

# Mohammad Hasani

Tehran, Iran - +989120752256

[m.hasani@sru.ac.ir](mailto:m.hasani@sru.ac.ir)

[mohammadhasani.com](http://mohammadhasani.com)

---

## Education

### Master of Science in Structural engineering

2016-09 – 2018-09

- **Shahid Rajaee Teacher Training University - Tehran, Iran**
- **Thesis:** Investigating the relationship between the surface energy of pozzolan minerals and pozzolanic activity
- **Supervisor:** Dr. Amir Tarighat
- **Overall GPA:** 17.19 out of 20 - (3.77 out of 4)
- **Thesis GPA:** 19.5 out of 20 - (4 out of 4)
- **Rank in department:** 2<sup>nd</sup>
- Top 5% in Iranian University Entrance Exam

### Bachelor of Science in Civil engineering

2012-09 – 2016-09

- **Tafresh University - Markazi, Iran**
- **Overall GPA:** 15.29 out of 20 – (3 out of 4)

### Selected courses

Advanced Concrete Structures (4/4), Advanced Steel Structures (4/4), High-Rise Structures (4/4), Advanced Concrete Technology (4/4), Inelastic Analysis of Structures (4/4)

---

## Research Interest

- Cement and concrete microstructure
  - Multi-scale study of cementitious materials
  - Supplementary cementations materials
  - Geopolymers
  - Fibre reinforced concrete
  - Atomistic simulations (MD, DFT)
  - Artificial intelligence usage in concrete technology
  - Machine learning and Data science
- 

## Publication

- Hasani, Mohammad, and Amir Tarighat. "Proposing new pozzolanic activity index based on water adsorption energy via molecular dynamics simulations." *Construction and Building Materials* 213 (2019): 492-504. 2019-04
- Parsa, Mohammad Hossein, and Mohammad Hasani. "Determination of optimum volume percent of steel fiber in FRC tunneling segments." 7<sup>th</sup> *International conference on civil engineering, architecture and urban economy development, Shiraz*. 2018. (In Persian) 2018-10

## Research Experience

- **Investigating the effect of thermodynamic parameters on the pozzolanic activity** *2019-05 – 2019-09*

In order to study the effects of temperature and pressure on pozzolanic behavior, I extended my research on the pozzolanic activity index by including different thermodynamic conditions.
  - **Studying the activity of different pozzolanic minerals using atomistic simulations** *2017-07 – 2018-09*

In this study, I used the concept of water adsorption energy and employed molecular dynamics simulations to assess the activity of pozzolanic minerals. This research led to a new activity index for pozzolanic materials based on their XRD test results.
  - **Studying design and construction methods of FRC tunneling segments** *2018-02 – 2018-12*

In this study, I reviewed previously built FRC tunnels all around the world in terms of their design and construction. One of the results of this statistical study was the calculation of empirical optimum fibre content for tunnels based on their dimensions and application.
  - **Studying the effects of pozzolanic materials on concrete properties** *2017-01 – 2017-04*

This study was part of the literature review before starting MSc thesis.
- 

## Skills

### Academic and Professional

- Steel and concrete structures analysis and design
- Concrete technology
- Molecular Dynamics simulations
- Familiar with surface science and crystallography
- Familiar with XRD, XRF, and physical tests of concrete
- Experience with Iranian and American design codes (ACI, ASCE, AISC)
- Familiar with fib, RILEM and ACI codes focusing on FRC

### Software

- **Engineering:** CSI Etabs/ CSI Safe/ CSI SAP2000/ AutoCad
- **Atomistic Simulation:** BIOVIA Materials Studio/ Familiar with LAMMPS Code

### Programming

- C++/ Experience with Perl/ Learning Python

### Language

- **English:** IELTS Overall 7.5, (Listening: 8, Reading: 7.5, Writing: 6.5, Speaking: 7)
- **Persian:** Native

## Industrial Experience

### Executive Assistant at Kazheh Construction Co.

2018-12 – 2019-11

- Managed the construction of 5 retails in Iran Mall shopping mall
- Supervised workforce and project schedules
- Verified structural, mechanical and electrical shop drawings

### Member of the Tehran Construction Engineering Organization

2018-12 – Present

---

## References

### Dr Amir Tarighat

- Department of Civil Engineering, Shahid Rajaee Teacher Training University, Lavizan, Tehran, Iran
- [tarighat@sru.ac.ir](mailto:tarighat@sru.ac.ir)

### Dr Abbas Haghollahi

- Department of Civil Engineering, Shahid Rajaee Teacher Training University, Lavizan, Tehran, Iran
- [haghollahi@sru.ac.ir](mailto:haghollahi@sru.ac.ir)

---

## Online courses and webinars

- Python Basics for Data Science, IBM on edx 2019-04
- IELTS Academic Test Preparation, University of Queensland on edx 2018-06
- Cement Chemistry and Sustainable Cementitious Materials, EPFL on edx 2018-01

---

## Hobbies and Interests

- Reading (Books, Papers, Technology news ...)
- Group activities
- Volunteer works
- Sports (Swimming, Cycling)
- Solving puzzles
- Music and movie
- Travelling