

Publications significatives 2025

Centre de recherche sur les infrastructures en béton à l'Université Laval

1. Tran, D. A., Heroux, S., **Sorelli, L.**, Ftima, M. B., Conciatori, D., **Dupuis, C.**, & **Bernier-Lavigne, S.** (2025). A case study on the impact of fiber distribution on X-connections of complex-shaped UHPFRC footbridges cast with recyclable formwork. *Case Studies in Construction Materials*, 22, e04064.
2. **Breton, C.**, Blanchet, P., Amor, B., & Pomponi, F. (2025). A novel method to calculate SSP-consistent remaining carbon budgets for the building sector: A case study of Canada. *Building and environment*, 269, 112474.
3. Baret, E., **Fournier, B.**, **Bissonnette, B.**, Khaleghi, M., Courard, L., & Ranger, M. (2025). Assessment of additional ASR damage resulting from residual expansion tests using the DRI and SDT test methods. *Construction and Building Materials*, 489, 142325.
4. Kallel, A., Masmoudi, R., **Bissonnette, B.**, & Joanis, M. (2023, May). Bond Behavior of CFRP/Concrete Joint Under Fatigue Loading: Experimental Study and Analytical Investigation. In *Canadian Society of Civil Engineering Annual Conference* (pp. 53-65). Cham: Springer Nature Switzerland.
5. Abdoul S.B., Zhang Y., Sasai K., Conciatori D., Chouinard L., Zufferey, N., **Power, G.J.**, Sanchez T., and Chen, X. (2025). Bridge service life and impact of maintenance events on the structural state index. *Case Studies in Construction Materials*, e04766.
6. Tran, D. A., Heroux, S., **Sorelli, L.**, Ftima, M. B., Conciatori, D., **Dupuis, C.**, & **Bernier-Lavigne, S.** (2025). A case study on the impact of fiber distribution on X-connections of complex-shaped UHPFRC footbridges cast with recyclable formwork. *Case Studies in Construction Materials*, 22, e04064.
7. Khani, S., Conciatori, D., Chouinard, L., **Fournier, B.**, Esfahani, M. K., Bah, A. S., & Chen, X. (2025). Chloride Ingress in De-Icing Salt-Exposed Bridge: Numerical Modeling and Field Investigations. *Case Studies in Construction Materials*, e05003.
8. Khalaf, S., Abed, F., **El Refai, A.**, Roshan, N., & Hajiloo, H. (2025). Circular RC columns wrapped with PBO-FRCM and CFRP strengthening systems in a standard fire. *Fire Safety Journal*, 155, 104424.
9. Aka, C., Gagnon, M. H., & **Power, G. J.** (2025). Commodity Option Return Predictability. *Journal of Futures Markets*.
10. Champagne-Péladeau, L., Pasquier, P., Millette, D., & **Dupuis, J. C.** (2025). Delineation of the thermal plume associated with a standing column well

- system in a fractured aquifer using numerical modeling. *Geothermics*, 127, 103260.
11. Titon, B., **Duchesne, J., Fournier, B.**, and Rodrigues, A.: Development of a selective dissolution protocol for pyrrhotite quantification in sulfide-bearing concrete aggregates, EGU General Assembly 2025, Vienna, Austria, 27 Apr–2 May 2025, EGU25-13329, <https://doi.org/10.5194/egusphere-egu25-13329>, 2025.
 12. Qian, B., Tan, Y., **Power, G.**, & Mandal, A. (2025). Economic policy uncertainty, information production, and transparency. *International Review of Financial Analysis*, 103, 104203.
 13. Kandji, M., **Fournier, B., Duchesne, J.**, & Doucet, F. (2025). Effect of polishing time, mechanisms and mineralogy on the microtexture evolution and polishing resistance of pavement surface aggregates. *Construction and Building Materials*, 476, 141105
 14. Champagne, M., Rodum, E., Lindgård, J., **Fournier, B.**, Roy-Tremblay, M., Pedersen, B., **Bissonnette, B.** and Duchesne, C., 2025. Field and laboratory investigations on condition assessment of ASR-affected structures. *Progress in Engineering Science*, 100094.
 15. Elnassar, Z., Abed, F., **El Refai, A.**, & El-Maaddawy, T. (2025). FRCM confinement of concrete columns: a review of strength and ductility enhancements. *Composite Structures*, 119389.
 16. Boucher, S. P., Gagnon, M. H., & **Power, G.** (2022). Has Financialization Changed the Impact of Macro Announcements on Us Commodity Markets?. *Available at SSRN* 4009292.
 17. Assa, H., Grégoire, P., **Power, G. J.**, & Tandja-M, D. C. (2025). How Do Economic Variables Affect the Pricing of Commodity Derivatives and Insurance?. *Quantitative Risk Management in Agricultural Business*, 93.
 18. Medeiros, R., Bergmann, A., Olajide, O., Trottier, C., Sanchez, L., & **Fournier, B.** (2025). Impacts of anisotropy and exposure conditions on ASR-induced deterioration in columns from the Robert-Bourassa/Charest overpass after nearly 50 years of service. *Magazine of Concrete Research*, 1-14.
 19. Aljidda, O., Alnahhal, W., & **El Refai, A.** (2025). Influence of cut-out openings on the flexural behavior of one-way concrete slabs strengthened with NSM-FRP bars and EB-CFRP strips. In *Structures* (Vol. 79, p. 109547). Elsevier.
 20. **Pozzer, S.**, Ramos, G., Nooralishahi, P., Azar, E. R., **El Refai, A.**, López, F., ... & Maldague, X. (2025). Integration of thermographic inspection data with BIM for enhanced concrete infrastructure assessment. *Automation in Construction*, 171, 105965.

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25. do Rosário Martel, W. D. N., **Duchesne, J., & Fournier, B.** (2025). Microstructural and chemical characterization of glass powder and silica fume ternary concrete after seven years of alkali-silica reaction expansion exposure. *Construction and Building Materials*, 476, 141279.
26. Gomez, L., Perales, F., Multon, S., Socié, A., **Fournier, B.**, & Argouges, M. (2025). Numerical investigation of mechanisms affecting alkali-silica reaction advancement by reactive transport simulations. *Cement and Concrete Research*, 190, 107791.
27. Grégoire, P., **Power, G. J.**, & Tandja-M, D. C. (2025). On the packaging of infrastructure projects in a competitive bidding environment. *Transport Economics and Management*.
28. Miranda, M., Chapelet, M., Comeau, F. A., Raymond, J., **Dupuis, J. C.**, Pasquier, P., & Dezayes, C. On the Use of Thermal Response Tests for Deep Geothermal Exploration in Urban Areas: A Case-Study on the Greater Montreal (Canada). *Available at SSRN 5243455*.
29. do Rosário Martel, W. D. N., **Duchesne, J., & Fournier, B.** (2025). Optimization of microprobe analysis of cementitious materials incorporating glass powder under electron beam to avoid alkali migration. *CEMENT*, 19, 100132.
30. Khalaf, S., Abed, F., **El Refai, A.**, Alhoubi, Y., Ramzi, S., & Hajiloo, H. (2025). PBO-FRCM and CFRP strengthened reinforced concrete columns: In fire and post-fire behavior. *Construction and Building Materials*, 489, 142306.
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32. Abbadi, A., **El Refai, A.**, & Abou El Mal, H. (2025). Shear behavior of fiber-reinforced lightweight concrete beams reinforced with BFRP bars. *Construction and Building Materials*, 484, 141762.
33. Soliman, O. E., **El Refai, A.**, & **Sorelli, L.** (2025). Shear strengthening of RC beams with fabric-reinforced cementitious matrix: analytical modeling and machine learning approaches. *Composite Structures*, 119595.
34. **Duchesne, J.**, & Fernandes, I. (2025). Sources of Alkalis. In *Total Alkalis in Concrete—Contribution to Alkali-silica Reaction: State-of-the-Art Report of the RILEM Technical Committee 258-AAA WP3* (pp. 7-52). Cham: Springer Nature Switzerland.
35. Abutahnat, Y., **Sorelli, L.**, & **El Refai, A.** (2025). Tensile behavior of fiber-reinforced cementitious matrix with ultra-high-performance hybrid fiber-reinforced concrete (UHP-FRCM) with enhanced crack width control, fracture energy, and ultimate strength. *Construction and Building Materials*, 489, 142430.
36. Chen, Z., Dargahi, M., & **Sorelli, L.** (2025). The Effect of Relative Humidity on Creep Behavior of Cement Paste Microprism. *Materials*, 18(2), 406.
37. do Rosário Martel, W. D. N., **Duchesne, J.**, & **Fournier, B.** (2025). Understanding long-term ASR expansion in glass powder ternary concrete blends through accelerated solubility test. *Cement and Concrete Research*, 198, 108004.