Adeleh Vatankhahan
Curriculum Vitae

Contact Information

Email:ad_va1364@yahoo.com

Research Interests

- Spintronics (Spin dynamics and transport in semiconductors)
- Strongly Correlated systems (Superconductivity)
- Modeling Nano Structures (Computational Nano Material)
- Condensed Matter Physics (Multiferroic Material, Topological Insulator)
- Quantum Monte Carlo simulations

Education

- **Ph.D.** solid state physics**,** Shahrood University of Technology, Shahrood, Iran

  Supervisor: Dr. Tayebeh Movlarooy. 2016-2020

- **M.Sc**.in Physics , Khayyam University, Mashhad , Iran 2009 – 2011

  Thesis Title: transport properties of InN by Monte Carlo simulation

  Supervisor: Dr. Hadi Arabshahi

- **B.Sc**. in Physics**,** Ferdowsi University**,** Mashhad, Iran 2005 – 2009

Publications

Journal Paper

- **Vatankhahan, A**., Movlarooy, T. (2021). The effect of edges hydrogenation and adsorption of Co and Mn atoms on spin transport properties of borophene Nanoribbons. ***Materials Science and Engineering: B***, *273*, 115391
- Tarikhchi1, T, Torabi1, A, **Vatankhahan,** A (2021). Tuning Electronic Structures of double-walled boron nitride nanotubes using Ga atom encapsulated.International.***Journal of Engineering Research and Applications***, 11, 21-27.
- **Vatankhahan, A,** (2021). Ab Initio study of stability and electronic structure of InN nanotubes. ***Journal of Engineering Research and Applications***, 9, 62-65.
- **Vatankhahan, A**., Movlarooy, T. (2020). Ab-initio study of transition metals adsorption on borophene nanosheet. ***IEEE Magnetics Letters***.
- Tochaei, A. A., Arabshahi, H., Benam, M. R., **Vatankhahan, A**., Abedininia, M. (2016). Comparison between Si/SiO 2 and InP/Al 2 O 3 based MOSFETs. ***Journal of Experimental and Theoretical Physics,*** *123*(5), 869-874.
- Ghafourian, M., Nobakht, S., Arabshahi, H., Tayarani, M. H., **Vatankhahan, A**., & Bazrafshan, M. (2013). Comparison of Characteristic Curve of Drain-Source Electron Transport Properties in ZnO and GaAs Based MOSFETs Using Monte Carlo Simulation.
- Arabshahi, H., **Vatankhahan, A**., & Tayarani, M. H. (2011). Comparison of low field electron transport properties in InN and GaN semiconductors by solving Boltzmann equation using iteration model. ***International Journal of Science and Advanced Technology***, *1*.

Conference Papers

- **Vatankhahan, A**., Tayarani, M. H., & Sadremomtaz, A. (2011). Comparison of Electron Scattering Mechanisims and Electron Mobility in AlN and GaN at Low Electric Field Application. ***International Journal of Science and Advanced Technology***, *1*.
- M. Abedininiya, H. Arabshahi, MH. Tayarani, **A. vatan-khahan**," Simulation of Electron Transport in GaAs,MOSFET Transistor at The Nanoscale in High Electric Field Using Ensemble Monte Carlo Simulation " , 11Th condensed matter physics conference of iran (2013)
- **Vatan-khahan**, H. Arabshahi," Comparison of Electron Transport Properties In Semiconductors AlN and ZnO in Iow of Field Electron and Smaller Size of Micrometers"; 11Th condensed matter physics conference of iran (2013)
- **Vatan-khahan**, H. Arabshahi ," Electron Transport Properties in InGaN Semiconductor By Using Iteration and Monte Carlo Simulation Models in Iow Field Electron and Smaller Size of Micrometers"; 11Th condensed matter physics conference of iran (2013)

Professional Careers

- **Visiting Researcher:**
  Donostia International Physics Center (May. 2019 -Oct. 2019)
  In Prof. Aran Garcia-Lecce.'s Research Group.
- **Teaching (General physics I,II)** (Fall 2016- present, Khayyam University)
- **Teaching assistant:**
  Statistical mechanics pathria
  foundations of electromagnetic theory reitz
- **Workshop software Matlab , Fortran** (Spring 2014, Khayyam University)

Skills

- **Computer:** Familiar with windows and Linux Operating System.
  Experience with C++, FORTRAN Programming, Python.
  Familiar with Ab-initio, DFT and NEGF simulation packages.
  (SIESTA, TRANSIESTA, SMEAGOL, ATK (Atomistix ToolKit))
  Familiar with some computational approach like as DFT, TB, NEGF.
  Familiar with Microsoft Office Word, Power Point and Diagram Plotting Software (Origin and Sigma Plot) .
- **Language:** Persian (maternal), English (Limited working proficiency)