

REFERENCES

- [1] T. Wu, G. Liu, S. Fu, and F. Xing, “Recent progress of fiber-optic sensors for the structural health monitoring of civil infrastructure,” *Sensors (Switzerland)*, vol. 20, no. 16, pp. 1–25, 2020.
- [2] C. Kechavarzi, K. Soga, N. de Battista, L. Pelecanos, M. Elshafie, and R. Mair, *Distributed fibre optic strain sensing for monitoring civil infrastructure - A practical guide*. ICE, 2016. [Online]. Available: http://www.icebookshop.com/bookshop_main.asp?ISBN=9780727760555
- [3] A. Barrias, J. R. Casas, and S. Villalba, “A review of distributed optical fiber sensors for civil engineering applications,” *Sensors (Switzerland)*, vol. 16, no. 5, 2016.
- [4] J. M. López-Higuera, L. R. Cobo, A. Q. Incera, and A. Cobo, “Fiber optic sensors in structural health monitoring,” *Journal of Lightwave Technology*, vol. 29, no. 4, pp. 587–608, 2011.
- [5] H. N. Li, D. S. Li, and G. B. Song, “Recent applications of fiber optic sensors to health monitoring in civil engineering,” *Engineering Structures*, vol. 26, no. 11, pp. 1647–1657, 2004.
- [6] M. Majumder, T. K. Gangopadhyay, A. K. Chakraborty, K. Dasgupta, and D. K. Bhattacharya, “Fibre Bragg gratings in structural health monitoring-Present status and applications,” *Sensors and Actuators, A: Physical*, vol. 147, no. 1, pp. 150–164, 2008.
- [7] D. sheng Xu, J. hua Yin, and H. bei Liu, “A new measurement approach for deflection monitoring of large-scale bored piles using distributed fiber sensing technology,” *Measurement: Journal of the International Measurement Confederation*, vol. 117, no. March 2017, pp. 444–454, 2018.
- [8] G. Rajan, B. G. Prusty, and K. Iniewski, *Structural Health Monitoring of Composite Structures Using Fiber Optic Methods*. CRC Press, 2016.

- [9] Y. Muanenda, C. J. Oton, and F. di Pasquale, "Application of Raman and Brillouin Scattering Phenomena in Distributed Optical Fiber Sensing," *Frontiers in Physics*, vol. 7, no. October, pp. 1–14, 2019.
- [10] J.-M. Henault *et al.*, "Quantitative strain measurement and crack detection in RC structures using a truly distributed fiber optic sensing system," *Construction and Building Materials*, vol. 37, pp. 916–923, Dec. 2012.
- [11] T. Horiguchi, K. Shimizu, T. Kurashima, M. Tateda, and Y. Koyamada, "Development of a Distributed Sensing Technique Using Brillouin Scattering," *Journal of Lightwave Technology*, vol. 13, no. 7, pp. 1296–1302, 1995.
- [12] T. Kurashima, T. Horiguchi, and M. Tateda, "Thermal effects on the Brillouin frequency shift in jacketed optical silica fibers," *Applied Optics*, vol. 29, no. 15, p. 2219, 1990.
- [13] T. Kapa, A. Schreier, and K. Krebber, "63 km BOFDA for temperature and strain monitoring," *Sensors (Switzerland)*, vol. 18, no. 5, pp. 1–9, 2018.
- [14] L. Gao, B. Ji, G. Kong, X. Huang, M. Li, and A. H. Mahfouz, "Distributed measurement of temperature for PCC energy pile using BOFDA," *Journal of Sensors*, vol. 2015, 2015.
- [15] Q. Zhang and Z. Xiong, "Crack Detection of Reinforced Concrete Structures Based on BOFDA and FBG Sensors," *Shock and Vibration*, vol. 2018, 2018.
- [16] Y. Sun, X. Li, C. Ren, H. Xu, and A. Han, "Distributed fiber optic sensing and data processing of axial loaded precast piles," *IEEE Access*, vol. 8, pp. 169136–169145, 2020.
- [17] Z. Hao and W. Zhishen, "Performance evaluation of BOTDR-based distributed fiber optic sensors for crack monitoring," *Structural Health Monitoring*, vol. 7, no. 2, pp. 143–156, 2008.
- [18] A. Deif, B. Martín-Pérez, B. Cousin, C. Zhang, X. Bao, and W. Li, "Detection of cracks in a reinforced concrete beam using distributed Brillouin fibre sensors," *Smart Materials and Structures*, vol. 19, no. 5, 2010.

- [19] B. Glisic and D. Inaudi, "Development of method for in-service crack detection based on distributed fiber optic sensors," *Structural Health Monitoring*, vol. 11, no. 2, pp. 161–171, 2012.
- [20] B. Glisic and Y. Yao, "Fiber optic method for health assessment of pipelines subjected to earthquake-induced ground movement," *Structural Health Monitoring*, vol. 11, no. 6, pp. 696–711, 2012.
- [21] M. Enckell, B. Glisic, F. Myrvoll, and B. Bergstrand, "Evaluation of a large-scale bridge strain, temperature and crack monitoring with distributed fibre optic sensors," *Journal of Civil Structural Health Monitoring*, vol. 1, no. 1–2, pp. 37–46, 2011.
- [22] D. sheng Xu and J. hua Yin, "Analysis of excavation induced stress distributions of GFRP anchors in a soil slope using distributed fiber optic sensors," *Engineering Geology*, vol. 213, pp. 55–63, 2016.
- [23] Y. Sun, B. Shi, S. E. Chen, H. Zhu, D. Zhang, and Y. Lu, "Feasibility study on corrosion monitoring of a concrete column with central rebar using BOTDR," *Smart Structures and Systems*, vol. 13, no. 1, pp. 41–53, 2014.
- [24] Z. Broth and N. A. Hoult, "Dynamic distributed strain sensing to assess reinforced concrete behaviour," *Engineering Structures*, vol. 204, no. October 2019, p. 110036, 2020.
- [25] C. G. Berrocal, I. Fernandez, and R. Rempling, "Crack monitoring in reinforced concrete beams by distributed optical fiber sensors," *Structure and Infrastructure Engineering*, vol. 17, no. 1, pp. 124–139, 2021.
- [26] M. Quiertant *et al.*, "Deformation Monitoring of Reinforcement Bars with a Distributed Fiber Optic Sensor for the SHM of Reinforced Concrete Structures," *NDE 2012*, pp. 1–10, 2012.
- [27] S. Villalba and J. R. Casas, "Application of optical fiber distributed sensing to health monitoring of concrete structures," *Mechanical Systems and Signal Processing*, vol. 39, no. 1–2, pp. 441–451, 2013.

- [28] G. Rodríguez-Gutiérrez, J. R. Casas, S. Villalba-Herrero, and A. Barrias, “Monitoring of shear cracking in partially prestressed concrete beams by distributed optical fiber sensors,” *Maintenance, Monitoring, Safety, Risk and Resilience of Bridges and Bridge Networks - Proceedings of the 8th International Conference on Bridge Maintenance, Safety and Management, IABMAS 2016*, no. July, pp. 582–589, 2016.
- [29] L. Pelecanos and K. Soga, “The use of distributed fibre-optic strain data to develop finite element models for foundation piles,” *6th International Forum on Opto-electronic Sensor-based Monitoring in Geo-engineering*, 2017. [Online]. Available: <https://core.ac.uk/download/pdf/161918374.pdf>
- [30] C. Kechavarzi, L. Pelecanos, N. de Battista, and K. Soga, “Distributed fibre optic sensing for monitoring reinforced concrete piles,” *Geotechnical Engineering*, vol. 50, no. 2, pp. 43–51, 2019.
- [31] Y. Rui, C. Kechavarzi, F. O’Leary, C. Barker, D. Nicholson, and K. Soga, “Integrity testing of pile cover using distributed fibre optic sensing,” *Sensors (Switzerland)*, vol. 17, no. 12, 2017.
- [32] H. Pei, J. Yin, and Z. Wang, “Monitoring and analysis of cast-in-place concrete bored piles adjacent to deep excavation by using BOTDA sensing technology,” *Journal of Modern Optics*, vol. 66, no. 7, pp. 703–709, 2019.
- [33] T. Siwowski, M. Rajchel, R. Sienko, and L. Bednarski, “Smart monitoring of the FRP composite bridge with distributed fibre optic sensors,” *9th International Conference on Fibre-Reinforced Polymer (FRP) Composites in Civil Engineering, CICE 2018*, vol. 2018-July, no. July, pp. 918–925, 2018.
- [34] T. Siwowski, M. Rajchel, T. Howiacki, R. Sieńko, and Ł. Bednarski, “Distributed fibre optic sensors in FRP composite bridge monitoring: Validation through proof load tests,” *Engineering Structures*, vol. 246, no. May, 2021.
- [35] W. Liu, W. Zhou, and H. Li, “Bridge scour estimation using unconstrained distributed fiber optic sensors,” *Journal of Civil Structural Health Monitoring*, no. 0123456789, 2021.

- [36] C. Ye, L. J. Butler, M. Z. E. B. Elshafie, and C. R. Middleton, "Evaluating prestress losses in a prestressed concrete girder railway bridge using distributed and discrete fibre optic sensors," *Construction and Building Materials*, vol. 247, p. 118518, 2020.
- [37] S. Li and L. Sun, "Detectability of Bridge-Structural Damage Based on Fiber-Optic Sensing through Deep-Convolutional Neural Networks," *Journal of Bridge Engineering*, vol. 25, no. 4, p. 04020012, 2020.
- [38] C. Monsberger and W. Lienhart, "In-situ deformation monitoring of tunnel segments using high-resolution distributed fibre optic sensing," *SHMII 2017 - 8th International Conference on Structural Health Monitoring of Intelligent Infrastructure, Proceedings*, no. December, pp. 149–160, 2017.
- [39] N. de Battista, M. Elshafie, K. Soga, M. Williamson, G. Hazelden, and Y. S. Hsu, "Strain monitoring using embedded distributed fibre optic sensors in a sprayed concrete tunnel lining during the excavation of cross-passages," *Proceedings of the 7th International Conference on Structural Health Monitoring and Intelligent Infrastructure (SHMII7)*, 2015.
- [40] A. Minardo *et al.*, "Distributed fiber optic sensors for the monitoring of a tunnel crossing a landslide," *Remote Sensing*, vol. 10, no. 8, 2018.
- [41] Z. X. Li, G. Y. Hou, T. Hu, T. C. Zhou, and H. L. Xiao, "A study on the application of the distributed optical fiber sensing monitoring technology in the process of dismantling temporary tunnel shoring," *Arabian Journal of Geosciences*, vol. 13, no. 19, 2020.
- [42] M. Davis, N. A. Hault, and A. Scott, "Distributed strain sensing to assess corroded RC beams," *Engineering Structures*, vol. 140, pp. 473–482, 2017.
- [43] N. de Battista, R. Harvey, and N. Cheal, "Distributed fibre optic sensor system to measure the progressive axial shortening of a high-rise building during construction," *IABSE Conference, Vancouver 2017: Engineering the Future - Report*, pp. 1486–1493, 2017.

- [44] N. de Battista, C. Kechavarzi, N. Cheal, R. Harvey, and S. Wong, "Monitoring the axial shortening of principal tower using embedded distributed fibre optic sensors," *International Conference on Smart Infrastructure and Construction 2019, ICSIC 2019: Driving Data-Informed Decision-Making*, pp. 233–240, 2019.
- [45] A. Brault, N. A. Hoult, T. Greenough, and I. Trudeau, "Monitoring of Beams in an RC Building during a Load Test Using Distributed Sensors," *Journal of Performance of Constructed Facilities*, vol. 33, no. 1, p. 04018096, 2019.
- [46] Z. E. Broth and N. A. Hoult, "Field Monitoring of RC-Structures under Dynamic Loading Using Distributed Fiber-Optic Sensors," *Journal of Performance of Constructed Facilities*, vol. 34, no. 4, p. 04020070, 2020.
- [47] L. N. Wheeler, E. Pannese, N. A. Hoult, W. A. Take, and H. Le, "Measurement of distributed dynamic rail strains using a Rayleigh backscatter based fiber optic sensor: Lab and field evaluation," *Transportation Geotechnics*, vol. 14, pp. 70–80, 2018.
- [48] D. Milne, A. Masoudi, E. Ferro, G. Watson, and L. le Pen, "An analysis of railway track behaviour based on distributed optical fibre acoustic sensing," *Mechanical Systems and Signal Processing*, vol. 142, p. 106769, 2020.
- [49] W. K. Hsu, Y. L. Lee, and T. T. Kuan, "Brillouin frequency shift sensing technology used in railway strain and temperature measurement," *Applied Sciences (Switzerland)*, vol. 11, no. 15, 2021.
- [50] B. Ren, H. Zhu, Y. Shen, X. Zhou, and T. Zhao, "Deformation monitoring of ultra-deep foundation excavation using distributed fiber optic sensors," *IOP Conference Series: Earth and Environmental Science*, vol. 861, no. 7, 2021.
- [51] F. Buchmayer, C. M. Monsberger, and W. Lienhart, "Advantages of tunnel monitoring using distributed fibre optic sensing," *Journal of Applied Geodesy*, vol. 15, no. 1, pp. 1–12, 2021.

- [52] L. Luo, Y. Mei, N. de Battista, C. Kechavarzi, and K. Soga, “Repeatability precision error analysis of the distributed fiber optic strain monitoring,” *Structural Control and Health Monitoring*, vol. 28, no. 8, pp. 1–21, 2021.
- [53] fibrisTerre System GmbH, “fibrisTerre fTB series,” 2019.