CURRICULUM VITAE

FATEMEH EBRAHIMI
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BIRTH: 1966, Mashhad, IRAN.

EDUCATION

- **Ph.D. in Condensed Matter Physics,** Ferdowsi University of Mashhad, Mashhad, IRAN, October 2002.
  Dissertation**:** *Coarsening of Heterogeneous Porous Media and Flow and Transport therein Using Wavelet Transformation.*
- **M.Sc. in Solid State Physics** Ferdowsi University of Mashhad, Mashhad, IRAN, September 1993.
  Dissertation: *Calculation of I/E Curves in Low Energy Electron Diffraction (LEED) from Ni (001) Surface.*
- **B.Sc. in Applied Physics,** Sharif University of Technology, Tehran, IRAN, June 1990.

WORK EXPERINCES

- **Professor**
  Physics Department, University of Birjand, Birjand, IRAN (2002-present).
- **Visiting Scholar**
  University of Southern California, Los Angeles, California, USA (summer 2006).
- **Senior Researcher**
  on the project: *Investigation and Modeling of Carbonate Oil Reservoirs of Iran, Investigating up-scaling of fractured reservoirs*, Oil Group at IASBS, Zanjan, IRAN (2003-2004).
- **Visiting Scholar**
  University of Southern California, Los Angeles, California, USA (2001-2002).
- **Physics Lecturer**
  Physics Department, University of Birjand, Birjand, IRAN (1993-1996).

REASERCH INTERESTS

- Equilibrium and Non-equilibrium Properties of Confined Fluids at nano- scale
- Physics of Granular Media
- Statistical Modeling of Flow and Transport in Porous Media
- Statistical Modeling of Charge Transport in semi-conductor nano- particles

COURSES TAUGHT

Undergraduate

General Physics
Thermodynamics
Statistical Physics
Physics of fluids
Solid State Physics
Modern Physics
Electromagnetic Theory
Quantum Mechanics

Graduate

Advanced Statistical Physics
Molecular Simulations
Advanced Solid State Physics
Computational Physics

PUBLICATIONS

- M.Sahimi and F. Ebrahimi
  Efficient Transport Between Disjoint Nanochannels by a Water Bridge
  Physical Review Letters **122**, 214506, 2019.

- F. Ebrahimi, F.Ramazani and M.Sahimi
  Nanojunction Effects on Water Flow in Carbon Nanotubes
  Nature: Scientific Reports 7752, 2018.

- F. Ebrahimi, and H. Koochi
  A two-scale method for fast estimation of the charge-carrier diffusion coefficient in nanoporous semi-conductors
  Journal of Physics: Condensed Matter **29,** 025901, 2017.

- F. Ramazani and F.Ebrahimi
  Water imbibition into nonpolar nanotubes with extended topological defects
  Chemical Physics, **476**, 23–28, 2016.

- M. Moslehi, F. P.J. de Barros, F.Ebrahimi, and M.Sahimi
  Upscaling of solute transport in disordered porous media by wavelet transformations
  Advances in Water Resources, **96**, 180–189, 2016

- F. Ramazani and F.Ebrahimi
  Uncertainties in the Capillary Filling of Heterogeneous Water Nanochannels
  Journal of Physical Chemistry C, **120**, 12871−12878, 2016

- F. Ebrahimi and M. Gholamian Moghaddam
  Temperature-dependence of wetting properties of carbon nanotubes
  Physica A 453, 271–277, 2016.

- F. Ebrahimi and A. Pishevar
  Sensitivity of the dynamics of imbibition to water-carbon nanotube interaction
  Journal of Physical Chemistry C, **119**, 28389−28395, 2015.

- S. Soleimanzadegan, H. Farsi, and F. Ebrahimi
  Molecular dynamics simulation of some cyclic compounds solubilization into the nanometric core of Cetyltrimethylammonium Bromide micelle
  Journal of Molecular Structures, **1079**, 494-501, 2015.

- H. Koochi , and F. Ebrahimi
  Geometrical effects on the electron residence time in semiconductor nano-particles
  The Journal of Chemical Physics (JCP), **141**, 094702, 2014.

- G.R. Maktabdaran and F. Ebrahimi
  Avalanche behavior of weakly perturbed bead piles
  Journal of Statistical Mechanics (JSTAT), P04003, 2014.

- F.Ebrahimi, T.Azizpour, and H.Maleki
  Janssen effect and the stability of quasi-two-dimensional sandpiles
  Physical Review E (PRE), **82**, 031302 , 2010.

- H. Abtahinia and F.Ebrahimi
  Monte Carlo study of structural ordering of Lennard-Jones fluids confined in nanochannels
  The Journal of Chemical Physics (JCP), **133**, 064502 , 2010.

- F.Ebrahimi
  Invasion Percolation: A computational algorithm for complex phenomena
  Computing in Science and Engineering (CiSE), **12** : 84-93, 2010.

- F.Ebrahimi
  The Anisotropy of Two Dimensional Percolation Clusters of Self-Affine Models
  arXiv:0808.4033v1 [cond-mat.stat-mech]

- H.Maleki, F.Ebrahimi , and E.Nedaaee Oskoee
  The Angle of Repose of Spherical Grains in Granular Hele-Shaw Cells: A Molecular Dynamics Study
  Journal of Statistical Mechanics (JSTAT), P04026, 2008.

- F.Ebrahimi
  Invasion Percolation in the Presence of Nanopores
  International Journal of Modern Physics C (IJMPC), **19**: 1515-1528, 2008.

- F.Ebrahimi
  The Shape of Invasion Percolation Clusters in Random and Correlated Media
  Journal of Statistical Mechanics (JSTAT), P04005, 2008.

- F.Ebrahimi and M.Sahimi
  Grid Coarsening, Simulation of Transport Processes, and Scale-up of Heterogeneous Media: Application of Multi-resolution Wavelet Transformation
  Mechanics of Materials (Mech. Mat.), **38**:772-785, 2006.

- M.Sahimi, M.Naderian, and F.Ebrahimi
  Efficient Numerical Simulation of ac Conduction in Heterogeneous Materials at Low Temperatures
  Physical Review B (PRB), **71**: 0940278, 2005

- M.Sahimi, M.R.Rasaei, F.Ebrahimi and M.Haghighi
  Upscaling of Unstable Miscible Displacements and Multiphase Flows Using Multi-resolution Wavelet Transformation
  SPE 93320, 2005.

- F. Ebrahimi and M. Sahimi
  Multi-resolution Wavelet Scale up of Unstable Miscible Displacements in Flow Through Heterogeneous Porous Media
  Transport in Porous Media (TIPM), **57**:75-102, 2004.

- F.Ebrahimi and M.Sahimi
  Multi-Resolution Wavelet Coarsening and Analysis of Transport in Heterogeneous Media
  Physica A, **316**:160-188, 2002.

Iranian Journals

- F.Ebrahimi, M.Moghddas, and H.Koocchi
  Estimation of electron diffusion length and life-time in nano-porous semi-conductors with a two-scale random walk method
  Journal of Reserch on Many Body systems, **7**:1-8,2017.

- Z.Daadi-Geev, M.Khaksefidi, and F.Ebrahimi
  The Structure of Invasion Percolation Clusters in Two Dimensions
  Iranian Journal of Physics Research, **7**: 197-203, 2008.

- F.Ebrahimi and A.R.Zomorrodian
  Study of Ni (001) Surface via I/E Curves in LEED Method,
  Iranian Journal of Crystallography and Mineralogy, **7**:109-120, 1999