

# MOHAMMADHOSSEIN NAHAVANDIAN

@ mnahava@clemson.edu  
in LinkedIn

GitHub

✉ 743 Issaqueena trail, Central SC, 29630 U.S.A  
Google Scholar

📍 United States

☎ +1 (864) 710-9145

ORCID

*"Science is the most precious thing we have (A. Einstein)"*

## EDUCATION

### PhD Candidate | Mechanical Engineering

#### Clemson University

📅 Jan 2022 – present

📍 Clemson, SC, United States

- **Dissertation:** Chemical Redistribution and Entropic Effects on Mechanical Response of Materials Under Irradiation

#### Skills:

- **Programming:** Python, Pytorch, LAMMPS, Batch
- **Software:** Ovito, AtomsK, FreeFEM<sup>++</sup>
- **Methods:** Phase-Field, Molecular Dynamics, Dislocation Dynamics, Kinetic Monte-Carlo

#### Teaching and Research experience:

- **Graduate Research Assistant** (Jan 2024 – present)
- **Graduate Lab Assistant** (Jan 2022 – Jan 2024)

GPA: 4.00/4.00

### Master of Science | Mechanical Engineering

#### University of Tehran

📅 Sep 2012 – Feb 2015

📍 Tehran, Iran

- **Thesis:** Stability of Thixotropic Fluids in Pipe-Flow

#### Skills:

- **Programming:** MATLAB, Fortran, C<sup>++</sup>
- **Software:** SolidWorks, Ansys-CFX, Ansys-Fluent
- **Document Creation:** MS office, LaTeX

#### Teaching and Research experience:

- **Graduate Research Assistant** (Jan 2013 – Feb 2015)

GPA: 3.50/4.00

### Bachelor of Science | Mechanical Engineering

#### Iran University of Science & Technology

📅 Sep 2008 – Sep 2012

📍 Tehran, Iran

- **Thesis:** Effects of geometry and material factors of adhesively bonded single lap joint on stress concentration

#### Skills:

- **Programming:** Pascal
- **Software:** Auto Cad, Mechanical Desktop, ABAQUS
- **Methods:** Research

GPA: 3.30/4.00

## JOURNAL PUBLICATIONS

- M Nahavandian, E Aydogan, J Byggmästar, E Martinez. (2025). Design Kinetic Parameters for Improved Resilience of Materials under Irradiation, (Under Review)

## SOFTWARE SKILLS

- Python, MATLAB, Batch, FreeFEM<sup>++</sup>, Fortran, and Wolfram Mathematica
- LaTeX, MS Office (Word, Excel, PowerPoint, OneNote)
- LAMMPS, ParaView, Ovito
- AutoCAD, Ansys (Fluent, CFX, ICEM), SOLIDWORKS, AutoSPRINK, and Pyrosim

## JOB EXPERIENCE

### Industrial HVAC & Firefighting Systems Specialist

#### TAM co.

📅 June 2020 – Nov 2021

Tehran, Iran

- Engineering design and inspection of industrial HVAC and fire suppression systems, including exhaust, sprinklers, foam, water mist, and clean agent gas systems, following the latest NFPA standards.

### HVAC & Firefighting Systems Specialist

#### Imen Gostar Tehran Pouya co.

📅 May 2019 – May 2020

Tehran, Iran

- Engineering design of HVAC and fire extinguishing systems, including exhaust and sprinklers for residential and commercial buildings, following NFPA codes.

### HVAC Systems Specialist

#### Tahviah Tehran co.

📅 Sep 2017 – Nov 2018

Tehran, Iran

- Engineering design of parking smoke management systems, including CFD simulation for fire dynamic analysis, based on NFPA standards.

### University Lecturer

#### Roozbeh University

📅 Dec 2014 – Jul 2017

Zanjan, Iran

- Teaching and advising Undergrad students

- **M Nahavandian**, S Sarkar, S Bagchi, D Perez, E Martinez. (2024). From anti-Arrhenius to Arrhenius behavior in a dislocation-obstacle bypass: Atomistic simulations and theoretical investigation. Computational Materials Science, 239, 112954.
- S Sadralashrafi, **M Nahavandian**, D Neyens, B Knijnenberg, D Li. (2024). Promoting Eco-Friendly Space Usage in Activity-Based Workspaces through Eco-Feedback. Proceedings of the Human Factors and Ergonomics Society Annual Meeting.
- **M Nahavandian** and A Izadi. (2019) Numerical Simulation of Flow Hydrodynamic Around Dolphin Body in Viscous Fluid. Journal Of Marine Engineering. Research Paper vol. 15, no. 29, pp. 147-165.
- M Saffar Avval, MR Eslami, N Zehtabiyani-Rezaie, **M Nahavandian**. (2019). Status of research in the field of engineering in Iran; With a focus on mechanical engineering. Iranian Journal of Engineering Education, vol. 21, no. 82, pp. 31-57.
- S Sadralashrafi, SHR Pasandideh, ST AkhavanNiaki, **M Nahavandian**. (2018). The gardener problem with reservation policy and discount. Computers & Industrial Engineering. 123, 82-102.
- **M Nahavandian**, M Pourjafar, K Sadeghy. (2018). Stability of Thixotropic Fluids in Pipe Flow. Scientia Iranica. vol. 25, no. 2, pp. 790-798.

## CONFERENCES AND POSTERS

- **M Nahavandian**, L Myhill, E Martinez. (2025). "Effect of Stress, Temperature and Langevin Friction on the Rate of Reaction in Dislocation Dipoles", TMS 2025, Annual Meeting and Exhibition, Las Vegas, Nevada, USA, 2025 & MRS Fall Meeting, Boston, Massachusetts, USA, 2024 (Presentation)
- **M Nahavandian**, S Sarkar, E Martinez. (2024). "From anti-Arrhenius to Arrhenius behavior in a dislocation-obstacle bypass: Atomistic Simulations and Theoretical Investigation", TMS 2024, Annual Meeting and Exhibition, Orlando, Florida, USA, 2024 (Presentation)
- **M Nahavandian**, S Sarkar, E Martinez. (2023). From Anti-Arrhenius to Arrhenius Behavior in a Dislocation-obstacle Bypass, Materials Science & Technology Technical Meeting and Exhibition, Columbus, Ohio, USA, (Presentation)
- **M Nahavandian** and E Martinez. (2022). Role of Activation Entropy in Dislocation Dynamics. research fellows & all faculty conference & celebration RFAF2022 (Made in SC), Greenville, South Carolina, USA. (Poster)
- **M Nahavandian**, H Khoramishad. (2016) Effects of geometry and material factors of adhesively bonded single lap joint on stress concentration. The International Conference on New Researches in Engineering Sciences, Tehran, Iran, 2016. (Conference Paper)

## RESEARCH INTERESTS

Computational Materials Engineering   Condensed Matter  
Materials Under Extreme Environment   Irradiation Damage  
Phase-Field Modeling   Complex Fluids   Multiphase Flows

## SOFT SKILLS

- Communication, Presentation, Multi-Tasking and self motivation, Inspiring leadership, Problem solving, Teamwork, and Collaboration

## HONORS & AWARDS

- 🏆 **ME Excellence Award for Graduate Teaching Assistants 2024**  
nominated by faculty & ME undergrad students
- 🏆 **Graduate Travel Grant for MS&T2023 Conference**  
Awarded by the Graduate Student Organization of Clemson University
- 🏆 **Supplementary Travel Award for TMS2024**  
Awarded by Clemson College of Engineering, Computing and Applied Sciences
- 🏆 **Writing Across the Curriculum (WAC) Grad Fellow - Spring and Fall 2023**  
Awarded by Pearce Center, Clemson University

## SOCIAL ACTIVITIES

- Communication director of the Clemson Iranian Students Organization (CISO) (Sept 2022 – Sept 2023).
- Graduate Student Council member at ME Department of Clemson University (MEGSC) (Sept 2023 – present).

## LANGUAGES

English   ●●●●●  
Persian   ●●●●●  
Azerbaijani   ●●●●●

## REFERENCES

- Dr. Enrique Martinez Saez**  
@ enrique@clemson.edu  
✉ Associate Professor of Mechanical Engineering in Clemson University  
Clemson, South Carolina, 29634
- Dr. Atieh Moridi**  
@ moridi@cornell.edu  
✉ Associate Professor of Mechanical Engineering in Cornell University  
469 Upson Hall, Ithaca, NY, 14853
- Dr. Blas Pedro Ueberuaga**  
@ blas@lanl.gov  
✉ Los Alamos National Laboratory  
New Mexico