Maziar Heidari

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Education

- **Max Planck Institute for Polymer Research**, Mainz, Germany.
  PhD. Candidate in Polymer Theory, Since 2015
  Supervisors: Dr. R. Potestio, Dr. D. Donadio and Prof. K. Kremer.
  Thesis: Multiscaling Methods and their Applications on Soft Matter.

- **Sharif University of Technology**, Tehran, Iran.
  MSc. in Mechanical Engineering,
  Supervisor: Prof. M. A. Jalali.
  Thesis: Motility of Protein Embedded Vesicles.

- **Amirkabir University of Technology (Tehran Polytechnic)**, Tehran, Iran.
  BSc. in Mechanical and Manufacturing Engineering,
  Supervisor: Prof. B. Arezoo.
  Thesis: Computational Recognition of Manufacturing Features.

Research Experiences and Collaborations

- **Harvard Medical School, Harvard University**, MA, USA.
  Scientific Researcher.   **2013-2014**
  Supervisor: Dr. A. Mashaghi.
  Topology and Polymers.

- **Department of Bioengineering, University of California, Berkeley**, CA, USA.
  Scientific Researcher.   **Mar 2013-April 2015**
  Supervisor: Prof. M. R. K. Mofrad.
  Interactions of Globule Polymers in Shear Flow.

- **Institute of Complex Systems (ICS II), Forchungszentrum Juelich**, Jülich, Germany.
  Scientific Researcher.   **Aug-Oct 2012**
  Supervisor: Dr. D. A. Fedosov.
  Modeling dynamics of von Willebrand factor in flow.

- **Physics Department, Sharif University of Technology**, Tehran, Iran.
  Visitor at Soft Condensed Matter Group.   **Since Jun 2011**
  Principal Investigator: Prof. M. R. Ejtehadi.
  Studying the DNA conformations in confinement.

- **Institute for Research in Fundamental Sciences (IPM)**, Tehran, Iran.
  Researcher at Biomathematics Group.   **Since Mar 2010**
  Principal Investigator: Prof. A. Abbasian and Prof. M. Fotouhi.
  Studying neural fields and computations.

- **Sharif University of Technology**, Tehran, Iran.
  Research Assistant at Computational Mechanics Lab.   **Sep 2008- Mar 2011**
  Supervisor: Prof. M. A. Jalali.
  Investigated the biological membranes theoretically and computationally.

- **Arak Science and Technology Park**, Arak, Iran.
  Research Assistant.   **Jan 2008- Jan 2009**

Supervisor: Dr. H. Gh. Saii.
Investigated the stochastic differential equations and dynamical systems.

- **Amirkabir University of Technology**, Tehran, Iran.
  Research Assistant at CAD/CAM Lab.   **Jan2007- Jun2008**
  Advisor: Dr. B. Arezoo.
  Researched the computational methods of manufacturing feature recognition.

Research Interest

- Coarse-graining Methods, AdResS, H-AdResS.
- Soft Condensed Matter Physics, Elasticity of Soft Matters.
- Computational Mechanics, Molecular Dynamics, Nano-Science.
- Hydrodynamics, Complex Fluids, Microfluidics.
- Applied Mathematics, Stochastic Process, Complex Systems.
- Galactic Dynamics, Hyperbolic Geometry, Probability Theory

Honors and Awards

- Admitted to School of Cognitive Sciences, Institute for Research in Fundamental Sciences (IPM), August 2014.

- Admitted to Postgraduate Study at Engineering Faculty, University of Sydney, Sydney, Australia, May 2014.

- Recipient of International Center of Theoretical Physics (ICTP) traveling grant to present an article in *"Advanced Workshop on Interdisciplinary Views on Chromosome Structure and Function"*), Trieste, Italy, July 2014.

- Recipient of the Iranian Nano-Science Foundation Award, Dec. 2013.

- Admitted to the Master of Engineering program of Bioengineering Department at the University of California Berkeley, March 2013.

- Admitted to Guest Student Program, International Helmholtz Research School of Biophysics and Soft Matter (IHRS-BioSoft), Julich, Germany, 30 Jul- 4 Oct 2012. *Web page.*

- Recipient of grants from school of Mathematics, Institute for Researches in Fundamental Sciences(IPM), 2012-2014.

- Ranked as one of the top 5 graduate students of Mechanical Engineering at Sharif University of Technology among 90 Applied Design Mechanics students.

- Ranked 51st in Mechanical Engineering Graduate Entrance Exam, among 15 000 examinees.

- Ranked 310th in National University Entrance Exam, among 400 000 examinees.

Journal Papers

- O. Mashinchian, M. J. Dalby, H. Taghinejad, V. Satarifard, **M. Heidari**, M. Majidi, S. Sharifi, A. Peirovi, S. Saffar, M. Abdolahad, M. A. Shokrgozar, S. M. Rezayat, M. R. Ejtehadi, S. Bonakdar and M. Mahmoudi, Cell-Imprinted Substrates Act as Artificial Niche for Skin Regeneration, **ACS Appl. Mater. Interfaces, 2014, 6 (15), pp 13280−13292.** Highlighted in the USA news agency of *Nanowerk*.

- **M. Heidari**, M. Mehrbod, M. R. Ejtehadi, M. R. K. Mofrad, Collective Motions of Globular Polymers on an Adhesive Surface, to be submitted.

- **M. Heidari**, M. Mehrbod, M. R. Ejtehadi, M. R. K. Mofrad, Cooperation within Globule Polymers Enhances Adsorption Mechanism, submitted.

- **M. Heidari**, R. Farhoudi, M. Fotouhi, A. H. Abbasian, Oscillation Variations in a Inhomogenously Connected Neural Network. To be submitted.

- A. Fathizadeh, **M. Heidari**, B. Eslami-Mossallam, M. R. Ejtehadi, Confinement dynamics of a semiflexible chain inside nano-spheres, **Journal of Chemical Physics**, 139, 033912 (2013).

- M. Fotouhi, **M. Heidari**, M. Sharifitabar, Delayed Hebbian Learning Mechanism in Neural Field, Accepted for publication in **Biological Cybernetics**(2015).

- A. H. Abbassian, M. Fotouhi, **M. Heidari**, Neural Field with Fast Learning Dynamic Kernel, **Biological Cybernetics**(2012) 106(1):15-26.

- H. Gh. Saii, **M. Heidari**, V. P. Chirikov, Optimum Design of Half Car Model Suspension under Stochastic Excitation Using Minimum Crossing Threshold Theory, To be submitted to **Journal of Sound and Vibration**.

Scientific Reports

- M. Heidari, K. Müller, D. A. Fedosov, Modeling the dynamics of von Willebrand factor in flow, Oct. 2012.

- M. A. Jalali, M. Heidari, S. A. Davari, F. Nasiri, CFD simulation of the enclosure, Iranian National Observatory Project (INO), TR-R-123, Jul. 2012.

- M. A. Jalali, A. Kebriaee, A. Khoshnood, M. Heidari, CFD simulation of the peak, Iranian National Observatory Project (INO), TR-R-122, Dec. 2011.

Teaching Experience

- Physics Department, Sharif University of Technology.
Teaching Assistant of Graduate Fluid Dynamics.
Fall 2014, Lecturer: Prof. M. R. Ejtehadi.

- School of Mathematical Sciences, Sharif University of Technology.
Teaching Assistant of Undergraduate Engineering Mathematics.
Fall 2010, Lecturer: Prof. M. Fotouhi.

- School of Mechanical Engineering, Sharif University of Technology.
Teaching Assistant of Graduate Advanced Engineering Mathematics.
Fall 2009, Lecturer: Prof. M. S. Foumani.

- Department of Mechanical Engineering, Amirkabir University of Technology.
Teaching Computational Methods in Manufacturing, CAD/CAM Laboratory.
Spring 2008, Lab Chief: Prof. B. Arezoo.

Language

- Persian (Native), English (Fluent), French (Basic)

References   All references could be found in the hyper-links.