Nazanin Mohseninia

PERSONAL INFORMATION

Faculty of Physics
Semnan University, Semnan, Iran
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RESEARCH INTERESTS

Current Focuses

- Theoretical and computational condensed matter physics
- Isotopic separation of helium through nanoporous graphene-based material membranes
- Applying DFT to designing new materials with desired properties for removing toxic air, water, and soil pollutants applications
- Material synthesis and characterization
- Environmental remediation
- Electrolysis processes (cathodic plasma electrolysis) and electrodeposition mechanisms
- Thin film technology
- Photocatalytic materials

EDUCATION

Semnan University, Semnan, Iran

Doctor of Philosophy in Condensed Matter Physics Sep. 2019 – Oct. 2024

- Dissertation: "Theoretical Investigation on Adsorption of Nitrate Ion on Graphene-Based Compounds"
- Supervisor: Hamid Rezagholipour Dizaji Supervisor: Nafiseh Memarian Advisor: Hossein Hajiabadi

Material and Energy Research Center (MERC), Karaj, Iran

Master of Thin Film Physics Sep. 2014 – Oct. 2017

- Thesis: "Preparation of Novel Nano-Structural Carbon Films Using Atmospheric Pressure Plasma Deposition Technique"
- Supervisor: Ali Aghakhani Supervisor: Asghar Kazemzadeh Advisor: Azarmidokht Hoseannia

Damghan University, Damghan, Iran

Bachelor of Science in Physics Sep. 2008 – Sep. 2012

PUBLICATIONS

N. Mohseninia, H. Rezagholipour Dizaji, N. Memarian, and H. Hajiabadi, "Structural and electronic properties of Mo-decorated graphene, reduced graphene and reduced graphene oxide: A DFT calculation," *Applied Crystallography*, vol. 57, no. 3, May 2024.

N. Mohseninia, N. Memarian, and H. Rezagholipour Dizaji, "Theoretical investigation of adsorptive nitrate ion removal by pure graphene, Mo-decorated G, and rGO-based adsorbents: A DFT study," *Accepted for publication in Crystallography (2024).*

N. Mohseninia, N. Memarian, and H. Rezagholipour Dizaji, "Theoretical insights into the adsorptive removal of nitrate ion as a detrimental pollutant using Mo-decorated rG material through DFT calculations," *Manuscript under preparation.*

N. Mohseninia, N. Memarian, and H. Rezagholipour Dizaji, "Comparison of Molybdenum-Doping Effects on the Structural and Electronic Properties of rG and rGO for Enhanced Nitrate Removal: A DFT Study," *Manuscript under preparation.*

WORK EXPERIENCE

Journals of "Progresses in Physics of Applied Materials"and "Modeling & Simulation in Electrical & Electronics Engineering" 2024 – Present
Role: *Page Designer, Executive Assistant, and Publisher*

LED Lamp Manufacturing Company 2018 – 2019
Role: *Quality Control Manager*

Conference Collaborations

Conference: 10th Congress of the Iranian Ceramic Society & 1st Congress on Advanced Ceramics
Location: Tehran, Iran — May 2015

Conference: 7th Conference on Engineering and Physics of Plasma
Location: Shahrood University of Technology, Shahrood, Iran — Jul. 2015

Conference: 8th National Conference on Advances in Superconductivity and Magnetism
Location: Semnan, Iran — Nov. 2024

Conference Presentations

Conference: 7th National Conference on Nanotechnology from Theory to Application
Location: Jami Institute of Higher Education, Iran — June 2019

Conference: 9th International Congress on Nanoscience & Nanotechnology (ICNN2022)
Location: Tehran, Iran — Jan. 2022

Conference: National Conference on Technological Advances in Applied Physics
Location: Kerman University of Technology, Kerman, Iran — Jan. 2022

Conference: 12th International Conference on Science and Development of Nanotechnology
Location: Tbilisi, Georgia — Feb. 2024

Skills

Programming: Python, MATLAB.
Applications: LaTeX, Microsoft Office, Photoshop, Origin, XMGrace, XCrySDen.
Technical: Quantum Espresso and Gaussian packages, BURAI, VESTA, VASP, LAMMPS, Vienna Ab initio, BIOVIA Materials Studio, NAMD, GROMACS, VMD, CP2K Simulation Package.

Teaching Experience

Fundamental Principles of Quantum Espresso
Role: *Instructor*
School: Faculty of Physics, Semnan University, Semnan, Iran — 2022 – 2023

General Physics
Role: *Teaching Assistant*
Instructor: Hamid Rezagholipour Dizaji
School: Faculty of Physics, Semnan University, Semnan, Iran — 2021 – 2022

Developing Curricula and Educational Projects in Physics I-II
Role: *Teaching Assistant*
Instructor: Hamid Rezagholipour Dizaji
School: Faculty of Physics, Semnan University, Semnan, Iran — 2020 – 2021

References

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Nafiseh Memarian
Associate Professor of Physics, Faculty of Physics, Semnan University, Semnan, Iran
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Hossein Hajiabadi
Computational Research Laboratory, Nikopardazesh Research Center, Karaj, Iran
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