

CURRICULUM VITAE

Name: Walid MAHERZI

Position: Assistant professor at IMT Nord Europe

Address: 19, rue de la Fontaine
59151 Bugnicourt
France

Phone: (+33) 6 95 14 95 34

E-mail: walid.maherzi@imt-nord-europe.fr

EDUCATION:

2023	University of Lille - France Habilitation to conduct researches in Civil Engineering	Lille, France
2013	University of Normandy – France PhD Degree in Materials Chemistry (Advisor: Prof. M. BOUTOUIL)	Caen, France
2009	University of Lyon 1- Claude Bernard M. S. Degree in Civil Engineering (Advisor: Prof. P. Hamelin)	Lyon, France
2007	National School of Public Works Engineering Degree in Public Works, Rank: First	Algiers, Algeria

APPOINTMENTS:

2017-Present	Assistant Professor and Head of the Analytical Testing and Observation Unit, Materials and Processes Research and Innovation Center, Mines-Telecom Institute Lille, France
2013-2017	Post-doctoral in civil engineering, Materials and Processes Research and Innovation Center, Mines-Telecom Institute Lille, France
2009-2012	Ph.D. student in civil engineering College of Construction Technology–ESITC Caen-University of Normandy, France

PUBLICATIONS:

Refereed Journal Papers

1. Sekkal W., Zaoui A., **Maherzi W.**, Benzerzour, M., & Abriak, N. E. (2024). Coupled effect of elevated thermal exposure and nanochannel confined water on the phase transformations and mechanical changes in calcium silicate hydrates paste
2. Bellara, S., **Maherzi, W.**, Mezazigh, S., & Senouci, A. (2024). Mineral waste valorization in road subgrade construction: Algerian case study based on technical and environmental features. *Case Studies in Construction Materials*, e02764.
3. Kleib, J., Lesueur, D., **Maherzi, W.**, & Benzerzour, M. (2024). Carbonation of a lime treated soil subjected to different curing conditions. *Transportation Geotechnics*, 101174.
4. Abriak, Y., Chu, D. C., **Maherzi, W.**, Benzerzour, M., & Rivard, P. (2023). Influence of fine recycled concrete aggregates use on the hydration kinetics and mechanical–microstructural properties of hydrated cement: Experimental and numerical approaches. *Construction and Building Materials*, 408, 133769.
5. Mahfoud, E., Ndiaye, K., **Maherzi, W.**, Aggoun, S., Benzerzour, M., & Abriak, N. E. (2023). Mechanical properties and shrinkage performance of one-part-geopolymer based on fly ash and micronized dredged sediments. *Developments in the Built Environment*, 16, 100253.

6. Mahfoud, E., **Maherzi, W.**, Ndiaye, K., Benzerzour, M., Aggoun, S., & Abriak, N. E. (2023). Mechanical and microstructural properties of just add water geopolymer cement comprised of Thermo-Mechanicalsynthesis Sediments-Fly ash mix. *Construction and Building Materials*, 400, 132626.
7. Simba, C. M., Lemelin, E., Masson, E., Senouci, A., & **Maherzi, W.** (2023). A Data Processing Methodology to Analyze Construction and Demolition Dynamics in the European Metropolis of Lille, France. *Buildings*, 13(10), 2671.
8. Mkahal, Z., **Maherzi, W.**, Mamindy-Pajany, Y., Bouzar, B., & Abriak, N. E. (2023). Development of a low-carbon binder based on raw, ground, and carbonated waste paper fly ash. *Sustainable Materials and Technologies*, e00650.
9. **Maherzi, W.**, Ennahal, I., Bouaich, F. Z., Benzerzour, M., Rais, Z., Mamindy-Pajany, Y., & Abriak, N. E. (2023). Assessment of Dynamic Surface Leaching of Monolithic Polymer Mortars Comprised of Wastes. *Materials*, 16(6), 2150.
10. Belayali, F., **Maherzi, W.**, Benzerzour, M., & Abriak, N. E. (2023). Influence of the physical and chemical characteristics of sediment fillers on the properties of mastic asphalt. *Powder Technology*, 118393.
11. Abriak, Y., **Maherzi, W.**, Benzerzour, M., Senouci, A., & Rivard, P. (2023). Valorization of Dredged Sediments and Recycled Concrete Aggregates in Road Subgrade Construction. *Buildings*, 13(3), 646.
12. Zeraoui, A., **Maherzi, W.**, Benzerzour, M., Abriak, N. E., & Aouad, G. (2023). Development of Flash-Calcined Sediment and Blast Furnace Slag Ternary Binders. *Buildings*, 13(2), 333.
13. Bouaich, F. Z., **Maherzi, W.**, Benzerzour, M., Taleb, M., Abriak, N. E., Rais, Z., & Senouci, A. (2022). Mortar mixing using treated wastewater feasibility. *Construction and Building Materials*, 352, 128983.
14. Brahim, M., Ndiaye, K., Aggoun, S., & **Maherzi, W.** (2022). Valorization of Dredged Sediments in Manufacturing Compressed Earth Blocks Stabilized by Alkali-Activated Fly Ash Binder. *Buildings*, 12(4), 419.
15. Belayali, F., **Maherzi, W.**, Benzerzour, M., Abriak, N. E., & Senouci, A. (2022). Compressed Earth Blocks Using Sediments and Alkali-Activated Byproducts. *Sustainability*, 14(6), 3158.
16. Larbi, S., Khaldi, A., **Maherzi, W.**, & Abriak, N. E. (2022). Formulation of compressed earth blocks stabilized by glass waste activated with naoh solution. *Sustainability*, 14(1), 102.
17. Bouaich, F. Z., **Maherzi, W.**, El-Hajjaji, F., Abriak, N. E., Benzerzour, M., Taleb, M., & Rais, Z. (2022). Reuse of treated wastewater and non-potable groundwater in the manufacture of concrete: major challenge of environmental preservation. *Environmental Science and Pollution Research*, 29, 146-157.
18. Mkahal, Z., Mamindy-Pajany, Y., **Maherzi, W.**, & Abriak, N. E. (2022). Recycling of mineral solid wastes in backfill road materials: technical and environmental investigations. *Waste and Biomass Valorization*, 13(1), 667-687.
19. Bellara, S., Hidjeb, M., **Maherzi, W.**, Mezazigh, S., & Senouci, A. (2021). Optimization of an eco-friendly hydraulic road binders comprising clayey dam sediments and ground granulated blast-furnace slag. *Buildings*, 11(10), 443.
20. Mahamat Ahmat, A., **Maherzi, W.**, Le Milbeau, C., Benzerzour, M., & Abriak, N. E. (2021). Modified Red Muds and Slag Based Hydraulic Binders for Zn Removal: A Matrix-Spiking Approach Applied on Clayey Sediments. *Minerals*, 11(11), 1189.
21. Hadj Sadok, R., **Maherzi, W.**, Benzerzour, M., Lord, R., Torrance, K., Zambon, A., & Abriak, N. E. (2021). Mechanical properties and microstructure of low carbon binders manufactured from calcined canal sediments and ground granulated blast furnace slag (GGBS). *Sustainability*, 13(16), 9057.
22. Bouchikhi, A., **Maherzi, W.**, Benzerzour, M., Mamindy-Pajany, Y., Peys, A., & Abriak, N. E. (2021). Manufacturing of low-carbon binders using waste glass and dredged sediments: Formulation and performance assessment at laboratory scale. *Sustainability*, 13(9), 4960.
23. Bouchikhi, A., Mamindy-Pajany, Y., **Maherzi, W.**, Albert-Mercier, C., El-Moueden, H., Benzerzour, M., & Abriak, N. E. (2021). Use of residual waste glass in an alkali-activated binder–Structural characterization, environmental leaching behavior and comparison of reactivity. *Journal of Building Engineering*, 34, 101903.

24. Moudjari, M., Marouf, H., Muhamad, H., Chaalal, O., Mequignon, M., **Maherzi, W.**, & Benzerzour, M. (2021). Using Local Materials to Optimize the Eco-design of a Resilient Urban Environment in Sustainable Urban Project Process.
25. Ennahal, I., **Maherzi, W.**, Benzerzour, M., Mamindy, Y., & Abriak, N. E. (2021). Performance of lightweight aggregates comprised of sediments and thermoplastic waste. *Waste and Biomass Valorization*, 12, 515-530.
26. Zeraoui, A., Benzerzour, M., **Maherzi, W.**, Mansi, R., & Abriak, N. E. (2020). New software for the optimization of the formulation and the treatment of dredged sediments for utilization in civil engineering. *Journal of Soils and Sediments*, 20, 2709-2716.
27. Wang, D., Wang, H., Larsson, S., Benzerzour, M., **Maherzi, W.**, & Amar, M. (2020). Effect of basalt fiber inclusion on the mechanical properties and microstructure of cement-solidified kaolinite. *Construction and Building Materials*, 241, 118085.
28. **Maherzi, W.**, Ennahal, I., Benzerzour, M., Mamindy-Pajany, Y., & Abriak, N. E. (2020). Study of the polymer mortar based on dredged sediments and epoxy resin: Effect of the sediments on the behavior of the polymer mortar. *Powder Technology*, 361, 968-982.
29. Bouchikhi, A., Benzerzour, M., Abriak, N. E., **Maherzi, W.**, & Mamindy-Pajany, Y. (2019). Study of the impact of waste glasses types on pozzolanic activity of cementitious matrix. *Construction and Building Materials*, 197, 626-640.
30. Ennahal, I., **Maherzi, W.**, Mamindy-Pajany, Y., Benzerzour, M., & Abriak, N. E. (2019). Eco-friendly polymers mortar for floor covering based on dredged sediments of the north of France. *Journal of Material Cycles and Waste Management*, 21, 861-871.
31. Mkaouar, S., **Maherzi, W.**, Pizette, P., Zaitan, H., & Benzina, M. (2019). A comparative study of natural Tunisian clay types in the formulation of compacted earth blocks. *Journal of African Earth Sciences*, 160, 103620.
32. Marouf, H., Semcha, A., Mahmoudi, N., Bouhamou, N., Benzerzour, M., & **Maherzi, W.** (2018). Experimental study on the reuse of a dredging sludge from west of Algeria in brick fabrication. *Journal of Materials and Engineering Structures*
33. **Maherzi, W.**, Benzerzour, M., Mamindy-Pajany, Y., van Veen, E., Boutouil, M., & Abriak, N. E. (2018). Beneficial reuse of Brest-Harbor (France)-dredged sediment as alternative material in road building: laboratory investigations. *Environmental technology*, 39(5), 566-580.
34. Scribot, C., **Maherzi, W.**, Benzerzour, M., Mamindy-Pajany, Y., & Abriak, N. E. (2018). A laboratory-scale experimental investigation on the reuse of a modified red mud in ceramic materials production. *Construction and Building Materials*, 163, 21-31.
35. Benzerzour, M., **Maherzi, W.**, Amar, M. A., Abriak, N. E., & Damidot, D. (2018). Formulation of mortars based on thermally treated sediments. *Journal of Material Cycles and Waste Management*, 20, 592-603.
36. Benzerzour, M., Sebaibi, N., **Maherzi, W.**, Abriak, N. E., & Sebaibi, Y. (2017). A bibliography on the analytical model of the mechanical behaviour in uniaxial tension of fibre concrete: Application to concrete reinforced with fibres and powders from recycling of thermoset composite materials. *Construction and Building Materials*, 131, 214-228.
37. Saussaye, L., Hamdoun, H., Leleyter, L., Van Veen, E., Coggan, J., Rollinson, G., **Maherzi, W.**, Boutouil, M. & Baraud, F. (2016). Trace element mobility in a polluted marine sediment after stabilisation with hydraulic binders. *Marine Pollution Bulletin*, 110(1), 401-408.
38. **Maherzi, W.**, & Abdelghani, F. B. (2014). Dredged marine sediments geotechnical characterisation for their reuse in road construction. *Engineering Journal*, 18(4), 27-37.

Refereed Conference Papers:

1. **Maherzi, W.**, Benzerzour, M., Abriak, N. E., & Senouci, A. (2023, February). Marine dredged sediments valorisation in self-compacting concretes. In 2nd International Conference on Civil Infrastructure and Construction (CIC 2023).

2. **Maherzi, W.**, Benzerzour, M., Abriak, N. E., & Senouci, A. (2023, February). Self-compacting Backfills using Fly Ash and Dredged Marine Sediments for Public Work Applications. In 2nd International Conference on Civil Infrastructure and Construction (CIC 2023).
3. Belayali, F, **Maherzi, W**, Abriak, N. E., & Benzerzour, M. (2022, June). Experimental study of the use dredged sediments in a hydrocarbon matrix. In 9th International Conference on Engineering for Waste and Biomass Valorisation (WasteEng2022).
4. Bellara, S, **Maherzi, W**, Thiery, V, Mezazigh, S & Hidjeb, M. (2022, June). Use of ternary binder based on clayey calcined sediments for the stabilization of mineral waste. In 9th International Conference on Engineering for Waste and Biomass Valorisation (WasteEng2022).
5. Bouchikhi, A., Benzerzour, M., Abriak, N. E., **Maherzi, W.**, & Pajany, Y. M. (2019). Waste glass reuse in geopolymer binder prepared with metakaolin. *Academic Journal of Civil Engineering*, 37(2), 539-544.
6. Bouchikhi, A., **Maherzi, W.**, Benzerzour, M., Mamindy-Pajany, Y., & Abriak, N. E. (2019, May). Waste glass reuse in geopolymer binder prepared by combining fly ash and metakaolin. In *Resources and Energy from Waste Proceedings*.
7. Dubois, V., Wirquin, E., **Maherzi, W.**, & Benzerzour, M. (2016, July). Backfilling grout including a major part of fine sediments. In 5th International Symposium on Sediment Management.
8. Becquart, F., **Maherzi, W.**, Deboffe, C., & Abriak, N. E. (2015, June). Properties of upgraded aggregates from MSWI bottom ashes and beneficial use in road engineering. In WASCON Conference, Resource Efficiency in Construction.
9. Benzerzour, M., Maherzi, W., Abriak, N., & Boutouil, M. (2014). Road material's design based on marine dredging sediment and sand, treated with hydraulic road binders. *Journal of Catalytic Materials and Environment*.
10. Kasmi, A., Benzerzour, M., Abriak, N. E., & Maherzi, W. (2014). Study of physico-chemical and environmental characterization of raw sediment and dehydrated sediment by the addition of a flocculent. *Journal of Catalytic Materials and Environment*.
11. Maherzi, W., Ben Abdelghani, F., & Boutouil, M. (2011). Sustainable environmental treatment and reuse of dredged marine sediments in road construction. In 17th World Congress of the International Solid Waste Association (pp. 17-20).

RESEARCH GRANTS

External Grants

2020-2023	PI (€1,130,000.00) funded by European Regional Development Fund. Topic: Valorization of sediments as secondary raw materials in road construction.
2020-2022	PI (€560,000.00) funded by European Regional Development Fund. Topic: Valorization of sediments in the formulation of concrete for roadways.
2018-2022	PI (€1,190,00.00) funded by European Regional Development Fund. Topic: Valorization of sediments as filler in sealing material formulations.
2017-2023	PI (€660,000.00) funded by Interreg European program Topic: Sediment Uses as Resources in Circular and Territorial Economies
2016-2020	PI (€500,000.00) funded by Interreg European program Topic: Using Sediment as a Resource
2016-2019	PI (€791,000.00) funded by European Regional Development Fund. Topic: Recycling mineral wastes as mineral charges in polymer mortar formulations
2013-2019	PI (€1,290,000.00) funded by European Regional Development Fund. Topic: Recycling mineral wastes as aggregates in concrete formulations
2013-2016	PI (€590,000.00) funded by Alteo company

- Topic:** Red mud reuse in construction & building materials (bricks, tiles and lightweight aggregates)
- 2012-2014 PI (€300,000.00) funded by Eiffage TP et Prefer Nord company
Topic: Co-valorization of bottom ash from (MSWI) and deconstruction waste (C&DW) as base course for an experimental road at Fretin (Nord) - Mechanical and environmental monitoring
- 2010-2013 PI (€1,100,000.00) funded by Interreg European program
Topic: Sustainable Environmental Treatment and Reuse of Marine Sediment: Road monitoring.

TEACHING AND STUDENT LEARNING

Course Development and/or Revision

IMT Nord Europe, Douai, 2017-Present.

- Geotechnical engineering: foundation optimization, soil reinforcement, embankment stability
- Earthquake engineering
- Circular economy applied to construction
- Practical geotechnical work

Builders, Engineering School, Caen, 2020-Present

- Geotechnical engineering: foundation optimization, soil reinforcement, embankment stability
- Railway networks

CESI, Engineering School, Arras, 2021-Present

- Geotechnical engineering: foundation optimization, soil reinforcement, embankment stability
- Stability of structures
- Vibratory phenomena

Evidence of Student Learning

Graduate Dissertation/Thesis/Projects

1. C. SCRIBOT, 2017. Study of the potential reuse of Bauxaline® in construction and remediation materials.
2. I. ENNAHAL, 2019. Valorization of dredged sediments in polymer mortars
3. A. BOUCHIKHI, 2020. Optimization of glass and sediment waste valorization in ecofriendly binders.
4. A. ZERAOUI, 2020. Operational approach for sustainable management of dredged sediments in civil engineering.
5. S. MKAOUAR, 2021. Study of the possibilities to use local materials for the fabrication of fired bricks.
6. Z. MKAHAL, 2021. Co-valorization of alternative materials in road application: technical and environmental feasibility.
7. F. BELAYALI, 2021. Valorization of mineral wastes in sealing asphalt mixtures.
8. S. BELLARA, 2022. Structures built on soil reinforced with co-valorized mixes.
9. S. LARBI, 2022. Use of local materials for the manufacture of construction materials.
10. Y. ABRIAK, 2023. Sustainability of building materials with low environmental impact.
11. F. BOUAICH, 2023. Optimizing the use of treated wastewater in cementitious materials.
12. E. MAHFOUD, 2023. optimization of eco-binder/geopolymer based on industrial by-products.
13. M. BEKKADOUR, 2024. Influence of exposition conditions on the corrosion of concrete comprised on baryte aggregates.
14. K. BOUSSAI, 2024. Characterization and valorization of Cretaceous-Eocene nano-clays.
15. A. ZEGGAR, 2025. Low-carbon concrete for the prefabrication sector: Impact of material and process selection.

Undergraduate Research

1. Release kinetics of inorganic contaminants from eco-materials derived from waste recovery, 2023.
2. Co-valorization of recycled concrete aggregates (GBR) and dredged sediments: application in road techniques, 2022.
3. Implementation of an experimental system for optimizing the granular skeleton in concrete formulations, 2021.
4. Valorization of sediments in the formulation of self-placing concrete (BAP), exposed to aggressive environments, 2021.
5. Life-cycle analysis of a product derived from waste recovery in a global Circular Economy context, 2021.
6. Recycling of glass fiber waste in cementitious matrix applications, 2020.
7. Optimization of the mix design of an eco-material based on recycled materials and suitable characterization techniques, 2020.
8. Co-valorization of dredged sediments and glass waste in road techniques, 2019.
9. Recovery of industrial by-products for civil engineering applications, 2019.
10. Recovery of dredged sediments in the formulation of lightweight concrete, 2018.

SERVICE

Department, College, and University

2019-Present	Responsible, work-linked training in civil engineering and railway systems.
2017-Present	Responsible of training for products and processes in the concrete industry.
2020-Present	Responsible of the Analytical and Observation Testing Unit (XRF, XRD, SEM, etc.).
2020-present	Member of the Steering Committee board of the center of Materials and Process.
2020-present	Member of the Research Committee board of the center Materials and Process.
2020-present	Member of the Quality Audit committee board of the center Materials and Process.

Professional/Academic Discipline

2023-Now	Guest Editor Special Issue of Journal of Asian Architecture and Building Engineering
2023-Now	Reviewer for Journal of Advanced Research in Applied Mechanics
2023-Now	Reviewer for Journal of Results in Engineering, Elsevier
2021-Now	Guest Editor, Special Issue of Buildings "Sustainable and Green Construction Materials"
2021-Now	Reviewer for Journal of Buildings, MDPI
2021-Now	Reviewer for Materials, MDPI
2021-Now	Reviewer for Sustainability, MDPI
2021-Now	Reviewer for Waste and Biomass Valorization, Springer
2019-Now	Reviewer for American Journal of Building Engineering, Elsevier
2016-Now	Reviewer for Journal of Construction and Building Materials, Elsevier
2017-Now	Member of the International organization Committee for the International Symposium of Sediment Management (I2SM), France.

HONORS AND AWARDS

2019	First prize in the BQR annual best proposed subject for student internship (LGCgE). Project entitled "Life Cycle Analysis of low carbon binder based on flash calcined mineral wastes".
2009	Full Scholarship from the Interreg Europe program (Interreg) to study for PhD degree in Doctoral school of Material Chemistry at the University of Normandy-Caen.
2002-2007	First Rank in Civil Engineering at National School of Public Works (ENSTP), Algiers, Algeria.