

Abheetha Peiris, Ph.D., P.E.

Education

Ph.D.	Civil Engineering (Structures)	University of Kentucky	2011
M.Eng.	Civil Engineering (Structures)	Osaka University, Japan	2006
B.Sc. (Hons.)	Civil Engineering	University of Peradeniya, Sri Lanka	2002

Professional Employment

Assistant Professor	Dept. of Civil Eng., Univ. of Kentucky	Aug. 2023–present
Program Manager (Structures)	Kentucky Transportation Center, Univ. of Kentucky	Jul. 2023–present
Adjunct Assistant Professor	Dept. of Civil Eng., Univ. of Kentucky	Jul. 2019–Jul. 2023
Research Engineer (Structures)	Kentucky Transportation Center, Univ. of Kentucky	Sep. 2011–Jun.2023

Specialization

Fiber Reinforced Polymer Composites, Bridge Retrofit, Field Testing, Structural Health Monitoring, Structural Analysis and Design, Seismic Evaluation and Retrofit, Impact Forces on Bridges, Reinforced and Prestressed Concrete Structures, Fatigue of Concrete Bridge Decks.

Patents

- U.S. Patent No. 10655328: Structural Reinforcement, Reinforced Structural Member and Related Method, 2013. Inventors: Harik, I.E., **Peiris, N.A.**, Thompson D.C., Murray, D.C., and Greenwell, C.N.

Recent Journal Publications

- Jawdhari, A., **Peiris, A.**, Fam, A., and Harik, I., "Evaluation of Spliced UHM CFRP Strip Panels for Strengthening Steel Beams." *ASCE Journal of Composites for Construction*. 2023, Vol. 27(1). [https://doi.org/10.1061/\(ASCE\)CC.1943-5614.0001275](https://doi.org/10.1061/(ASCE)CC.1943-5614.0001275)
- Mukhtar F.M., Jawdhari, A., and **Peiris, A.**, "Mixed-mode FRP-concrete bond failure analysis using novel test apparatus and 3-D non-linear FEM." *ASCE Journal of Composites for Construction*. 2022, Vol. 26(6). [https://doi.org/10.1061/\(ASCE\)CC.1943-5614.0001274](https://doi.org/10.1061/(ASCE)CC.1943-5614.0001274)
- Hossein, S., **Peiris, A.** and Harik, I., "Triage Method for Load Rating Bridge Size Two-Cell Reinforced Concrete Box Culverts for the AASHTO LRFD Design Load." *Structure and Infrastructure Engineering*, 2023, Vol. 19(9), pp. 1235-1248. (Published online 20 Dec. 2021) <https://doi.org/10.1080/15732479.2021.2015793>
- Kadhim, M.M.A., Jawdhari, A., and **Peiris, A.**, "Evaluation of Lap-Splices in NSM FRP Rods for Retrofitting RC Members." *Structures*. 2021, Vol. 30, pp. 877-894. <https://doi.org/10.1016/j.istruc.2021.01.054>
- Kadhim, M.M.A., Jawdhari, A., and **Peiris, A.**, "Development of Hybrid UHPC-NC Beams: A Numerical Study." *Engineering Structures*. 2021, Vol. 233, 111893. <https://doi.org/10.1016/j.engstruct.2021.111893>
- Peiris, A.**, and Harik, I.E., "Impact Damage Retrofit of RC Bridge Girder Previously Retrofitted with CFRP Fabric." *American Concrete Institute, ACI Special Publication*. 2021, Vol. 346, pp. 31-50.
- Mukhtar F.M., and Peiris, A., "FRP-concrete bond performance under accelerated hygrothermal conditions." *Construction and Building Materials*. 2021, 121403. <https://doi.org/10.1016/j.conbuildmat.2020.121403>
- Peiris, A.**, and Harik, I.E., "Steel beam strengthening with UHM CFRP strip panels." *Engineering Structures*. 2021, Vol. 226, 111395. <https://doi.org/10.1016/j.engstruct.2020.111395>
- Jawdhari, A., **Peiris, A.** and Harik, I., "Load rating of Bridge-Size Arch Culverts." *Structure and Infrastructure Engineering*. 2022, Vol. 18(3), pp. 362-375. (Published online 04 Dec. 2020) <https://doi.org/10.1080/15732479.2020.1850803>
- Peiris, A.**, and Harik, I.E., "Improving the durability of impact damaged PC Bridge girders using CFRP Rod Panel retrofit." *American Concrete Institute, ACI Special Publication*. 2019, Vol. 331, pp. 80-100.
- Peiris, A.**, and **Harik, I.E.**, "FRP-steel bond study of IM and UHM CFRP strips." *Construction and Building Materials*. 2018, Vol. 185, pp. 628-637. <https://doi.org/10.1016/j.conbuildmat.2018.07.109>
- Peiris, A.**, and **Harik, I.E.**, "Design and Construction of CFRP Rod Panel Retrofit for Impacted RC Bridge Girders." *J. Compos. Sci.* 2018, Vol. 2(3), 40. <https://doi.org/10.3390/jcs2030040>

Recent Research Awards

1. Harik, I.E., and **Peiris, N.A.** "Seismic Vulnerability Appraisal of Bridges in Kentucky for Compliance with FHWA's 2022 Specifications for the National Bridge Inventory (SNBI)" (SPR 24-656) *Federal Highway Administration and Kentucky Transportation Cabinet*. 07/01/2023 to 6/30/2026. \$350,000
2. Palle, S., and **Peiris, N.A.** "Corrosion Performance Overview of Existing Concrete Reinforcement Options", (SPR 24-654) *Federal Highway Administration and Kentucky Transportation Cabinet*. 07/01/2023 to 6/30/2025. \$180,000
3. **Peiris, N.A.**, and Harik, I.E. "Use of Epoxy for Rapid Pothole Repair in Concrete Bridge Decks" (SPR 23-57-1), *Federal Highway Administration and Kentucky Transportation Cabinet*. 10/01/2022 to 6/30/2023. \$38,000
4. **Peiris, N.A.**, and Harik, I.E. "Retrofit of Impact Damaged PC I-Girder with CatStrong Carbon Fabrics" (KHIT 146), *Federal Highway Administration and Kentucky Transportation Cabinet*. 01/11/2022 to 6/30/2025. \$90,500
5. Harik, I.E., and **Peiris, N.A.** "Updates to the AASHTO Guide Specifications for Design of Bonded FRP Systems for Repair and Strengthening of Concrete Bridge Elements" (NCHRP Project 20-07/Task 428), *National Cooperative Highway Research Program*. 09/03/2019 to 05/30/2020. \$130,000
6. **Peiris, N.A.**, and Harik, I.E. "Bridge Load Posting Based on Load Testing - (SPR 20-593)", *Federal Highway Administration and Kentucky Transportation Cabinet*. 07/01/2019 to 6/30/2025. \$480,000
7. Harik, I.E., and **Peiris, N.A.** "Retrofit of Bridge Pier Caps with CatStrong UCF - (KHIT 131)", *Federal Highway Administration and Kentucky Transportation Cabinet*. 07/01/2019 to 6/30/2022. \$140,000
8. Harik, I.E., and **Peiris, N.A.** "Deployment of CatStrong TCW and TCF for Retrofit of Timber Pier Piles- (KHIT 128)", *Federal Highway Administration and Kentucky Transportation Cabinet*. 05/15/2019 to 6/30/2022. \$36,000
9. Harik, I.E., and **Peiris, N.A.** "Retrofit of Cracked Ends in PC I-Girders - (KHIT 127)", *Federal Highway Administration and Kentucky Transportation Cabinet*. 10/15/2018 to 6/30/2023. \$60,000
10. Harik, I.E., and **Peiris, N.A.** "Load Rating of Bridge Size Culverts (FRT 198)", *Federal Highway Administration and Kentucky Transportation Cabinet*. 05/01/2013 to 10/31/2019. \$700,000

Recent Technical Reports

1. **Peiris, A.** and Harik, I.E. (2023). "Rapid Pothole Repair in Concrete Bridge Decks," KTC-23-02/SPR21-607-1F, Kentucky Transportation Center. <https://doi.org/10.13023/ktc.rr.2023.02>
2. **Peiris, A.** and Harik, I.E. (2019). "Rapid Retrofit and Strengthening of Bridge Components," KTC-19-07/SPR13-465-1F, Kentucky Transportation Center. <https://doi.org/10.13023/ktc.rr.2019.07>
3. **Peiris, A.** and Harik, I.E. (2019). "Rapid Repair of Bridge Decks in Cold Weather," KTC-19-18/SPR12-436-1F, Kentucky Transportation Center. <https://doi.org/10.13023/ktc.rr.2019.18>
4. **Peiris, A.** and Harik, I.E. (2019). "Truss Bridge Rehabilitation Prioritization," KTC-18-13/SPR15-503-1F, Kentucky Transportation Center. <https://doi.org/10.13023/ktc.rr.2018.13>

Honors and Awards

- ACI Design Award, American Concrete Institute (ACI), 2021.
- Outstanding Presentation Award (Technical Paper- Bridge Slabs), Japan Concrete Institute Annual conference, Nagoya, Japan, 2005.

Professional Service

- Member, American Concrete Institute (ACI) Committee on Fiber-Reinforced Polymer Repair and Rehabilitation of Concrete Code (ACI 440S).
- Associate Member, American Concrete Institute (ACI) and American Society of Civil Engineers (ASCE) Joint Committee on Reinforced Concrete Columns (ACI 441).
- Associate Member, American Concrete Institute (ACI) Committee on Structural Health Monitoring and Instrumentation (ACI 444).

Professional Membership

- Member, American Society of Civil Engineers (ASCE)
- Member, American Concrete Institute (ACI)
- Member, Bridge Engineering Institute (BIE)