

Omer Karadag, Ph.D.

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EDUCATION

İstanbul University-Cerrahpaşa

Ph.D. in Civil Engineering

İstanbul, Türkiye

Jan 2020 – Aug 2025

Mechanical and durability properties and life cycle assessment of cement mortars incorporating agricultural waste ashes

Supervised by [Prof. Turhan Bilir](#)

Gebze Technical University

M.Sc. in Earthquake and Structural Engineering

Kocaeli, Türkiye

Jul 2016 – Aug 2018

Comparison of equivalent durability performance of measured and prescribed k -values against rebar corrosion of fly ash concrete

Supervised by [Assoc. Prof. Tayfun Altug Soylev](#)

Karadeniz Technical University

B.Sc. in Civil Engineering

Trabzon, Türkiye

Sep 2010 – Jun 2015

ACADEMIC EXPERIENCE

Özyeğin University

Instructor at Department of Architecture

İstanbul, Türkiye

Aug 2020 – Present, Full-time

- Teaching:** Instructed undergraduate courses bridging structural engineering and architectural design, including:
 - * *Statics and Mechanics of Materials*
 - * *Structural Analysis*
 - * *Structural Engineering for Architects*
- Collaboration:** Serve as the resident structural engineering expert for architectural design studios, evaluating the technical viability of student projects through integrated, cross-disciplinary reviews.
- Administration:** Manage and evaluate mandatory construction site internships for 100+ architecture students annually, verifying that field experiences align with departmental standards.
- Research:** Direct experimental laboratory testing and material analysis of cementitious composites, applying rigorous research methodologies to benchmark sustainable building materials.

İstanbul Esenyurt University

Instructor at Construction Technology Department

İstanbul, Türkiye

Apr 2019 – Jun 2020, Full-time

- Teaching:** Instructed undergraduate courses across two departments, demonstrating pedagogical versatility in both rigorous engineering and architectural design:
 - * **Civil Engineering:** *Introduction to Finite Element Method, Building Construction*
 - * **Architecture:** *Structural Systems 1 & 2*

RESEARCH PROJECTS

1. Investigation of the Effect of Biomass Ash Replacement on the Mechanical and Durability Properties of Cement Mortars and Life-Cycle Assessment.

Funded by The Scientific and Technological Research Council of Türkiye (TÜBİTAK).

Summary Investigated the viability of regional biomass wastes (hazelnut shell and sugar beet pulp ashes) as sustainable supplementary cementitious materials through comprehensive laboratory testing of microstructural and mechanical properties, and Life-Cycle Assessment.

Role Principal Investigator

Project Team Prof. Turhan Bilir (Advisor), Assoc. Prof. Zeynep Başaran Bundur (Advisor)






Dates 1 Nov 2023 - 1 Nov 2024

Status Completed (final report submitted and approved)

PUBLICATIONS

1. **Karadağ, Ö.**, Basaran Bundur, Z., Çakır, Ö. and Bilir, T. (2025). “Evaluation of strength and electrical resistivity in cement mortars incorporating different biomass ashes.” *Discover Sustainability*, 6(1), 1-20. DOI: [10.1007/s43621-025-01393-5](https://doi.org/10.1007/s43621-025-01393-5)
2. **Karadag, O.** and Canakcioglu, N.G. (2024). “Teaching Earthquake-Resistant Structural Systems in Architecture Department: A Hands-on Learning Experience.” *Architectural Science Review* 67 (4): 332–44. DOI: [10.1080/00038628.2023.2288967](https://doi.org/10.1080/00038628.2023.2288967).
3. Canakcioglu, N.G., **Karadag, O.**, and Esgin, Y.E. (2024). “Structural Literacy in Architectural Studio Learning.” *European Journal of Engineering Education*, July, 1–27. DOI: [10.1080/03043797.2024.2378861](https://doi.org/10.1080/03043797.2024.2378861).
4. Danish, A., **Karadag, O.**, Bilir, T. and Ozbakkaloglu, T. (2023). “Valorization of biomass ashes in the production of cementitious composites: A comprehensive review of properties and performance.” *Construction and Building Materials* 405: 133244. DOI: [10.1016/j.conbuildmat.2023.133244](https://doi.org/10.1016/j.conbuildmat.2023.133244).
5. Bilir T., **Karadağ, Ö.** and Aygün, B.F. (2022). “11. Waste Marble Powder.” In *Sustainable Concrete Made with Ashes and Dust from Different Sources*, 479–506. Elsevier. DOI: [10.1016/B978-0-12-824050-2.00015-2](https://doi.org/10.1016/B978-0-12-824050-2.00015-2).
6. Gencil, O., **Karadag, O.**, Oren, O.H. and Bilir, T. (2021). “Steel Slag and Its Applications in Cement and Concrete Technology: A Review.” *Construction and Building Materials* 283: 122783. DOI: [10.1016/j.conbuildmat.2021.122783](https://doi.org/10.1016/j.conbuildmat.2021.122783).
🏆 Highly Cited Paper

ACADEMIC PROFILES & IDENTIFIERS

 ORCID |  Google Scholar |  Scopus |  Web of Science |  ResearchGate

ACADEMIC SERVICE & ADMINISTRATION

Construction Site Internship Coordinator for the Department of Architecture

Review and approve construction site placements, ensuring proposed roles meet departmental standards. Evaluate comprehensive student internship reports and practical outcomes to verify that field experiences successfully reinforce the architectural curricula.

Organization Team Member, ”Resilience in Building Envelope Design and Technologies Conference”

Contributed to the planning, logistics, and execution of the [Resilience in Building Envelope Design and Technologies Conference](#), held on 23 October 2023 at Özyeğin University.

Peer Reviewer

Serve as an invited peer reviewer for international academic journals, including the *Journal of Building Engineering*, *Revista Matéria*, *Discover Materials*, and *Architectural Engineering and Design Management*.

SKILLS

Laboratory & Experimental: Materials testing, experimental setup design

Sustainability: Life Cycle Assessment, environmental impact analysis

Programming: Python, L^AT_EX

Data Analysis and Visualization: OriginPro