

## Yaser Amini

Ph.D.  
Department of Mechanical Engineering,  
Persian Gulf University,  
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### Education:

- **Sept. 2009-Oct. 2014:** *Ph.D.*, Mechanical Engineering, School of Mechanical Engineering, Shiraz University, Shiraz, Iran  
**GPA:** 18.75 (Ranked 1<sup>st</sup>)  
**Thesis:** “Piezoelectric Energy Harvesting in Fluid-Structure Interaction Problems”  
**Supervisor:**
  - Dr. H. Emdad, Associate Professor of Mech. Eng., Shiraz University
  - Dr. M. Farid, Associate Professor of Mech. Eng., Shiraz University
- **Sept. 2006-Dec. 2008:** *M.Sc.*, Mechanical Engineering, School of Mechanical Engineering, Shiraz University, Shiraz, Iran  
**GPA:** 18.45 (Ranked 2<sup>nd</sup>)  
**Thesis:** “Numerical simulation of Fluid-Structural interaction Using SPH method”  
**Supervisor:**
  - Dr. H. Emdad, Associate Professor of Mech. Eng., Shiraz University
  - Dr. M. Farid, Associate Professor of Mech. Eng., Shiraz University
- **Sept. 2002–Sept. 2006:** *B.Sc.*, Mechanical Engineering, School of Engineering, Shiraz University, Shiraz, Iran  
**GPA:** 16.05 (Ranked 5<sup>th</sup>)  
**Project:** “Numerical Simulation of plate subjected to moving oscillator”  
**Supervisor:**
  - Dr. M. Farid, Associate Professor of Mech. Eng., Shiraz University

## **Publications:**

### **Journals:**

- [1] Y. Amini, P. Fatehi, M. Heshmati, H. Parandvar, "Time domain and frequency domain analysis of functionally graded piezoelectric harvesters subjected to random vibration: Finite element modeling", *Composite Structures*, 136 (2016) 384-393.
- [2] Y. Amini, H. Emdad, M. Farid, "Fluid–structure interaction analysis of a piezoelectric flexible plate in a cavity filled with a fluid", *Scientia Iranica*, 23 (2016) 142-151.
- [3] Y. Amini, H. Emdad, M. Farid, "Adjoint shape optimization of airfoils with attached Gurney flap", *Aerospace Science and Technology*, 41 (2015) 216-228.
- [4] Y. Amini, H. Emdad, M. Farid, "Finite element modeling of functionally graded piezoelectric harvesters", *Composite Structures*, 129 (2015) 165-176.
- [5] M. Heshmati, F. Daneshmand, Y. Amini, "Modified fixed-grid finite element method in shape optimization problems based on the gradientless method", *Scientia Iranica*, 21 (2014) 147-161.
- [6] Y. Amini, H. Emdad, M. Farid, "An accurate model for numerical prediction of piezoelectric energy harvesting from fluid structure interaction problems", *Smart Materials and Structures*, 23 (2014) 095034.
- [7] Y. Amini, H. Emdad, K. Akramian, F. Bordbar, "Investigation of the common nose cone shapes in different gas mixtures in high Knudsen numbers", *Scientia Iranica*, 19 (2012) 1511-1518.
- [8] Y. Amini, H. Emdad, M. Farid, "A new model to solve fluid–hypo-elastic solid interaction using the smoothed particle hydrodynamics (SPH) method", *European Journal of Mechanics - B/Fluids*, 30 (2011) 184-194.
- [9] M. Heshmati, B. Astinchap, M. Heshmati, M.H. Yas, Y. Amini, "An integrated numerical–experimental study on the optimum utilization of carbon nanotubes in laminated composites", *Journal of Sandwich Structures & Materials*, (2015) 1099636215615872.
- [10] S.E. Habibi, M. Hosseini, E. Izadpanah, Y. Amini, "Applicability of continuum based models in designing proper carbon nanotube based nanosensors", *Computational Materials Science*, 122 (2016) 322-330.
- [11] Y. Amini, H. Emdad, M. Farid, "Piezoelectric energy harvesting from fluid induced vibrations of vertical piezoelectric beams", *Scientia Iranica*
- [12] Y. Amini, M. Heshmati, P. Fatehi, S. E. Habibi "Energy harvesting from vibrations of a functionally graded beam due to moving loads and moving masses", *Journal of Engineering Mechanics*

### **Conferences:**

- ❖ M. Heshmati, M.H. Yas, Y. Amini, “Dynamic analysis of composite plates on the viscoelastic foundation subjected to moving oscillator using FSM” 2<sup>nd</sup> International Conference on Composites: Characterization, Fabrication and Application (CCFA-2) Dec. 27-30, 2010, Kish Island, Iran.
- ❖ S. Marvipour, M. Farid, Y. Amini, “Dynamic analysis of the variable thickness plate subjected to single and multi moving oscillator”, 15<sup>th</sup> Annual (International) Conference on Mechanical Engineering-ISME2007 May 14-16, 2007, Amir-Kabir University, Iran.

### **Fields of Interest:**

- Computational Fluid Dynamics (CFD)
- Numerical Methods(FVM, FEM)
- Fluid Structure Interaction (FSI)
- Piezoelectric Energy Harvesting (PEH)
- Smoothed Particle Hydrodynamics (SPH)
- Adjoint shape optimization
- Direct Simulation Monte Carlo (DSMC) and Molecular Dynamics (MD)
- Vibration analysis

### **Teaching Experience:**

**Courses taught:** Engineering Mathematics, Fluid Mechanics, Vibration, Thermodynamics

- Department of Mechanical Engineering, *Persian Gulf University*
- Department of Mechanical Engineering, *Yasuj University*
- Department of Mechanical Engineering, *Azad University, Neiriz Branch.*

### **Industrial Experience:**

- Design experience at Farasan Company, Shiraz, 1386.

### **Computer Skills:**

- **Programing languages:** C, C++ (objected oriented programing), FORTRAN, MATLAB
- **Software:** ANSYS Workbench, CFX, Fluent, Gambit, Autocad, OpenFoam, OpenLB
- **Operating systems:** Windows, Linux