Email
ali.aghajanian@unican.es

ORCID
0000-0002-1841-7934

Google Scholar
scholar.google.com/aghajanian

Linkedin
linkedin.com/in/aghajanian

CURRICULUM VITAE

Ali Aghajanian Sabbagh

Ph.D. in Civil engineering & Researcher

I am the holder of a Doctorate degree from the University of Cantabria, awarded upon the successful completion of my thesis entitled "Micro and Macro-Effects of Additions on Reinforced Siderurgical Aggregate Concrete." Presently, I am employed as a structural engineer overseeing the construction of the Toranj Coastal Hotel located on Kish Island, Iran. Given the geographical location and unique environmental factors, such as ambient temperatures ranging from 32 to 40 degrees Celsius, meticulous attention to detail is imperative. Consequently, the utilization of laboratory equipment for monitoring and regulating the concrete pouring process, coupled with conducting concrete tests to ascertain the attainment of requisite strength parameters, is indispensable. Leveraging my research background and proficiencies in concrete technology, I am gratified to have been entrusted with this role. My prior engagement involved a dedicated tenure as a Researcher within the Laboratory of the Science and Engineering of Materials Group (LADICIM) at the Civil Engineering School of the University of Cantabria. This prestigious institution has served as both my academic and professional sanctuary throughout my progression as a Ph.D. Candidate. My pursuits, both academic and professional, have been singularly focused on scrutinizing the nuanced behaviors of concrete across a spectrum of scenarios.

The cornerstone of my academic background, rooted within the University of Cantabria (UC), lies in the exploration of industrial waste, by-products, and construction waste for the purpose of generating recycled aggregate destined for concrete applications, thereby advancing the cause of eco-concrete production. An eminent achievement in my academic pursuits includes a recent investigation (VT) into the effects of critical and supercritical carbon dioxide on the carbonization process of recycled aggregates, coupled with a comprehensive analysis of the behavior exhibited by these aggregates in the Interfacial Transition Zone (ITZ) when interacting with cement paste. Beyond my academic contributions, I have also been engaged in pedagogical activities, contributing my knowledge and insights in the field of civil engineering to university-level education.

I additionally hold positions as an editorial board member and reviewer for distinguished civil engineering publications, including:

- The Journal of Building Engineering. *(Editor)*
- American Journal of Applied Scientific Research. *(Editor)*
- Journal of Engineering Research. *(Reviewer)*
- International Journal of Pavement Engineering *(Reviewer)*
- MDPI – Polymers and Applied Sciences. *(Reviewer)*

I warmly welcome opportunities for collaboration, academic discourse, and professional engagement in my areas of expertise. My commitment to advancing the understanding and applications of concrete technology, coupled with my holistic perspective garnered from extensive experience, positions me as a valuable partner for those who share a commitment to the advancement of the field.

Skills

- Auto CAD, SAP, Safe, Etabs
- Python (Currently progressing and advancing)
- X-ray micro-computed axial tomography scanner, Hot mounting press, Grinding and polishing automatic device, Optical Microscope, Software: analysis Particle Inspector, Micro Hardness Tester, Scanning Electron Microscope, The dynamic ultra-microhardness tester, Raman microscope.

Education

Sep 2019 – **Jul 2023**
Ph.D.: Civil Engineering – Structure
University Of Cantabria (UC), Cantabria, Spain
Thesis: Micro and macro-effect of additions on Reinforced siderurgical aggregate concrete.
Dissertation Supervisors: Dr. Carlos Thomas

May 2022 – **Sep 2022**
Sabbatical: Civil Engineering – Structure
Virginia Polytechnic Institute and State University (VT), Virginia, USA
Title: Process of carbonation steps and behavior of carbonated siderurgical aggregate in ITZ.
Dissertation Supervisors: Dr. Alexander S. Brand

Aug 2013 – **Jul 2015**
M.Sc.: Civil Engineering – Structure
Isfahan University of Technology (IUT), Isfahan, Iran
Thesis: Self-Healing concrete by bacteria.
Dissertation Supervisors: Dr. Mohammadreza Eftekhari

Jan 2006 – **Mar 2009**
B.Sc.: Civil Engineering
Islamic Azad University, Najafabad Branch (IAUN), Isfahan, Iran
Thesis: Low impact resistance and seismic behavior of concrete shear walls with a thickness of the insignificant arm.
Dissertation Supervisors: Dr. Alireza Yazdani

Sep 2003 – **Jan 2006**
A.Sc.: Civil Engineering Technician
Islamic Azad University, Najafabad Branch (IAUN), Isfahan, Iran

Publications

- Article: Aghajanian A., Cimentada A., Fayyaz M., Brand AS., Thomas C. Mechanical and Durability Properties of Slag-Based Alkali-Activated Concrete with Glass Textile and Polypropylene Fibers as a Sustainable Construction Material. J of Materials in Civil Eng, https://doi.org/10.1061/JMCEE7/MTENG-21030.
- Article: Aghajanian A., Cimentada A., Fayyaz M., Brand AS., Thomas C. ITZ microanalysis of cement-based building materials with incorporation of siderurgical aggregates. J Build Eng 2023;67:106008, https://doi.org/10.1016/J.JOBE.2023.106008.
- Article: Del Angel GG., Aghajanian A., Cabrera R., Tamayo P., Sainz-Aja JA., Thomas C. Influence of Partial and Total Replacement of Used Foundry Sand in Self-Compacting Concrete. Appl Sci 2023, Vol 13, Page 409 2022;13:409, https://doi.org/10.3390/APP13010409.
- Article: Aghajanian A., Cimentada A., Behfarnia K., Brand AS., Thomas C. Microstructural analysis of siderurgical aggregate concrete reinforced with fibers. J Build Eng 2022:105543, https://doi.org/10.1016/J.JOBE.2022.105543.
- Article: Sainz-Aja JA., Sanchez M., Gonzalez L., Tamayo P., Del Angel GG., Aghajanian A., et al. Recycled Polyethylene Fibres for Structural Concrete. Appl Sci 2022, Vol 12, Page 2867 2022;12:2867, https://doi.org/10.3390/APP12062867.
- Article: Tamayo P., Aghajanian A., Rico J., Setién J., Polanco JA., Thomas C. Characterization of the adherence strength and the aggregate-paste bond of prestressed concrete with siderurgical aggregates. J Build Eng 2022;54:104595, https://doi.org/10.1016/J.JOBE.2022.104595.
- Book chapter: Aghajanian A., Thomas C., Sainz-Aja J., Cimentada A. Colemanite filler from wastes in recycled concrete. Struct Integr Recycl Aggreg Concr Prod with Fill Pozzolans 2022:79103, https://doi.org/10.1016/B978-0-12-824105-9.00007-X.
- Book chapter: Aghajanian A., Thomas C., Sainz-Aja J. The use of rice hush ash in eco-concrete. Struct Integr Recycl Aggreg Concr Prod with Fill Pozzolans 2022:171–97, https://doi.org/10.1016/B978-0-12-824105-9.00006-8.
- Article: Del Angel GG., Aghajanian A., Tamayo P., Rico J., Thomas C. Siderurgical Aggregate Cement-Treated Bases and Concrete Using Foundry Sand. Appl Sci 2021, Vol 11, Page 435 2021;11:435, https://doi.org/10.3390/APP11010435.
- Article: Aghajanian A., Thomas C., Behfarnia K. Effect of Micro-Silica Addition into Electric Arc Furnace Steel Slag Eco-Efficient Concrete. Appl Sci 2021, Vol 11, Page 4893 2021;11:4893, https://doi.org/10.3390/APP11114893.

Under review

- Article: Aghajanian A., Cimentada A., Brand AS., Thomas C. Mechanical properties of carbonated siderurgical aggregate in Eco-concrete.
- Article: Aghajanian A., Aghaebrahimian H., Fayyaz M., Thomas C. Artificial Intelligence in Concrete: Part I - Machine Learning and Concrete Mix Design.
- Article: Aghajanian A., Samami M., Fayyaz M., Thomas C. A_Artificial Intelligence in Concrete: Part II - Machine Learning and Image Processing in Concrete.
- Book chapter: Yazdkhasti N., Behfarnia K., Teymouri M., Ali Aghajanian A. Alkali-Activated Slag Concrete Pavement Containing Waste Glass Powder. Recent Trends in the Sustainability Improvement and Use of Wastes in Cementitious Materials: Utilization of Wastes and Locally Sourced Materials.
- Book chapter: Ghatreh Samani F., Behfarnia K., Behravan A., Ali Aghajanian A. Performance study of fine recycled plastic aggregate effects on mechanical properties of alkali-activated slag concrete. Recent Trends in the Sustainability Improvement and Use of Wastes in Cementitious Materials: Utilization of Wastes and Locally Sourced Materials.

Congress

- Aghajanian, A., Cimentada, A., Thomas, C. Effect of electric arc furnace slag into eco-concrete. II International Cordoba Eco-Concrete Conference, 5-7 july 2023 – Cordoba, Spain. eISBN: 978-84-9927-761-5.
- Garcia del angel, G., Aghajanian, A., Tamayo, P., Cabrera, R., Thomas, C. Recycled foundry sand: impacts on workability, Mechanical properties and durability of mortars. II International Cordoba Eco-Concrete Conference, eISBN: 978-84-9927-761-5.
- Aghajanian A., Cimentada A., Thomas C. Siderurgical aggregates concrete ITZ: Sample preparation. 6th Brazilian Conf Compos Mater 2022:382–6. https://doi.org/https://doi.org/10.29327/566492.
- Aghajanian A., Cimentada A., Thomas C. Investigation of the behavior of eco-concrete using electric arc furnace slag aggregate and steel fiber. 6th Brazilian Conf Compos Mater 2022. https://doi.org/https://doi.org/10.29327/566492.
- Aghajanian A., Cimentada A., Thomas C. Eco-concrete with EAFS siderugical aggregates reinforced with fibers addition. 1st Int Santander Eco-Concrete Conf - ISECC21 2021.

Academic Projects

- Characterization of the Physical Properties of Control Concrete and Concrete Subjected to High Temperatures.
  Examining the mechanical properties of concrete at high temperatures and exploring methods to enhance its compressive strength for improved performance.
- Research and Development of Semi-Hot Asphalt Mixes Using Waste.
  Using waste from industrial companies and construction waste for constructing recycled asphalt with optimized mechanical properties against wear and tear as well as greater resistance to atmospheric pollutants.
- Study of Concrete for Nuclear Applications.
  Using special aggregates such as boron and colmanite to create X-ray concrete shields for radioactive imaging rooms in hospitals, providing protection against gamma rays and other harmful reflections for the human body.
- Development of Concrete with Incorporation of Special Aggregates.
  Utilizing waste from iron and steel production factories to replace natural aggregates, improving the mechanical properties of concrete and producing eco-concrete.
- Mortars and Microconcretes with High Shielding Capacities.
  New Calculation Methods for Optimizing the Management of Low and Medium Activity Waste from X-ray Power Plants.
- Development of High-Strength Grout.
  Developing ultra-high-strength construction grout with low alkali high specific area Portland cement, other cementitious binders, high purity aggregates, and compatible admixtures to achieve exceptional in-service performance.

Article refereeing

- Current Review Statistics: May 22, 2024
- Completed Reviews: 207

Teaching records

- **Sep 2016** Farzanegan University
  Sep 2019 Civil Engineering Department
- **Jan 2025** Sharif University of Technology -International Campus
  Current Civil Engineering Department

Work records

- **Jan 2024** Structural engineer
  Current Toranj Coastal Hotel - Kish Island, Iran
- **Oct 2019** Researcher
  Jul 2023 LADICIM - Laboratory of Materials Science and Engineering, Santander, Spain
- **Mar 2017** Project Manager
  Sep 2019 Private Owners, Isfahan, Iran
- **Jan 2013** Project Manager
  Jan 2017 Zomorod, Isfahan, Iran

Certifications

- 2022 - Editorial Member of American Journal of Construction and Building Materials.
- 2022 - Member of the scientific committee - IACHE Conference.
- 2022 - Member of organization committee - ISECC21 Conference.
- 2022 - Member of the scientific committee - ISECC21 Conference.
- 2022 - Certificate in the field of knowledge of Microstructural Characterization Laboratory devices
- 2022 - Alison: Concrete Structures: Corrosion of Embedded Metal and Reinforcement.
- 2022 - Alison: Concrete Structures: Strategies and Materials for Surface Repair.
- 2022 - Alison: Concrete Structures: Structural Strengthening and Stabilization.
- 2022 - Alison: Project Management in Practice - Monitoring, Controlling and Change Management.
- 2022 - Alison: Modern Project Management - Working with Clients and Project Teams.
- 2022 - Alison: Diploma in Development of Special Concretes.
- 2022 - Alison: Diploma in Certified Associate in Project Management.
- 2022 - Alison: Diploma in Strategic Performance Management.
- 2021 - Alison: Diploma in Project Management.
- 2021 - Alison: Diploma in Fundamentals of Landscape Architecture and Site Planning.
- 2021 - Certificate: Panel Discussion Strategies for Getting Published in High-Impact Journals
- 2021 - Elsevier: (Social impact, Research data management, Research collaborations, Publishing in the Chemical Sciences, Open Science, The Lancet, going through peer review, Funding, Fundamentals of publishing, Fundamentals of peer review, Finding the right journal, Ethics, Certified Peer, Reviewer Course, Book writing, Becoming a peer reviewer).