


## PERSONAL INFORMATION

## Hamed Akhavan

 Rua da Firmeza 14, 3 dto, 4000-224 Porto (Portugal)

 (+351) 912641150

 hamed@fe.up.pt

Sex Male | Date of birth 19 Sep 1983 | Nationality Portuguese, Iranian

## EDUCATION AND TRAINING

7 Jul 2010–11 Dec 2015

## PhD

Universidade do Porto, Porto (Portugal)

- Under grant "SFRH/BD/81707/2011", financed by Portuguese Science and Technology Foundation (FCT) .
- Dissertation title: Non-linear vibrations of tow placed variable stiffness composite laminates
- Approved with distinction (Cum Laude)

1 Sep 2005–1 Mar 2008

## Master

Bu-Ali Sina University, Hamedan (Iran)

- Dissertation title: Exact solutions for vibration and buckling analysis of moderately thick rectangular plates under varying in-plane loading and resting on two-parameter elastic foundation
- GPA: 15.96/20
- Thesis Grade: 20/20

1 Sep 2001–1 Aug 2005

## Bachelor

Iran University of Science and Technology, Tehran (Iran)

- Dissertation title: Designing an integrated starter generator for hybrid automobiles
- GPA: 14.57/20

1 Sep 1997–1 Jun 2001

## Diploma in Math and Physics

Allame-Helli High School - National Organization for Development of Exceptional Talents (NODET), Hamedan (Iran)

GPA: 18.70/20

## WORK EXPERIENCE

2 Jan 2019–Present

## Researcher (with PhD contract)

INEGI - Instituto de Ciência e Inovação em Engenharia Mecânica e Engenharia Industrial, Porto (Portugal)

- Participation in the project "CT CETRIB 39/18 - POCI-01-0145-FEDER-030348 - Instabilidades aeroelásticas em painéis compósitos híbridos", financed by Portuguese Science and Technology Foundation (FCT)

13 Feb 2018–Present

## Lecturer

Universidade do Porto, Porto (Portugal)

- Master course of Computational Structural Dynamics

12 Jan 2016–31 Dec 2018

## Researcher (with PhD degree scholarship contract)

INEGI - Instituto de Ciência e Inovação em Engenharia Mecânica e Engenharia Industrial, Porto (Portugal)

- Participation in the project "NORTE-01-0145-FEDER-000022 - SciTech - Science and Technology for Competitive and Sustainable Industries", co-financed by Programa Operacional Regional do Norte (NORTE2020)
- Title of investigation: Flutter of tow placed variable stiffness composite laminates

4 Jul 2014–1 Oct 2014 **Visiting scholar**

University of Michigan, Ann Arbor, MI (United States)

1 Jun 2010–30 Jun 2011 **Researcher (with master degree scholarship contract)**

IDMEC - Instituto de Engenharia Mecânica - Pólo FEUP, Porto (Portugal)

- Participation in the project "PTDC/EME-PME/098967/2008 - Vibrations of variable stiffness composite laminated panels", financed by Portuguese Science and Technology Foundation (FCT).
- Development of a FORTRAN model for nonlinear vibration, static and dynamic analyses of variable stiffness laminates

1 Sep 2009–28 Feb 2010 **Lecturer**

University College of Abadani and Toseeh Roustá, Hamedan (Iran)

- Undergraduate course of Environment Environmental Service II (equivalent to Mechanical Instalments)

1 Sep 2008–28 Feb 2010 **Lecturer**

Jahad Daneshgahi Academic Institute, Hamedan (Iran)

- Undergraduate course of Mechanic Workshop

1 Sep 2008–1 Oct 2008 **Mechanical engineer**

Imen-Gas Gharb Co., Hamedan (Iran)

- Designing a truss for conveying chemical materials

1 Jan 2008–1 Jun 2008 **Sales manager**

Shayan Tarhe Javid Co., Tehran (Iran)

- Designing a homepage for the company using HTML
- Supervision of making metallic moulds
- Communicating between suppliers abroad and Iranian customers
- Conducting the booth of the company's Taiwanese partner in the International Iran Plast 2008 Exhibition

1 Jan 2007–31 Aug 2007 **Quality control manager**

Iran Engineering and Machine Manufacturing Co., Tehran (Iran)

- A machine manufacturing company as representative of German Aumund and Thyssenkrupp, 2007
- Control of quality and supervision on parts manufactured for three cement factories
- Increasing the productivity of the company from 15 tons to 25 tons, by improving time management and by reducing metal scraps

1 Jun 2004–1 Sep 2004 **Mechanical engineering technician**

Mehr Sanat Paya Co., Tehran (Iran)

- Supply and manufacturing of equipment from textile and cement plants

1 Jun 2003–1 Sep 2003

**Mechanical engineering technician**

Electron-X Research Center, Tehran (Iran)

- Manufacturing novel electrical and mechanical devices

1 Jun 2002–1 Sep 2002

**Mechanical engineering technician**

Abgin Madar Hegmataneh Co., Hamedan (Iran)

- Manufacturing electronic boards

PERSONAL SKILLS

Mother tongue(s)

Persian

Foreign language(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C1	C2	C1	C1	C1
TOEFL iBT (2009/08/30), Total Score: 92/120					
Portuguese	B1	B1	B1	B1	B1
B1-B2					

Levels: A1 and A2: Basic user - B1 and B2: Independent user - C1 and C2: Proficient user  
Common European Framework of Reference for Languages

Digital skills

- Computer Languages: Visual FORTRAN
- Scientific Applications: Mathematica, Maple, MATLAB
- Mechanical Software Packages: AutoCAD, Mechanical Desktop, Solid Works, ANSYS, ABAQUS
- Office Applications: Microsoft PowerPoint, Excel, Word
- Internet Development: HTML

ADDITIONAL INFORMATION

Citation and h-index (by Scopus)

- 712 citations to the papers
- *h*-index of 11

Publications

1. **H. Akhavan**, P. Ribeiro, Reduced-order models for non-linear flutter of composite laminates with curvilinear fibers, **AIAA Journal**, 2019, Doi: 10.2514/1.J057755 (**Impact factor** = 1.6).
2. **H. Akhavan**, B. Soleimani Roody, P. Ribeiro, A.R. Fotuhi, Modes of vibration, stability and internal resonances on nonlinear piezoelectric small-scale beams, **Communications in Nonlinear Science and Numerical Simulation**, 72 (2019) 88–107. (**Impact factor** = 3.2)
3. **H. Akhavan**, P. Ribeiro, Aeroelasticity of composite plates with curvilinear fibres in supersonic flow, **Composite Structures**, 194 (2018) 335–344. (**Impact factor** = 4.1)
4. **H. Akhavan**, P. Ribeiro, Geometrically non-linear periodic forced vibrations of imperfect laminates with curved fibres by the shooting method, **Composites Part B: Engineering**, 109 (2017) 286–296. (**Impact factor** = 4.9)
5. **H. Akhavan**, P. Ribeiro, Non-linear forced periodic oscillations of laminates with curved fibres by the shooting method, **International Journal of Non-Linear Mechanics**, 76 (2015) 176–189. (**Impact**

factor = 2.2)

6. **H. Akhavan**, P. Ribeiro, Free geometrically nonlinear oscillations of perfect and imperfect laminates with curved fibres by the shooting method, **Nonlinear Dynamics**, 81 (2015) 949-965. (**Impact factor** = 4.3)

7. **H. Akhavan**, P. Ribeiro, M.F.S.F. de Moura, Damage onset on tow-placed variable stiffness composite laminates, **Composite Structures**, 113 (2014) 419–428. (**Impact factor** = 4.1)

8. P. Ribeiro, **H. Akhavan**, A. Teter, J. Warminski, A review on the mechanical behaviour of curvilinear fibre composite laminated panels, **Journal of Composite Materials**, 48 (2014) 2761-2777. (**Impact factor** = 1.6)

9. **H. Akhavan**, P. Ribeiro, M.F.S.F. de Moura, Large deflection and stresses in variable stiffness composite laminate with curvilinear fibres, **International Journal of Mechanical Sciences**, 73 (2013) 14–26. (**Impact factor** = 3.6)

10. P. Ribeiro, **H. Akhavan**, Non-linear vibrations of variable stiffness composite laminated plates, **Composite Structures**, 94 (2012) 2424–2432. (**Impact factor** = 4.1)

11. **H. Akhavan**, P. Ribeiro, Natural modes of vibration of variable stiffness composite laminates with curvilinear fibers, **Composite Structures**, 93 (2011) 3040-3047. (**Impact factor** = 4.1)

12. Sh. Hosseini-Hashemi, H. Rokni D.T., **H. Akhavan**, Vibration analysis of radially FGM sectorial plates of variable thickness on elastic foundations, **Composite Structures**, 92 (2010) 1734-1743. (**Impact factor** = 4.1)

13. Sh. Hosseini-Hashemi, **H. Akhavan**, H. Rokni D.T., N. Daemi, A. Alibeigloo, Differential Quadrature analysis of functionally graded circular and annular sector plates on elastic foundation, **Materials & Design**, 4 (2010) 1871-1880. (**Impact factor** = 4.5)

14. Sh. Hosseini Hashemi, H. Rokni D.T., **H. Akhavan**, M. Omid, Free Vibration of Functionally Graded Rectangular Plates using First-order Shear Deformation Plate Theory, **Applied Mathematical Modelling**, 34 (2010) 1276-1291. (**Impact factor** = 2.6)

15. **H. Akhavan**, Sh. Hosseini Hashemi, H. Rokni D.T., A. Alibeigloo, Sh. Vahabi, Exact Solutions for Rectangular Mindlin Plates under In-Plane Loads Resting on Pasternak Elastic Foundation Part I: Buckling Analysis, **Computational Materials Science**, 44 (2009) 968-978. (**Impact factor** = 2.5)

16. **H. Akhavan**, Sh. Hosseini Hashemi, H. Rokni D.T., A. Alibeigloo, Sh. Vahabi, Exact Solutions for Rectangular Mindlin Plates under In-Plane Loads Resting on Pasternak Elastic Foundation Part II: Frequency Analysis, **Computational Materials Science**, 44 (2009) 951-961. (**Impact factor** = 2.5)

#### Conferences

1. B. Soleimani Roody, H. Akhavan, P. Ribeiro, A. Fotuhi, Free, periodic, large amplitude vibrations of small-scale piezoelectric beams by a modified couple stress theory, Euromech Colloquium 603, Porto, Portugal, September, 2018.

2. H. Akhavan, P. Ribeiro, Flutter analysis of composite laminates with curvilinear fibres, COMPDYN 2017, Rhodes Island, Greece, June, 2017.

3. H. Akhavan, P. Ribeiro, Increase of flutter speed using variable stiffness concepts in composite plates, ISME2017, Tehran, Iran, May 2017.

4. H. Akhavan, P. Ribeiro, Nonlinear vibrations of imperfect composite laminates with curvilinear fibres, ICCS19, Porto, Portugal, September 2016.

5. H. Akhavan, P. Ribeiro, Stress analyses in non-linear vibrations of composite plates with curvilinear fibres, Vibrationsbuckling2016, Porto, Portugal, March 2016.
6. H. Akhavan, P. Ribeiro, Forced periodic oscillations of variable stiffness composite laminates in the non-linear regime, Vibrations2015, Porto, Portugal, March-April 2015.
7. H. Akhavan, P. Ribeiro, Reduced-order models for the analysis of non-linear vibrations of variable stiffness composite laminated plates, Eurodyn2014, Porto, Portugal, June-July 2014.
8. J.D. Rodrigues, P. Ribeiro, H. Akhavan, Experimental and finite element modal analysis of variable stiffness laminated composite plates, 11th International Conference on Vibration Problems (ICOVP 2013), Lisbon, Portugal, September 2013.
9. H. Akhavan, P. Ribeiro, M. F. S. F. de Moura, Composite laminates with linearly varying fiber angles under static and dynamic loads, 54th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference, Boston, USA, April 2013.
10. H. Akhavan, P. Ribeiro, Frequency response and failure on-set on variable stiffness composite laminated plates, ICCS 17, Porto, Portugal, June 2013.
11. P. Ribeiro, H. Akhavan, J. Warminski, Frequency response of variable stiffness composite laminated plates in the non-linear regime: shooting with modes, Euromech Colloquium n. 541, Senigallia, Italy, June 2013.
12. P. Ribeiro, H. Akhavan, Periodic oscillations and stability of thin variable stiffness composite laminated plates, XXIII ICTAM, Beijing, China, August 2012.
13. H. Akhavan, P. Ribeiro, M. F. S. F. de Moura, Large deflection and stresses in variable stiffness composite laminates, ECCM15, Venice, Italy, June, 2012.
14. H. Akhavan, P. Ribeiro, Nonlinear vibration of variable stiffness composite plates using higher order theory, ENOC 2011, Rome, Italy, July 2011.
15. H. Akhavan, P. Ribeiro, Natural modes of vibration of variable stiffness composite laminates by third order shear deformation theory, ICCS16, Porto, Portugal, June, 2011.
16. H. Akhavan, P. Ribeiro, Large deflections of variable stiffness composite laminates by a higher order deformation theory, ICCS16, Porto, Portugal, June, 2011.
17. H. Kalhori, H. Akhavan, H. Rokni D.T., A. Alibegloo, Vibration analysis of functionally graded rectangular plates based on Mori-Tanaka homogenization scheme, 7th EUROMECH Solid Mechanics Conference, Lisbon, Portugal, September, 2009.
18. A. Alibegloo, M. Shakeri, H. Akhavan, Solutions for natural frequencies of moderately thick rectangular plates with four edges simply supported and resting on Pasternak foundation, The 15th Annual-International Conference on Mechanical Engineering, Tehran, Iran, May, 2007.
19. A. Alibegloo, H. Akhavan, Buckling loads for simply supported moderately thick rectangular plates having uniform loading on four edges and resting on Pasternak foundation, The 15th Annual-International Conference on Mechanical Engineering, Tehran, Iran, May, 2007.
20. M. Sedghi, A. Alavinia, H. Akhavan, Simulation of axisymmetric collapse of cylindrical tubes under axial loading, International Conference on Modeling & Simulation, Konya, Turkey, August, 2006.

**Student supervision**

- Co-supervision of a visiting PhD student, Batool Soleimany Roody, "Development of a non-linear piezoelectric size-dependent beam model, based on modified couple stress theory", University of Porto, 2017
- Supervision of a master student, Leonardo Miguel Brás da Costa, "Modes of vibration of a simple DNA shaped micro-molecule", University of Porto, 2019

**Editorial board**

Advances in Materials Science and Engineering (Hindawi)

**Chairing sessions in international conferences**

- Euromech Colloquium 603 (Dynamics of micro and nano systems), Porto, Portugal, September 2018
- 25<sup>th</sup> Annual International Mechanical Engineering Conference, (ISME2017), Tehran, Iran, May 2017
- International Conference on Advances in Vibrations (vibrations2015), Porto, Portugal, March 2015
- 17<sup>th</sup> International Conference on Composite Structures (ICCS17), Porto, Portugal, June 2013

**Organising workshops and colloquium**

- One of two local organisers of Euromech Colloquium 603 (Dynamics of micro and nano systems), Porto, Portugal, September 2018
- Lecturer in a workshop on "Variable Stiffness Composite Plates", Tarbiat Modares University, Tehran, Iran, May 2017
- Lecturer in a workshop on "Variable Stiffness Composite Plates", Iran University of Science and Technology, Tehran, Iran, May 2017
- One of the organisers of mini symposium 54 on "Variable Stiffness Composite Laminates", 17th International Conference on Composite Structures (ICCS17), Porto, Portugal, June 2013.

**Patents (Iran)**

- Patent number 012746, Designing and manufacturing an aerodynamic body and safety belt for racing Karts, December 2007
- Patent number 010780, Designing an integrated starter generator for national hybrid automobiles, November 2007

**Reviewer of international journals**

- AIAA Journal
- European Journal of Mechanics / A Solids (Elsevier)
- Polymer Composites (Wiley)
- Composites Part A: Applied Science and Manufacturing (Elsevier)
- Mechanics of Advanced Materials and Structures (Taylor & Francis)
- Nonlinear Dynamics (Springer)
- International Journal of Non-Linear Mechanics (Elsevier)
- Aerospace Science and Technology (Elsevier)
- Composite Structures (Elsevier)
- Thin-Walled Structures (Elsevier)
- Journal of Mechanical Engineering Science (SAGE)
- Journal of Materials: Design and Applications (SAGE)

**Participation in summer schools and courses**

- Advanced course of "Dynamic Stability and Bifurcation in Nonconservative Mechanics", International Centre for Mechanical Sciences (CISM), Udine, Italy, April 2017
- Advanced course of "Recent Developments in Theories and Analysis of Laminated Composite and Functionally Graded Beams, Plates, and Shells" by Professor Reddy, Porto, Portugal, June 2013
- Summer school of "Theories and Computational Models for Multilayered Composite Structures", International Centre for Mechanical Sciences (CISM), Udine, Italy, October 2012
- Summer school of "Advanced Topics in Numerical and Computational Bifurcation Analysis", Technical University of Denmark, Lyngby, Denmark, June 2011
- Workshop on "High Performance Computing", Institute of Telecommunication, University of Coimbra, Portugal, November 2010

**Honours and awards**

- Approved PhD dissertation with distinction (Cum Laude)
- Accepted for a full-scholarship PhD studentship by FCT at University of Porto, 2011-2015
- Designing and manufacturing four Karts (small racing automobiles) for the first time in Iran, 2006. A number of innovations, including designing and manufacturing a composite body, aluminium wheels, and the safety belt for the Karts, were used not only to make the Karts safer and stronger but also to reduce their cost of repair. Four Karts were delivered to the Hamedan Karting Circuit.

- Ranked top 0.15% among more than 480,000 participants in the university entrance exam for B.Sc. degree in Iran, 2001
- Ranked among students with brilliant talent, admission to high school of National Organisation for Development of Exceptional Talents, 1997

## References

- Prof. Pedro Leal Ribeiro, Ph.D.

Associate professor,  
Departamento de Engenharia Mecânica  
Universidade do Porto  
Porto, Portugal  
E-mail: pmleal@fe.up.pt  
Telephone: (+351) 22 5081713

- Prof. Marcelo Francisco Moura, Ph.D.

Associate professor,  
Departamento de Engenharia Mecânica  
Universidade do Porto  
Porto, Portugal  
E-mail: mfmoura@fe.up.pt  
Telephone: (+351) 22 5081 727

- Prof. Mohammad Riahi, Ph.D.

Professor,  
School of Mechanical Engineering  
Iran University of Science and Technology  
Tehran, Iran  
E-mail: riahi@iust.ac.ir  
Telephone: (+98) 21 77240200

- Prof. Akbar Alibeigloo, Ph.D.

Associate professor,  
Department of Mechanical Engineering  
Tarbiat Modares University  
Tehran, Iran  
E-mail: abeigloo@modares.ac.ir  
Telephone: (+98) 21 82883991