

Alireza Zargar Shabestari

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EDUCATION

NOVEMBER 2025 – PRESENT

PhD. Department of Civil and Architecture, Aarhus University, Aarhus, Denmark

- Thesis: Upcycling of alkaline wasters based on CO₂ mineralization

SEPTEMBER 2022 – FEBRUARY 2025

MSc. Department of Polymer and Color Engineering, Amirkabir University of Technology, Tehran, Iran

- Thesis: The prediction and confirmation of mechanical behavior of hybrid cementitious mortar/waste crumb rubber

SEPTEMBER 2018 – AUGUST 2022

BSc. Department of Polymer and Color Eng, Amirkabir University of Technology, Tehran, Iran

- Thesis: The application of waste crumb rubber in the mechanical properties' augmentation of cementitious mortar
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SUMMARY OF QUALIFICATIONS

- Highly capable in performing fundamental and microstructural analyzing of cementitious hybrid systems
 - Proficient in material design, advance materials design, and scrutinizing systems properties
 - Skilled in material development, formulation strategies, and system-level integration of polymers
 - Proficient in feasibility study of projects and characterization of systems
 - Highly capable in laboratory instruments, such as: FTIR, DSC, SEM, and physico-mechanical properties
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RESEARCH AND PROJECTS

NOVEMBER 2025 – PRESENT

Upcycling alkaline wastes for carbon capture utilization, Aarhus University, Aarhus, Denmark

- Controlling polymorphs in calcium carbonate cement based on carbon capture goals and sustainable applications

MARCH 2024 – FEBRUARY 2025

Sulphonated Melamine Formaldehyde (SMF) laboratory synthesis, Loghman Polymer Fanavari Gostar Co., Tehran, Iran

- Synthesizing Sulphonated Melamine Formaldehyde (SMF) superplasticizer at laboratory and industrial scale

Utilization Geopolymers in Oil-Gas Well Cementing, Loghman Polymer Fanavari Gostar Co., Tehran, Iran

- Modifying properties of oil and gas wells cementing by Geopolymers

APRIL 2022 – OCTOBER 2024

Investigation and characterization of alkali-activated materials, Loghman Polymer Fanavari Gostar Co., Tehran, Iran

- Analyzing, formulation development and characterization of Geopolymers based on Fly Ashes and GGBS precursors

APRIL 2021 – MARCH 2025

Utilization of treated crumb rubber for property development, Amirkabir University of Technology, Tehran, Iran

- Mechanical properties augmentation of pavements with heat-treated crumb rubber at industrial scale
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RESEARCH INTERESTS

- Feasibility Study, prediction and analyzing methods
- Physical-chemistry developments and intermolecular Analysis
- Fundamental, microstructural, and interfacial characterization
- Polymers in cementitious materials
- Net-zero sustainable cementitious systems
- Hybrid composites design and formulation

PUBLICATIONS

OCTOBER 2025

The compressive strength-water infiltration rate mapping of cementitious mortars: The sustainability/durability extension using heat-treated crumb rubber inclusion, Amirkabir University of Technology, Tehran, Iran

- Submitted and Under Review in “ACS Sustainable Chemistry and Engineering” Journal
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WORK EXPERIENCE

SEPTEMBER 2022 – OCTOBER 2024, PART-TIME

Laboratory Instructor, Amirkabir University of Technology, Tehran, Iran

- Teaching “Co-axial Rheometer” and “Chains Fractionation”, and “Physical Chemistry of Polymers” lab. supervisor

SEPTEMBER 2022 – OCTOBER 2024, PART-TIME

Machine Operator, Amirkabir University of Technology, Tehran, Iran

- “Co-axial Rheometer” and “Contact Angle” operator in “Physical Chemistry of Polymers” lab.

SEPTEMBER 2022 – JANUARY 2024, PART-TIME

Teaching Assistant, Amirkabir University of Technology, Tehran, Iran

- Conducting tutorials, graded assignments, and exams for “Physical Chemistry of Polymers” and “Advanced Physical Chemistry of Polymers” for B.Sc. and M.Sc. students, respectively

MAY 2021 – OCTOBER 2025, FULL-TIME

Worked as a R&D Specialist and Research Assistant, Loghman Polymer Fanavari Gostar Co., Tehran, Iran

- Research assistant, R&D specialist, projects management, and data analysis of industrial projects

JUNE 2021 – SEPTEMBER 2021, PART-TIME

B.Sc. Internship, Kavosh Polymer Alborz, Tehran, Iran

- Theoretical investigation and researching about co-rotating twin screw extruders
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CONFERENCE PAPERS, CERTIFICATES AND WORKSHOPS

SEPTEMBER 2024

Certificate of Presentation in 16th International Seminar on Polymer Science and Technology (ISPST 2024), Sahand University of Technology, Tabriz, Iran

- **Oral presentation:** The application of heat-treated crumb rubber to simultaneously augment of the compression-impact strengths of cementitious materials

NOVEMBER 2022

Certificate of Presentation in 15th International Seminar on Polymer Science and Technology (ISPST 2022), Isfahan University of Technology, Isfahan, Iran

- **Poster presentation:** Effect of water infiltration rate on mechanical properties of heat-treated crumb rubber (HT-CR) containing cementitious mortar
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LANGUAGES

English: IELTS Academic Band Score (Overall) = 7.0 (CEFR Level = C1)

Persian: Native

REFERENCES

- **Dr. Min Wu: PhD. Supervisor, Email: mnwu@cae.au.dk**
Department of Civil and Architecture Engineering, Aarhus University, Aarhus, Denmark
- **Dr. Naser Mohammadi: BSc. and MSc. Supervisor, Email: mohammadi@aut.ac.ir**
Department of Polymer and Color Engineering, Amirkabir University of Technology, Tehran, Iran
- **Dr. Manouchehr Khorasani: Advisor, Email: khorasani.m@aut.ac.ir**
Department of Polymer and Color Engineering, Amirkabir University of Technology, Tehran, Iran