# Xuande Chen, P. Eng., PhD

**ASSISTANT PROFESSOR**


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## WORK EXPERIENCE

**ASSISTANT PROFESSOR** — **Rimouski, QC, CANADA**
Université du Québec À Rimouski (UQAR) — *September 2022 - Present*

**POSTDOCTORAL RESEARCHER** — **Québec, QC, CANADA**
Université Laval — *December 2021 - August 2022*

**RESEARCH ASSISTANT** — **Québec, QC, CANADA**
Université Laval — *September 2017 - December 2021*

**TEACHING ASSISTANT** — **Québec, QC, CANADA**
Université Laval — *September 2017 - December 2021*

**VISITING RESEARCH SCHOLAR** — **Evanston, IL, USA**
Northwestern University — *August 2018 - March 2019*

**RESEARCH ASSISTANT** — **Gif-sur-Yvette, ÎLE-DE-FRANCE, FRANCE**
Laboratoire de Mécanique et Technologie Paris-Saclay — *September 2016 - June 2017*

## EDUCATION

**DOCTOR OF ENGINEERING (D.ENG.) IN CIVIL ENGINEERING** — *Dec 2021*
Université Laval, **Québec, Canada**

**MASTER OF SCIENCE (M.S.) IN STRUCTURE ENGINEERING** — *Jul 2017*
École Normale Supérieure Paris-Saclay, **Gif-sur-Yvette, France**

**MASTER OF ENGINEERING IN ROADS AND ENGINEERING STRUCTURES** — *Jul 2016*
École Spéciale Des Travaux Publics (ESTP), **Paris, France**

**BACHELOR OF SCIENCE (B.S.) IN CIVIL ENGINEERING** — *Jul 2014*
Wuhan University, **Wuhan, China**

## COURSES

- GCI-2003 Structural Analysis, Laval University
- GCI-2004 Concrete Structures, Laval University
- GCI-7071 Advanced Concepts in Mechanics of Deformable Solids, Laval University
- GEN28319 Structural Analysis, UQAR

- GEN38120 Design of Concrete Structures, UQAR
- GEN38220 Design of Steel Structures, UQAR
- GEN45321 Final Year Project in Engineering, UQAR

## SKILLS

- Teaching
- Reinforced concrete
- Durability of cementitious materials
- Programming
- Numerical Simulation
- Coastal Engineering
- Structural engineering
- High-performance and fiber-reinforced concrete
- Mathematical modeling
- Finite Element / Finite Volume Analysis
- Microclimate on coastal areas
- Steel Structures

## CERTIFICATIONS

- Engineer member of Ordres des Ingénieurs du Québec (OIQ)
- Membre of Digital Research Alliance of Canada
- Regular member of Canadian Society for Civil Engineering (CSCE)
- Member of Collectif de Recherche Appliquée aux Bioprocédés et à la chimie de l'Environnement (CRABE)
- Member of Centre de recherche sur les infrastructures en béton (CRIB)
- Reviewer of American Journal of Civil Engineering
- Reviewer of Archive of Civil and Mechanical Engineering
- Evaluator of FRQNT-Team fund
- Evaluator of Scholarship of Excellence for Foreign Students (PBEEE-FRQ)
- Evaluator of Natural Sciences and Engineering Research Council of Canada, Alliance fund

## LANGUAGES

- **French**
  **Bilingual**
- **English**
  **Bilingual**
- **Chinese (Mandarin)**
  **Native**
- **Japanese**
  **Conversational**

## GRANTS AND AWARDS

- NSERC Discovery grant, recipient and principal researcher (submitted), $12,500 seed funding over 1 year and $30,000 over 5 years ($162,500 total), 2024-2029.
- FRQNT-Relève for early-career professors grant, recipient and principal researcher (submitted), $40,000 for operations over 2 years and $25,000 for equipment over 1 year ($105,000 total), 2024-2027.
- NSERC New Frontier-Transformation grant, recipient and co-researcher (submitted), $3,000,000 over 6 years ($18,000,000 total), 2024-2030.
- Institutional Research Fund (FIR) UQAR, recipient and principal researcher, $10,000 over 1 year, 2024-2025.
- FRQNT-Équipe grant, recipient and co-researcher, $50,000 over 3 years ($150,000 total), 2023-2026.
- RDC-Hydro Quebec postdoctoral fellowship, $58,000 for 1 year, 2021-2022

- Laval University Faculty of Science and Engineering grant for graduate students with excellent profile, doctoral progress, oral exam, seminar I and seminar II, 2000, 500×9, 750, 1000, 1000 ($9,250 total), 2017-2021
- NSERC-CRSNG-Hydro Quebec full doctoral scholarship, $21,000 over 2 years ($42,000 total), 2019-2021.
- FRQNT international research internship scholarship for excellent graduate students, recipient, 15,000$, 2018.
- FRQNT-REGAL full doctoral scholarship, $21,000 over 2 years ($42,000 total), 2017-2019.

## PUBLICATIONS

- Chen, X., Conciatori, D., Sanchez, T. et al. (2024, submitted). Contribution to the sorption hysteresis study in UHPFRC: experimental adaptations and numerical modeling, Case Studies in Construction Materials.
- Bah, A.S., Chen, X. et al. (2024, accepted). Bridge Service Life and Impact of Maintenance Events on the Structural State Index, Case Studies in Construction Materials.
- Chen, X., Conciatori, D., Sanchez, T. et al. Numerical modeling of multi-ionic transport with/without electrical field applied in sound and microcracked ordinary and ultra-high-performance fiber-reinforced concrete. Archiv.Civ.Mech.Eng 23, 232 (2023). https://doi.org/10.1007/s43452-023-00765-w
- Vicky Turgeon-Malette, Xuande Chen, Abdoul Salam Bah, David Conciatori, Thomas Sanchez, Mohamed Cheikh Teguedy, Luca Sorelli, Chloride ion permeability of Ultra-high-performance fiber-reinforced concrete under sustained load, Journal of Building Engineering, Volume 66, 2023, 105842, ISSN 2352-7102, https://doi.org/10.1016/j.jobe.2023.105842.
- Xuande Chen, Thomas Sanchez, David Conciatori, Hicham Chaouki, Luca Sorelli, Brahim Selma, Mohamed Chekired, Numerical modeling of 2D hygro-thermal transport in unsaturated concrete with capillary suction, Journal of Building Engineering, Volume 45, 2022, 103640, ISSN 2352-7102, https://doi.org/10.1016/j.jobe.2021.103640.
- Chen, X., Bah, A.S., Conciatori, D., Sorelli, L., Selma, B., Chekired, M. (2023). Numerical Modeling of Water Transport in Ultra-High-Performance Fiber-Reinforced Concrete. In: Rossi, P., Tailhan, JL. (eds) Numerical Modeling Strategies for Sustainable Concrete Structures. SSCS 2022. RILEM Bookseries, vol 38. Springer, Cham. https://doi.org/10.1007/978-3-031-07746-3_9
- Chen, X., Conciatori, D., Gianluca C. et al. (2022). An Experimental Study on the Sorption in UHPFRC: Adaptation of the DVS Measurement Procedure. In: Pellegrino, C., Faleschini, F., Zanini, M.A., Matos, J.C., Casas, J.R., Strauss, A. (eds) Proceedings of the 1st Conference of the European Association on Quality Control of Bridges and Structures. EUROSTRUCT 2021. Lecture Notes in Civil Engineering, vol 200. Springer, Cham. https://doi.org/10.1007/978-3-030-91877-4_145
- Vicky Turgeon-Malette, Nathalie Kamileris, Samaneh Khani, David Conciatori, Xuande Chen, Thomas Sanchez (2023, accepted for publication). UHPFRC Permeability to Chloride under Service Load, International Workshop on Fiber Reinforced Concrete: from Design to Structural Applications, Arizona State University.
- Xuande Chen (2022), Modélisation numérique et étude expérimentale des comportements couplés de transport hygro-thermo- chimio-électrique des matériaux cimentaires, Thèse de Doctorat, Université Laval. http://hdl.handle.net/20.500.11794/71860
- Chen, X. et al. (2021). Effect of the temperature on the water transport by capillarity into the concrete porosity. 4th International RILEM conference on Microstructure Related Durability of Cementitious Composites (Microdurability2020), TU Delft, https://repository.tudelft.nl/islandora/object/uuid:7e2a72cb-fddd-4b6f-8d74-15b3ca017e99?collection=research

## NEWS

- Development of a special concrete tensile-test setup at Laval University with Prof. David Conciatori, and the work interviewed by a Canadian Journal "Le Journal de Québec", March 2023. https://www.journaldequebec.com/2023/03/13/le-sel-ronge-nos-ponts-en-acier-et-en-beton