, Bennett University, Greater Noida (Delhi), India, November 28-30, 2019.

Reviewer of Journals-

1. Journal of Sound and Vibration, Elsevier- 2012, 2013
2. Journal of Fluids and Structures, Elsevier- 2012
3. Ocean Engineering, Elsevier- 2012, 2013, 2015, 2016
4. Journal of The Institution of Engineers (India): Series A, Springer- 2019
5. Journal of Asian Architecture and Building Engineering, Taylor & Francis- 2019

Editorial Board Member-

1. Journal of Building Materials and Structural Engineering, June, 2017
2. Journal of Polymer Science and Engineering, January, 2018

B. Tech. Project Guided-

| | |
|-----|--|
| 1. | Analysis and Design of Multistoried Hostel Building at Allahabad and Modeling of Underlying Soil, 2011 |
| 2. | Analysis and Design of Buildings using Post Tensioning, 2012 |
| 3. | Design of Industrial Steel Building, 2013 |
| 4. | Application of Light Gauge Structures, 2014 |
| 5. | A Parametric Study on Concrete Mix using ANN Technique, 2015 |
| 6. | Prediction of Modulus of Elasticity of Concrete using Non Destructive Testing, 2016 |
| 7. | Combined Effect of Flaky and Elongated Aggregates on Strength of Concrete, 2017 |
| 8. | Mechanical Properties of Brick Aggregate Added Concrete, 2018 |
| 9. | Static Modulus of Elasticity of Concrete, 2019 |
| 10. | Self compacting concrete, Ongoing |

M. Tech. Thesis Supervised-

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| 1. | Analysis of Laminated Composite Beams using FEM, 2011 |
| 2. | Failure Analysis of Laminated Composite Plates using FEM, 2011 |
| 3. | A Study on Failure Analysis of Laminated Composite Plates, 2012 |
| 4. | Vibration analysis of reservoir lock gate structures considering fluid structure interaction, 2012 |
| 5. | A parametric study on FEM with varying elements in plate structures, 2013 |
| 6. | Static and Dynamic Analysis of Composite Laminated Plate, 2013 |
| 7. | Numerical Modeling of Partially Restrained RCC Rectangular Slab, 2014 |
| 8. | Dynamic Analysis of Lock Gate Structures, 2014 |
| 9. | Performance Based Seismic Design of Buildings, 2014 |
| 10. | Prediction of Concrete Mix Proportion using ANN Technique, 2015 |
| 11. | Economical Design of Thin Stiffened Square Plates using FEM, 2015 |
| 12. | Free Vibration Analysis of Lock Gate Structure, 2016 |
| 13. | Pervious Concrete Pavements using Recycled Concrete Aggregate, 2016 |
| 14. | Slosh Frequencies of a Rectangular Tank using FEM, 2017 |
| 15. | A Parametric Study on Corrugated Sheets using FEM, 2017 |
| 16. | Behavior of Multilayered Composite Plate using FEM, 2018 |
| 17. | Finite Element Analysis of RCC Curved Box Girder Bridges, 2019 |
| 18. | Soil Structure Interaction, Ongoing |
| 19. | Sustainable Concrete, Ongoing |

Ph. D Thesis Supervised-

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|----|-----------------------------|--------------------|------------------|
| 1. | Fluid Structure Interaction | Deepak Kumar Singh | Thesis Submitted |
| 2. | Composite Plate | Ravi Joshi | Thesis Submitted |
| 3. | Bridge Engineering | Preeti Agrawal | Ongoing |
| 4. | Soil Structure Interaction | Arjit Verma | Ongoing |
| 5. | High Performance Concrete | Arun Singh Chahar | Ongoing |
| 6. | Durability of Concrete | Mrinank Pandey | Ongoing |
