

# Jafar Ghazanfarian



Birth: Jan. 6, 1984

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## EDUCATIONS:

2007-2011

### **Ph.D. in Mechanical Engineering**

#### **Amirkabir University of Technology (Tehran Polytechnic)**

Major: Thermo-fluid engineering

Overall GPA: 19.46/20 (Ranked 1<sup>st</sup>)

Comprehensive Exam Mark: 17.17/20

Final Project: Numerical Simulation of Fluid Flow and Heat Transfer  
in Nano-channel using Dual-Phase-Lag Model and  
Atomistic Method of Thermal Lattice Boltzmann method

Thesis Grade: 19.93/20

Supervisor: Prof. A. Abbassi

2005-2007

### **Master of Science in Mechanical Engineering**

#### **Amirkabir University of Technology (Tehran Polytechnic)**

Major: Thermo-fluid

Overall GPA: 17.97/20 (Ranked 1<sup>st</sup>)

Final Project: Simulation of Flow and Heat Transfer over an  
Oscillating Cylinder

Thesis Grade: 19.87/20

Supervisor: Prof. M. R. Heyrani Nobari

2001-2005

### **Bachelor of Science in Mechanical Engineering**

#### **Tehran University**

Major: Thermo-fluid

Overall GPA: 16.36/20 (Among Top-10 Students)

Final Project: Investigation of Cryogenic Refrigeration System and its  
Applications

Project Grade: 18.5/20

Supervisor: Dr. H. Sharifi Bidgoli

1997-2001

### **Pre-University Certificate and High School Diploma**

#### **Zanjan SAMPAD**

Overall GPA: 19.20/20 (Ranked 2<sup>nd</sup>)

## RESEARCH INTERESTS:

- CFD and numerical grid generation
- Moving and Dynamic mesh
- Thermal Lattice Boltzmann methods
- Nano/Micro-scale heat transfer
- Convection and conduction heat transfer
- Thermal design of transformers

## HONORS:

|      |  |
|------|--|
| 2011 | Chosen as the <b>graduated outstanding PhD student</b> in Amirkabir University of Technology   |
| 2009 | The highest overall GPA among all students of Ph.D. of mechanical engineering in Amirkabir University of Technology from the beginning |
| 2009 | Ranked <b>1<sup>st</sup></b> among all PhD students of <i>Mechanical Engineering</i> in Amirkabir University of Technology             |
| 2008 | A member of Iranian national committee of elite students   |
| 2008 | Chosen as the <b>graduated outstanding PhD student</b> in Amirkabir University of Technology   |
| 2007 | Chosen as the <b>graduated outstanding MSc student</b> in Amirkabir University of Technology   |
| 2006 | Ranked <b>1<sup>st</sup></b> among all MSc students of <i>thermo-fluid</i> in Amirkabir University of Technology                       |
| 2005 | Ranked <b>149<sup>th</sup></b> among the 10,000 participants in the <i>nationwide High Education university entrance exam</i>          |
| 2001 | Ranked <b>304<sup>th</sup></b> among the 450,000 participants in the <i>nationwide university entrance exam</i>                        |
| 2000 | Ranked <b>2<sup>nd</sup></b> among all students in the high school and the pre-university center                                       |
| 1999 | Be chosen in the Second Stage of <i>Computer Olympiad</i>  |

## UNDERGRADUATE COURSES:

- Gas dynamics
- Turbo-machinery
- Fluid mechanics I and II
- Heat transfer II
- Thermodynamics laboratory
- Number of supervised BSc thesis: 7

## TEACHING EXPERIENCES:

- **Zanjan University**, 8 semesters from 2007 to 2011
- **Islamic Azad University of Abhar**, 2 semesters from 2009 to 2010

## EXPERIENCES:

- 2009** A member of scientific committee  
Sixth mechanical engineering student conference, Amirkabir University of Technology  
Head of *Computational mechanics* and *Fluid mechanics* fields
- 2008** Teaching Assistant  
Dept. of Mechanical Engineering, Amirkabir University of Technology  
Taught Advanced Convective Heat Transfer, Dr. A. Abbassi
- 2007** A member of editorial board of Ofogh magazine  
Dept. of Mechanical Engineering, Amirkabir University of Technology
- 2006** Teaching Assistant  
Dept. of Mechanical Engineering, Amirkabir University of Technology  
Taught Fluid Mechanics I, Dr. M. R. Heyrani Noubari
- 2004** Designing and manufacturing of an AC Dynamometer for Engine Testing  
*Iran Vehicle-Fuel-Environment Research Center*  
*Tehran University, Iran*
- 2003** Heat transfer design of transformers  
*Iran Transformer Research center*  
Iran-transfo Company, Zanjan, Iran

## PUBLICATIONS:

### International Journal Articles:

- 8- J. Ghazanfarian and A. Abbassi, "*Investigation of 2-D Transient Heat Transfer under the Effect of Dual-Phase-Lag Model in a Nanoscale Geometry*", International Journal of Thermophysics, Accepted article, In press, 2011.
- 7- J. Ghazanfarian and A. Abbassi, " **Reply to “Comment on ‘Heat transfer and fluid flow in microchannels and nanochannels at high Knudsen number using thermal lattice-Boltzmann method’”**", Physical Review E, Vol. 84, 048302, 2011.
- 6- J. Ghazanfarian and A. Abbassi, "*Heat transfer and fluid flow in microchannels and nanochannels at high Knudsen number using thermal lattice-Boltzmann method*", Physical Review E, Vol. 82, 026307, 2010, [Selected for Virtual Journal of Nanoscale Science & Technology].
- 5- M.R.H. Nobari, J. Ghazanfarian, "*Convective heat transfer from a rotating cylinder with inline oscillation*", International Journal of Thermal Science, Vol. 49, P. 2026-2036, 2010.
- 4- J. Ghazanfarian and M.R.H. Nobari, "*A numerical study of convective heat transfer from a rotating cylinder with cross-flow oscillation*", International Journal of Heat and Mass Transfer, Vol. 52, P. 5402–5411, 2009.
- 3- M.R.H. Nobari and J. Ghazanfarian, "*A numerical investigation of fluid flow over a rotating cylinder with cross flow oscillation*", Journal of Computers and Fluids, Vol. 38, 2026–2036, 2009, [Selected among 25 hottest articles from October to December 2009].

- 2- J. Ghazanfarian and A. Abbassi, "*Effect of boundary phonon scattering on dual-phase-lag model to simulate micro- and nano-scale heat conduction* ", International Journal of Heat and Mass Transfer, Vol. 52, P. 3706–3711, 2009.
- 1- J. Ghazanfarian and A. Abbassi, "*Mixed Convection in a Square Cavity Filled with a Porous Medium and Different Exit Port Position*", Journal of porous media, Vol. 10, P. 701-718, 2007.

### **International Conferences:**

- 4- J. Ghazanfarian, A. Abbassi, "*Numerical Investigation of Flow over Square Cylinder with Moving Walls and Incident Angle by CBS Method*", Proceedings of the 16<sup>th</sup> International Conference on Finite Elements in Flow Problems (FEF 2011), March 23-25, Munich, Germany, 2011.
- 3- I. Tasdighi, J. Ghazanfarian, "*Evaluation and Simulation of Surgery Room Air Conditioning System Using Fluent*", Proceedings of the 2nd Conference on Heating, Ventilating and Air Conditioning, June 1-3, Tehran, I.R. Iran, 2010.
- 2- J. Ghazanfarian, A. Abbassi, "*Simulation of Nano-scale Heat Conduction Using Dual-Phase-Lag Model and Introducing a General Time Dependent 1-D Model*", Proceedings of the 3rd Conference on Nanostructures (NS2010), March 10-12, Kish Island, I.R. Iran, 2010.
- 1- H. Basirat, J. Ghazanfarian, P. Forooghi, "*Implementation of Dual-Phase-Lag Model at Different Knudsen Numbers within Slab Heat Transfer*", Proceedings of the International Conference on Modeling and Simulation (MS'06), Aug 28-30, Konia, Turkey, 2006.

### **National Journal Articles:**

- J. Ghazanfarian and R. Hoseini Abardeh, "**A Glance at the Application of Cryogenics in the Space science and Biology**", Mechanical Engineering magazine, Y. 16, No. 55, Aban 1386, P. 62-68, (In Persian).
- P. Forooghi and J. Ghazanfarian, "**Review of Current Status of World Geothermal Energy-Part 1**", Ofogh Magazine, Vol. 16, P. 73-79, 2007.
- P. Forooghi and J. Ghazanfarian, "**Review of Current Status of World Geothermal Energy-Part 2**", Ofogh Magazine, Vol. 17, P. 60-66, 2007.

### **COMPUTER SKILLS:**

**Solvers:** Fluent, ANSYS

**Mesh generation software:** Gambit

**Graphical and technical plotting:** TecPlot, MATLAB

**Simulation Software:** Mechanical Desktop, AutoCAD

**Programming Languages:** FORTRAN, C++,

**Graphics:** Photoshop, Corel Draw

**And: Microsoft Office,  $\text{\LaTeX}$**

**LANGUAGES:**

- English, *Junior Proficiency Certificate*
- Turkish, *Azari*
- French, *Elementary*

**ENGLISH PROFICIENCY:**

**Junior Proficiency Certificate:** Iran Language Institute (ILI), 2001

**EXTRACURRICULAR ACTIVITIES:**

**Piano playing**

**Harmonica playing**

**Basketball:** Bronze medal of interuniversity Olympiad with the faculty basketball team,

**Football:** Member of the dormitory football team

**Making Jigsaw puzzles with high number of pieces. (Addicted!)**