

PATHTHIGE LAKSHITHA NIROSHAN FERNANDO

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ResearchGate



CAREER OBJECTIVE

With an academic background in Civil Engineering, specializing in the Structural Engineering fields of Computational Mechanics, Dynamic Impact Loading, Blast Engineering and Light-Weight Structures, my objective is to put to good use these knowledge and skills towards lecturing and research

EDUCATION

Doctor of Philosophy (Ph.D.) School of Civil Engineering, The University of Sydney, Australia Thesis title: The behaviour of impedance-graded multi-metallic systems under dynamic loads	2016-2020
Master of Science (M.Sc.) (<i>Major Component of Research</i>) Department of Civil Engineering, University of Moratuwa, Sri Lanka Thesis title: Structural Feasibility of a Precast Building System	2015-2016
Bachelor of the Science of Engineering (B.Sc. Eng. (Hons.)) – First Class Department of Civil Engineering, University of Moratuwa, Sri Lanka	2010-2015
Primary and Secondary Education D.S. Senanayake College, Colombo 7, Sri Lanka	1996-2009
Advanced Level Graded Examinations in Music Performance for Piano and Music Literacy Trinity College London and The Associated board of the Royal Schools of Music	2000-2011

PROFESSIONAL MEMBERSHIP

Associate Member - The Institution of Engineers Sri Lanka (IESL)	2015-present
Associate Member - Engineering Council Sri Lanka (ECSL)	2020-present
Associate Member - Society of Structural Engineers Sri Lanka (SSESL)	2022-present

ACADEMIC DISTINCTIONS AND AWARDS

President's Award for Scientific Research - National Research Council, Sri Lanka (2019)
Engineering Excellence Award for Best Paper Published - The Institution of Engineers Sri Lanka-New South Wales Chapter, Australia (2019)
Engineering and Information Technologies Research Scholarship – The University of Sydney, Australia (2016-2020)

EXPERIENCE

Teaching

- Lecturer - Department of Civil Engineering, University of Moratuwa, Sri Lanka** 2021-present
Structural Mechanics I (First Year), Mechanics of Materials (Second Year),
Structural Mechanics II (Second Year), Bridge Engineering (Fourth Year), Finite
Element Analysis (Postgraduate)
- Lecturer on Assignment Basis - Department of Civil Engineering, General Sir John Kotelawala Defence University, Sri Lanka** 2020-2021
Design of Steel Structures (Third Year), Applied Finite Element Method for
Structural Analysis (Fourth Year), Bridge Engineering (Fourth Year)
- Casual Academic Staff – School of Civil Engineering, The University of Sydney, Australia** 2017-2019
Design of Concrete Structures (Third Year)
- Visiting Instructor - Department of Civil Engineering, University of Moratuwa, Sri Lanka** 2015
Building Construction and Materials (First Year)

Research

- Post-Doctoral Research Scholar - Centre for Biomedical Innovation, University of Moratuwa, Sri Lanka** 2020-2021
Research on evaluation of structural and material performance of external fixators
- Doctoral Researcher - School of Civil Engineering, The University of Sydney, Australia** 2016-2020
Research on blast and impact loads
- Research Assistant - National Building Research Organization, Sri Lanka** 2015-2016
Research and Development on precast building technology
- Reviewer for International Journals and Conferences**
International Journal of Mechanical Sciences, Construction & Building Materials, ICSECM 2021,
MERCon 2021, KDU IRC 2020, IESL YMS Technical Conference 2020

JOURNAL PUBLICATIONS

- P.L.N. Fernando**, C. Attard, K. Wijesooriya, D. Mohotti and C.K. Lee, "Lessons Learnt from Recent Explosions in Storage Facilities with Ammonium Nitrate", In: *Dissanayake, R., Mendis, P., Weerasekera, K., De Silva, S., Fernando, S., Konthesingha, C. (eds) 12th International Conference on Structural Engineering and Construction Management. Lecture Notes in Civil Engineering*, vol 266. Springer, Singapore, 2023. https://doi.org/10.1007/978-981-19-2886-4_8.
- P. L. N. Fernando**, A. Abeygunawardane, P.C.I. Wijesinghe, P. Dharmaratne, and P. Silva, " An engineering review of external fixators," *Medical Engineering & Physics*, vol. 98, pp. 91-103, 2021. Available doi: <https://doi.org/10.1016/j.medengphy.2021.11.002>.
- D. Mohotti, **P. L. N. Fernando**, D. Weerasinghe and A. Remennikov, "Evaluation of effectiveness of polymer coatings in reducing blast-induced deformation of steel plates," *Defence Technology*, vol. 17, pp. 1895-1904, 2021. Available doi: <https://doi.org/10.1016/j.dt.2020.11.009>.
- P. L. N. Fernando**, D. Mohotti, A. Remennikov, P. J. Hazell, H. Wang and A. Amin, "Stress propagation and debonding effects in impedance-graded multi-metallic systems under impact loading," *International Journal of Protective Structures*, vol. 12, pp. 3-21, 2021. Available doi: <https://doi.org/10.1177/2041419620917709>.

P. L. N. Fernando, D. Mohotti, A. Remennikov, P. J. Hazell, H. Wang and A. Amin, "Experimental, Numerical and Analytical Study on the Shock Wave Propagation through Impedance-Graded Multi-Metallic Systems," *International Journal of Mechanical Sciences*, vol. 178, pp. 105621, 2020. Available doi: <https://doi.org/10.1016/j.ijmecsci.2020.105621>.

P. Ranaweera, D. Weerasinghe, **P. L. N. Fernando**, S. N. Raman and D. Mohotti, "Ballistic performance of multi-metal systems," *International Journal of Protective Structures*, vol. 11, pp. 379-410, 2020. Available doi: <https://doi.org/10.1177/2041419619898693>.

P. L. N. Fernando, D. Mohotti and A. Remennikov, "Behaviour of Explosively Welded Impedance-Graded Multi-Metallic Composite Plates under Near-Field Blast Loads," *International Journal of Mechanical Sciences*, vol. 163, pp. 105124, 2019. Available doi: <https://doi.org/10.1016/j.ijmecsci.2019.105124>.

P. L. N. Fernando and D. Mohotti, "Design of an Impedance-Graded Metallic Composite System as a Protective Mechanism for Concrete Structures," *Journal of Applied Mechanics*, vol. 86, pp. 094501, 2019. Available doi: <https://doi.org/10.1115/1.4043886>.

P. L. N. Fernando, D. Mohotti and A. Remennikov, "An Innovative Approach of Using Continuous Impedance-Graded Metallic Composite System for Attenuation of Stress Waves," *Journal of Applied Mechanics*, vol. 86, pp. 061002, 2019. Available doi: <https://doi.org/10.1115/1.4042681>.

D. Mohotti, **P. L. N. Fernando** and A. Zaghoul, "Evaluation of Possible Head Injuries Ensuing a Cricket Ball Impact," *Computer Methods and Programs in Biomedicine*, vol. 158, pp. 193-205, 2018. Available doi: <https://doi.org/10.1016/j.cmpb.2018.02.017>.

P. L. N. Fernando, M. T. R. Jayasinghe and C. Jayasinghe, "Structural Feasibility of Expanded Polystyrene (EPS) Based Lightweight Concrete Sandwich Wall Panels," *Construction and Building Materials*, vol. 139, pp. 45-51, 2017. Available doi: <https://doi.org/10.1016/j.conbuildmat.2017.02.027>.

CONFERENCE PROCEEDINGS

S.V.P. Allalagoda, S.S. Bandaranayake, T.V.D.V.K. Vitharana, M.T.R. Jayasinghe, **P.L.N. Fernando**, H.M.S.T. Herath, "Effectiveness of sri lankan bamboo as a structural material", in *13th International Conference on Sustainable Built Environment (ICSBE 2022)*, Kandy, Sri Lanka, December 16-18, 2022.

K. Wijesooriya, D. Mohotti, and **P. L. N. Fernando**, "A highly efficient numerical approach using fluidstructure interaction to estimate responses of supertall structures", in *12th International Conference on Structural Engineering and Construction Management (ICSECM 2021)*, Kandy, Sri Lanka, December 17-19, 2021.

P. L. N. Fernando, D. Mohotti, A. Remennikov, P. J. Hazell, H. Wang and A. Amin, "Stress wave propagation through an impedance graded multi material system", in *13th International Conference on Shock & Impact Loads on Structures (SILOS13)*, Guangzhou, China, December 14-15, 2019.

P. L. N. Fernando, A. Zaghoul and D. Mohotti, "Blast Response of Explosively Welded Impedance Graded Multi-Metal Systems", in *13th International Conference on the Mechanical Behaviour of Materials (ICM13)*, Melbourne, Australia, June 11-14, 2019.

P. L. N. Fernando, A. Zaghoul and D. Mohotti, "Experimental and Numerical Investigation of Possible Head Damages Due to The Impact of a Cricket Ball", in *8th International Conference on Structural Engineering and Construction Management (ICSECM 2017)*, Kandy, Sri Lanka, December 7-9, 2017.

P. L. N. Fernando, D. Mohotti, A. Remennikov and B. Uy, "Continuous Impedance-Graded Metallic Composite System for Shock Mitigation", in *6th International Conference on Design and Analysis of Protective Structures (DAPS 2017)*, Melbourne, Australia, November 29-December 1, 2017.

P. L. N. Fernando, D. Mohotti and A. Zaghoul, "Mitigation of Possible Head Damages Due to the Impact of a Cricket Ball", in *9th Australasian Congress on Applied Mechanics (ACAM9)*, Sydney, Australia, November 27-29, 2017.

D. Mohotti, S. Razzaque, **P. L. N. Fernando** and D. Dias-da-Costa, "Numerical and Analytical Investigation of Load Transfer Through Eccentric Columns with Different Cross Sections", in *28th Biennial National Conference of the Concrete Institute of Australia*, Adelaide, Australia, October 22-25, 2017.

P. L. N. Fernando and W. P. S. Dias, "Some Engineering Aspects of Ancient Structures", in *6th International Conference on Structural Engineering and Construction Management (ICSECM 2015)*, Kandy, Sri Lanka, December 11-14, 2015.

P. L. N. Fernando and C. Jayasinghe, "Structural Feasibility of a Pre-Cast Building System", in *6th International Conference on Structural Engineering and Construction Management (ICSECM 2015)*, Kandy, Sri Lanka, December 11-14, 2015.

GUEST LECTURES & PANELS

Panel member for "**3rd CINEC International Research Symposium (CIRS) -2022**" – Symposium – CINEC Campus, Sri Lanka, 10th November 2022

Panel member for "**Fire Performance of Reinforced Concrete Structures**" – Webinar – INSEE Cement, Sri Lanka, 31st March 2022

Speaker for "**Blasts: Can Structures Resist?**" - Webinar - Civil Engineering Sectional Committee, The Institution of Engineers Sri Lanka, 23rd December 2021

RESEARCH SUPERVISION

Postgraduate

K.M.S.R. Wijekoon, "Development of an Analytical and Numerical Model to Predict the Behavior of a Multi-material System Subjected to High-velocity Impact Load", Department of Civil Engineering, University of Moratuwa, Sri Lanka (ongoing)

R.N. De Zoysa, "Investigation of the behaviour of structures under the combined effects of blast and fire loads", Department of Civil Engineering, University of Moratuwa, Sri Lanka (ongoing)

S.V.P. Allalagoda, "Structural Testing & Characterization of Different Varieties of Bamboo in Sri Lanka", Department of Civil Engineering, University of Moratuwa, Sri Lanka (ongoing)

H.M.C.N. Rathnayake, "Asses the structural adequacy of Sri Lankan expressway bridges due to the effect of blast load", Department of Civil Engineering, University of Moratuwa, Sri Lanka (ongoing)

Undergraduate

R.M.I.C.B Rathnayaka, "Development of an improved empirical formula to predict the deflection of plates under blast loads", Department of Civil Engineering, University of Moratuwa, Sri Lanka (ongoing)

H.M.T. Sajana, "Identifying nature-inspired solutions to resist impact and blast loads", Department of Civil Engineering, University of Moratuwa, Sri Lanka (ongoing)

D.M.D. Priyashan, "Study on effectiveness of waterproofing in building during the design, construction and maintenance phases of a structure", Department of Civil Engineering, University of Moratuwa, Sri Lanka (ongoing)

W.W.P. Perera, "Prediction of blast wave parameters using computational software", Department of Civil Engineering, General Sir John Kotelawala Defence University, Sri Lanka, December 2021.

A.K.T. Perera, "Development of a Simplified Blast Design Approach for Concrete Structures", Department of Civil Engineering, General Sir John Kotelawala Defence University, Sri Lanka, December 2021.

V. Randombage, "Development of a Simplified Blast Design Approach for Steel Structures", Department of Civil Engineering, General Sir John Kotelawala Defence University, Sri Lanka, December 2021.

R.Y. Waniganayake, "Design of a demountable cycleway for an existing bridge structure", Department of Civil Engineering, General Sir John Kotelawala Defence University, Sri Lanka, December 2021.

I hereby declare that all the information above is true and accurate to the best of my knowledge

Paththige Lakshitha Niroshan Fernando

Date: 31.12.2022