

MOHAMMADHOSSEIN NAHAVANDIAN

@ mnahava@clemson.edu

United States

ORCID

in LinkedIn

GitHub

Google Scholar

"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⁺⁺
- **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⁺⁺
- **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⁺⁺, Fortran, and Wolfram Mathematica
- LaTeX, MS Office (Word, Excel, PowerPoint, OneNote)
- LAMMPS, ParaView, Ovito
- AutoCAD, Ansys (Fluent, CFX, ICEM), SOLIDWORKS, AutoSPRONK, 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