
CONTACT

INFORMATION

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EDUCATION

- **Ph.D.** in Mechanical Engineering (Applied Design) from Sharif University of Technology, Tehran, Iran, Jan 2008–Feb 2013. GPA: 18.13/20.
Thesis: Diffusion of lipids and proteins in cell membrane.
- **M.Sc.** in Mechanical Engineering (Biomechanics) from Sharif University of Technology, Tehran, Iran, Sep 2005–Jan 2008. GPA: 17.77/20.
Thesis: Physics of lipid membranes in shear flow.
- **B.Sc.** in Mechanical Engineering from Sharif University of Technology, Tehran, Iran, Sep 2001–Sep 2005. GPA: 17.7/20.
Thesis: Non-linear vibrations of high-speed hard disk drives.
- **B.Sc.** in Petroleum Engineering (Reservoir Engineering) from Sharif University of Technology, Tehran, Iran, Sep 2001–Sep 2005. GPA: 17.4/20.
Thesis: A feasibility study of EOR methods applied to fractured reservoirs.
- **Diploma** in Mathematics and Physics from **NODET** (National Organization for Development of Exceptional Talents), with a graduation GPA of 19.77/20, Tehran, Iran, 1997–2001.

POSITIONS

- Postdoctoral Fellow in the Mechanical Engineering Department, **Sharif University of Technology**, Iran, Mar 2013– Present.
- Lecturer, Sharif University of Technology (International Branch), Feb 2013 – Present.
- Visiting Student Research Collaborator in Complex Fluids Group in Mechanical and Aerospace Engineering at the School of Engineering and Applied Sciences, **Princeton University**, USA, Nov 2010– Mar 2011.
- Visiting scientist in theoretical soft-matter and biophysics group (ICS-2/IAS-2) at **Forschungszentrum Jülich**, Germany, Sep 2007–Nov 2007.
- Visiting scientist in theoretical soft-matter and biophysics group (ICS-2/IAS-2) at **Forschungszentrum Jülich**, Germany, Aug 2007.

RESEARCH INTERESTS

- Biophysics of Lipids and Transmembrane proteins in Cell Membrane
- Brownian Suspensions, Hydrodynamic Instability
- Perturbation Theories and Lie Group Symmetries
- Dynamical Systems & Chaos
- Reservoir Simulation, Porous Media and Multi-Phase Flow

HONORS AND AWARDS

- Research assistantship from Sharif University of Technology, Sep 2009–Present.

- Fellowship of talented students from Sharif University of Technology, Sep 2008–Sep 2009.
- Admitted to the Doctor of Philosophy program at Sharif University of Technology as a talented student , 2008.
- Admitted to the Master of Science program at Sharif University of Technology as a talented student , 2005.
- Ranked as one of the 10 top students of Mechanical Engineering at Sharif University of Technology among 135 students.
- Fellowship of NIOC, 2003–2005.
- Ranked 149th in the nation-wide entrance exam for Iranian universities among 400,000 examinees, 2001.

MEMBERSHIPS

- Member, **SPE**, Society of Petroleum Engineering.

PAPERS IN JOURNALS

- **A. Khoshnood**, M. A. Jalali, Instability of lipid membranes in shear flow, submitted to Physical Review E.
- **A. Khoshnood**, M. A. Jalali, Anomalous diffusion of proteins in sheared lipid membranes, submitted to Physical Review E.
- **A. Khoshnood**, M. A. Jalali, Long-lived and unstable modes of Brownian suspensions in microchannels, *Journal of Fluid Mechanics*, **701**, 407–418 (2012).
- **A. Khoshnood**, H. Noguchi, G. Gompper, Lipid membranes with transmembrane proteins in shear flow, *Journal of Chemical Physics*, **132**, 025101 (2010).
This article got the **cover of J. Chem. Phys.**.
It has also been featured by JCP: BioChemical Physics, **4**, 1 (2010)
and published online by Virtual Journal of Biological Physics Research, **419**, 2 (2010).
- **A. Khoshnood**, M. A. Jalali , Normal oscillatory modes of rotating orthotropic disks, *Journal of Sound and Vibration*, **314** (2008).
Some mode shapes have been displayed on **Wolfram Demonstrations Project**:
<http://demonstrations.wolfram.com/NormalOscillatoryModesOfRotatingOrthotropicDisks/>

PAPERS IN CONFERENCES

- **Khoshnood A.**, M.A. Jalali, Dynamical properties of lipid membrane with embedded proteins in shear flow, Dynamics Days Europe 2012, Gothenburg, Sweden, Sep 2-7, 2012.
- M.A. Jalali, **Khoshnood A.**, Stochastic oscillations in hard disk drives, The 8th seminars of differential equations, dynamical systems and their applications, Isfahan, Iran, July 19-21, 2008.
- Pendar H., Vossoughi Gh., **Khoshnood A.**, Poursamad A., Assisted Passive Snake Robots: Conception and Dynamic Modeling Using Kane Method, ASME International Mechanical Engineering Congress and Exhibition, Orlando, Florida, USA, November 5-11, 2005.

INVITED TALKS

- "Dynamics of Suspensions and Biomembranes in Flow Conditions", Department of Mechanical Engineering, Tehran University, Tehran, Iran, may 2013.

	<ul style="list-style-type: none"> - "Dynamics of Suspensions and Biomembranes in Flow Conditions", Department of Medical Engineering, Amir-Kabir University, Tehran, Iran, April 2013. - "Dynamics of Suspensions and Biomembranes in Flow Conditions", Department of Physics, Tehran University, Tehran, Iran, March 2013. - "Dynamics of Suspensions and Biomembranes in Flow Conditions", IPM, Tehran, Iran, January 2013. - "Biological Membranes in Shear Flow", Department of Biological Sciences, Institute for Advanced Studies in Basic Sciences(IASBS), Zanjan, Iran, May 2012. - "Low-Reynolds-number Flow of Brownian Suspensions in Microchannels", Department of Physics, Sharif University of Technology, Tehran, Iran, May 2012.
POSTERS	<ul style="list-style-type: none"> - Khoshnood A., M.A. Jalali, "Long-lived and Unstable Modes of Brownian Suspension in microchannels " Forschungszentrum Jülich, 2012. - Khoshnood A., H. Noguchi, G. Gompper, "Lipid Membranes with Transmembrane Proteins in Shear Flow", Tokyo University, August 2010.
TEACHING EXPERIENCE	<ul style="list-style-type: none"> - Physics I, Spring semester 2012-2013, Undergraduate. - Engineering Mechanics: Dynamics, Fall semester 2008-2009, Undergraduate, Teaching Assistant. - Chaotic Dynamics, Spring semester 2008-2009, Graduate, Teaching Assistant.
PREVIOUS RESEARCH	<ol style="list-style-type: none"> 1. A term paper: Maneuvers control of flexible spacecrafts with viscoelastic parts using Lyapunov's stability criterion, winter 2007. 2. A term paper: An experimental approach towards the viscoelastic properties of sheep's metacarpal bone under torsional test, summer 2006. 3. A review paper: Modeling of molecular motors, spring. 2006. 4. A term paper: Bifurcation and chaos in a simple passive bipedal gait, spring, 2006. 5. Work on an assisted passive snake robots: conception and dynamics modeling using Kane's method, 2004-2005. 6. Design and construction of a pneumatic wall-climbing robot, holding a pneumatic workshop, 2002. 7. Design and manufacture of a device capable of measuring concentration or density of a solution based on its resistivity, 2000.
LANGUAGES	<ul style="list-style-type: none"> ● Persian: Native ● English: Expert TOEFL PBT (580): writing 4/5. TOEFL IBT (97): Listening 25, Writing 22, Reading 28, Speaking 22. IELTS (7): Listening 7/9, Writing 7/9, Reading 7.5/9, Speaking 7/9. ● German, French and Arabic: Beginner

COMPUTER SKILLS

- Languages:
C++, Fortran, Pascal, Delphi.
- Software Packages:
Expert in MATLAB, Maple, Autodesk Mechanical Desktop, LAMMPS, Tecplot, L^AT_EX, MS Office, Povray, gnuplot.
Familiar with ADAMS, SolidWorks, Pro/Engineer, Ansys, Fluent, Gambit, Modal Analysis Software: STAR
- Operating Systems:
Expert in Windows, Linux and Mac OS X.

INDUSTRIAL EXPERIENCE

- Working in IKID, Iran Khodro Industrial Dies, in R&D department and proposing different designs for an hydraulic press table, summer 2003.
- Working in NIOC (National Iranian Oil Company) in Reservoir Engineering department, winter 2005.
- CFD simulation of air flow over the Iranian national observatory site, Summer 2010 – Spring 2011.