



**Name and Academic Rank:** Mohamad El Dandachy, Assistant Professor, (full time), Faculty of Engineering

**1. Education: Degrees, Discipline, Institution and Date:**

- Ph.D. Civil Engineering – Materials – University of Grenoble Alpes, Grenoble, France, 2016
- M.S in Civil Engineering – Geomechanics – Joseph Fourier University, Grenoble, France, 2013
- M.E in Civil Engineering – Structure – Lebanese University, Tripoli, Lebanon, 2013

**2. Work experience**

- Beirut Arab University, Assistant Professor, September 2017 – present, Full Time
- University of Grenoble Alpes, Grenoble, France, 2017, Postdoctoral researcher, 2016-2017
- Joseph Fourier University, Grenoble, France, 2017, Lecturer, Part-time, 2014-2017
- University Institute of Technology, Grenoble, France, 2017, Lecturer, Part-time, 2014-2017
- Polytech University, Grenoble, France, 2017, Lecturer, Part-time, 2014-2017

**3. Honors and Awards:**

- Excellent presentation award, in the International Conference on Civil, Architectural and Environmental Engineering 2023.
- Postdoc research and PhD thesis funded by national project MACENA (Study of the pre-stressed concrete containment vessel of a nuclear power plant during a severe accident), main contributors are EDF (Electricity of France) and CEA (French Alternative Energies and Atomic Energy Commission, 2013-2017).
- MSc honours received from UGA committee for completing the first semester ranked first among 18 students, 2013.
- Competitive scholarship for pursuing higher studies, “Predoc”, Joseph Fourier University, 2012-2013

**4. Service activities**

**Beirut Arab University (2017 - Present):**

- Teaching: Mechanics of Materials, Construction Materials I and II, Concrete Technology, Project Planning and Management, Surveying I & II, Linear Algebra, Structures I and II, Concrete Technics and Repair, Quality Control in Concrete Construction.
- Administration: Student advising and mentoring, course offering, construction material lab development.
- Advising and supervision: final year projects advising, internships supervision.

**Joseph Fourier University (2015- 2017):**

- Teaching: Metallic Construction/Structures, Reinforced Concrete, Solids and Fluid Mechanics, Modelling of Structures.
- Master 2 research projects advising:
  - Hydro-mechanical behaviour of concrete construction joints: Experimental study.
  - Hydro-mechanical behaviour of a representative structural volume of a reinforced concrete containment vessel of a nuclear power plant: Numerical study.



- Evolution of the intrinsic permeability of concrete after undergoing thermo-mechanical loading in compression.
- Evolution of transfer properties of steel-rebar concrete interface during push-in tests.

**University Institute of Technology (2014- 2016):**

- Teaching: Mathematics MAT1, Mathematics MAT2, Displacements in Structures.

**Polytech University (2014- 2015):**

- Teaching: Concrete lab.

**5. Research Interests**

- Thermo-hydro-mechanical behavior of concrete
- Experimental testing of construction materials: Geopolymer concrete, mortar, bond properties, reinforced concrete, mechanical and durability properties.

**6. International Scientific Activities and Research Cooperation**

Research Cooperation with the Université Centrale Lille, University of Wolverhampton and United Arab Emirates University.

**7. National Research Cooperation**

Research Cooperation with the University of Balamand.

**8. Principal publications and presentations:**

**9.1 Journal Publications**

1. Mohamad Ali, Mohamad Ezzedine el dandachy, Ahmad ellakany, Dynamic Response of Steel-concrete Beams with Partial Interaction Due To Moving Loads, Journal of Science and Construction, ISSN: 2789-7605/ Vol.4 No.4, 2023.
2. Hachem, Y.; Ezzedine El Dandachy, M.; Khatib, J. M. Physical, Mechanical and Transfer Properties at the Steel-Concrete Interface: A Review. Buildings 2023, 13 (4). <https://doi.org/10.3390/buildings13040886>.
3. Bouhjiti E, Ezzedine El Dandachy M, Briffaut M, Dufour F, Baroth J, Dal Pont S., New continuous strain-based description of concrete's damage-permeability, International Journal for Analytical and Numerical Methods in Geomechanics, 2018, DOI: 10.1002/nag.2808.
4. Ezzedine El Dandachy M, Briffaut M, Dal Pont S, Dufour F. Induced anisotropic gas permeability of concrete due to coupled effect of drying and temperature, Key Engineering Materials, 711: 871-878, 2016, DOI: 10.4028/www.scientific.net/KEM.711.871.
5. Ezzedine El Dandachy M, Briffaut M, Dufour F, Dal Pont S. An original semi-discrete approach to assess gas conductivity of concrete structures, International Journal for Analytical and Numerical Methods in Geomechanics, 2016, DOI: 10.1002/nag.2655.

**9.2 Papers Book Section**

None

**9.3 Conference Proceedings**

1. Mohamad Ezzedine El Dandachy, Lovey Hassoun, Jamal M Khatib, Effect of Elevated Temperatures on the Mechanical Properties of Metakaolin-based



- Geopolymer Mortars, 4th International Turkish World Engineering and Science Congress, Antalya, Turkey, 2nd of December 2023.
2. Jamal M El-Khatib, Mohamad El Dandachy, Amira A. Hachem, Marah M. Abou Ali, Ahmad F. Mustafa, Investigation of the Bond Strength of Metakaolin-based Geopolymer Mortar as a Repair Material, International Conference on Civil, Architectural and Environmental Engineering (ICCAEE 2023), November 17-19, 2023.
  3. Hassan Ghanem, Ayman Trad, Mohamad El Dandachy, Adel Elkordi, Effect of Wet-Mat Curing Time on Chloride Permeability of Concrete Bridge Decks, The Official International Congress of the Soil-Structure Interaction Group in Egypt (SSIGE), 2018, DOI: 10.1007/978-3-030-01932-7\_16.
  4. Hassan Ghanem, Yehia Obeid, Ayman Trad, Mohamad El Dandachy, The Impact of Steel Fibers on the Properties of Self Compacting Concrete, The Official International Congress of the Soil-Structure Interaction Group in Egypt (SSIGE), 2018, DOI: [https://doi.org/10.1007/978-3-030-01932-7\\_12](https://doi.org/10.1007/978-3-030-01932-7_12)
  5. Ezzedine El Dandachy M, Briffaut M, Dal Pont S. and Dufour F. Effect of creep in traction and temperature on concrete permeability, Congrès Français de Mécanique, Lille, 28 August - 1 September, 2017.
  6. Ezzedine El Dandachy M, Briffaut M, Dufour F, Dal Pont S. Numerical coupling between mechanical state and permeability for concrete applied on a 3D splitting test, Alert Workshop 2016, 3-5 October 2016 Aussois, France.
  7. Ezzedine El Dandachy M, Briffaut M, Dufour F, Dal Pont S. Numerical coupling between damage and gas permeability for concrete applied on a 3D splitting test, Proceeding of Coupled Problems, Eds. Schrefler B., Oñate E. and Papadrakakis M., Venice, 18-20 May, 2015.
  8. Ezzedine El Dandachy M, Briffaut M, Dufour F, Dal Pont S. Coupling by means of strong discontinuity approach between crack opening and gas permeability for concrete, Congrès Français de Mécanique, Lyon, 24-28 August, 2015.
  9. Dufour F, Ezzedine El Dandachy M, Briffaut M, Dal Pont S. Coupling between cracking and permeability to assess leakage rate of concrete structures, The Fifteenth International Conference on Civil Structural and Environmental Engineering Computing, Prague, 1-4 September, 2015.
  10. Briffaut M, Ezzedine El Dandachy M, Dal Pont S, Dufour F. Permeability analysis of the interface between concrete and rebars during push in test, Strategies for Sustainable Concrete Structures, Rio De Janeiro, 14-16 December, 2015.
  11. Ezzedine El Dandachy M, Dufour F, Tixier A, De Mengin M. Benchmark de capteurs de déformations basés sur des fibres optiques avec réseaux de Bragg pour des structures en béton armé, 'Annales du Bâtiment et des Travaux Publics, Congrès Diagnostics, Toulouse, 19-20 March, 2014.