



# PROFESSIONAL PROFILE

**Dr. Pezhman Hassanpour, P.E.,  
Ph.D**

**Forensic Engineer**  
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## BIOGRAPHY

Dr. Pezhman Hassanpour joined Donan in 2016 as a forensic engineer based out of the firm's Los Angeles Office. He has eight years of engineering experience with particular focus in engineering education. Dr. Hassanpour's areas of expertise include mechanical failure, heat transfer, vibration and controls. His prior experience involves work in engineering analysis and design using analytical and numerical software. He is proficient in the following engineering software: MATLAB, COMSOL, ANSYS, AutoCAD and SolidWorks.

Dr. Hassanpour is a licensed professional engineer in California and Arizona. He earned a Doctorate Degree in Mechanical Engineering from the University of Toronto, and is an Assistant Professor of Mechanical Engineering at Loyola Marymount University in Los Angeles.

## REPRESENTATIVE EXPERTISE

Mechanical Failure  
Heat Transfer  
Vibrations and Controls

## PROJECT EXAMPLES

General Mechanical Failure  
Plumbing Failure  
Product Failure  
Vehicle Breakdown

## CERTIFICATIONS & LICENSES

Professional Engineer, California  
Professional Engineer, Arizona

## AFFILIATIONS

American Society of Mechanical Engineers (ASME)  
Institute of Electrical and Electronics Engineers (IEEE)

## EDUCATION

- |      |   |
|------|---|
| 2008 | <b>University of Toronto</b><br>Doctorate Degree, Mechanical Engineering            |
| 2004 | <b>Sharif University of Technology</b><br>Master of Science, Mechanical Engineering |
| 2002 | <b>University of Tehran</b><br>Bachelor of Science, Mechanical Engineering          |

## RELEVANT EXPERIENCE

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| 2016 - Present | <b>DONAN</b><br>Los Angeles, California<br>Forensic Engineer   |
| 2012 - Present | <b>Loyola Marymount University</b><br>Los Angeles, California<br>Assistant Professor of Mechanical Engineering |
| 2008-2011      | <b>University of Waterloo</b><br>Waterloo, Ontario<br>Post-Doctoral Fellow                                     |



## REFEREED JOURNALS

P. A. Hassanpour, P. M. Nieva, A. Khajepour, "Electrostatic Fringes Effect in Systems with Three Charged Parallel Micro-bams", *Journal of Applied Mathematical Modelling*, v. 37(4), 2013, pp. 1932-1947.

P. A. Hassanpour, P. M. Nieva, A. Khajepour, "A Passive Mechanism for Thermal Stress Regulation in Micro-machined Beam-type Structures: Modeling and Experiment", *Microsystem Technologies*, v. 8(5), 2012, pp. 543-556.

P. A. Hassanpour, P. M. Nieva, A. Khajepour, "Stochastic Analysis of a Novel Force Sensor Based on Bifurcation of a Micro-structure", *Journal of Sound and Vibration*, v. 330(3), 2011, pp. 5753-5768.

P. A. Hassanpour, E. Esmailzadeh, W. L. Cleghorn, J. K. Mills, "Experimental Measurement of Resonance Frequencies of Asymmetric Micro-Bridge Resonators", *Journal of Intelligent Material Systems and Structures*, v. 22(2), 2011, pp. 127-136.

P. A. Hassanpour, W. L. Cleghorn, E. Esmailzadeh, J. K. Mills, "Nonlinear vibration of micromachined asymmetric resonators", *Journal of Sound and Vibration*, v. 329(13), 2010, pp. 2547-2564.

P. A. Hassanpour, E. Esmailzadeh, W. L. Cleghorn, J. K. Mills, "Generalized orthogonality condition for beams with intermediate lumped masses subjected to axial force", *Journal of Vibration and Control*, v. 16(5), 2010, pp. 665-683.

P. A. Hassanpour, W. L. Cleghorn, E. Esmailzadeh, J. K. Mills, "Vibration Analysis of Micro-machined Beam-type Resonators", *Journal of Sound and Vibration*, v. 308(1-2), 2007, pp. 287-301.

P. A. Hassanpour, W. L. Cleghorn, E. Esmailzadeh, J. K. Mills, "Exact solution of the oscillatory behavior of a beam with a concentrated mass within its interval under axial force", *Journal of Vibration and Control*, v. 13, 2007, pp. 1723-1739.

## REFEREED CONFERENCE PROCEEDINGS

P. A Hassanpour, Monica H. Weaser, Ray H. Colquhoun, Khaled Alghemlas, Abdullah Alrashdan, "Experimental determination of the mass moment of inertia of a flywheel using dynamics and statistical methods", Accepted for publication in the Proceedings of the ASME 2015 International Mechanical Engineering Congress and Exposition, IMECE 2015, November 13-19, Houston, TX, USA.

Reid Byron, P. A Hassanpour, "Reducing Stress Concentration in RF MEMS Switch by Optimizing Serpentine Spring Design", Proceedings of the ASME 2015 International Design

Engineering Technical Conferences & Computers and Information in Engineering Conference, IDETC/CIE 2015, August 2-5, Boston, MA, USA.

P. A Hassanpour, "Nonlinear Forced Vibration of a Beam-Type Resonator with Attached Mass", Proceedings of the ASME 2014 International Mechanical Engineering Congress and Exposition, IMECE 2014, November 14-20, Montreal, Canada.

K. T. Peerless, J. M. Panosian, P. A. Hassanpour, "Design and Implementation of a General Control System Platform", Proceedings of the ASME 2014 International Mechanical Engineering Congress and Exposition, IMECE 2014, November 14-20, Montreal, Canada.

P. A. Hassanpour, A. J. Helms, "Low Cost Experimental Vibration Analysis of a Cantilever Beam under Base Excitation", Proceedings of the ASME 2014 International Mechanical Engineering Congress and Exposition, IMECE 2014, November 14-20, Montreal, Canada.

P. A Hassanpour, "Nonlinear Free Vibration of a Beam with Off-Axis Attached Mass", Proceedings of the ASME 2013 International Mechanical Engineering Congress and Exposition, IMECE 2013, November 15-21, San Diego, CA, USA.

P. A. Hassanpour, K. Behdinan, "Dynamic Analysis of a Beam-type Resonator with Off-axis Attached Mass", Proceedings of the ASME 2012 International Mechanical Engineering Congress and Exposition, IMECE 2012, November 9-15, Houston, TX, USA.

P. A. Hassanpour, P. M. Nieva, A. Khajepour, "Dynamic Analysis of Three Parallel Beams with Electrostatic Force Interaction", Proceedings of the ASME 2011 International Mechanical Engineering Congress and Exposition, IMECE 2011, November 11-17, Denver, CO, USA.

P. A. Hassanpour, P. M. Nieva, A. Khajepour, "Thermally-robust Asymmetric Resonators for Energy Harvesting Applications", Proceedings of the International Conference on Applied Mathematics, Modeling and Computational Science - AMMCS-2011, July 25 - 29, 2011, Waterloo, ON, Canada.

P. A. Hassanpour, P. M. Nieva, A. Khajepour, "Stochastic Analysis of a Nonlinear MEMS Force Sensor", Proceedings of the ASME 2010 International Design Engineering Technical Conference, IDETC/CIE 2010, August 15-18, 2010, Montreal, QC, Canada.

P. A. Hassanpour, C. T. Wong, P. M. Nieva, A. Khajepour, "Axial Force Regulation in MEMS Resonant Sensors", Proceedings of the ASME 2009 International Mechanical Engineering Congress and Exposition, IMECE 2009, November 13-19, Lake Buena Vista, FL, USA.

P. A. Hassanpour, P. M. Nieva, A. Khajepour, "A Novel Bi-stable Force Sensor: Theory and Modeling", Proceedings of the ASME 2009 International Mechanical Engineering Congress and Exposition, IMECE 2009, November 13-19, Lake Buena Vista, FL, USA.

P. A. Hassanpour, E. Esmailzadeh, W. L. Cleghorn, J. K. Mills, "Experimental Analysis of Vibration of Micromachined Resonators", Proceedings of the ASME 2008 International Mechanical Engineering Congress and Exposition, IMECE 2008, November 1-6, Boston, MA, USA.

P. A. Hassanpour, E. Esmailzadeh, W. L. Cleghorn, J. K. Mills, "Nonlinear Vibration of Micromachined Resonators with Attached Excitation/ Detection Electrostatic Comb-drives", Proceedings of the ASME 2008 International Mechanical Engineering Congress and Exposition, IMECE 2008, November 1-6, Boston, MA, USA.

P. A. Hassanpour, W. L. Cleghorn, E. Esmailzadeh, J. K. Mills, "Vibration Analysis of Axially Loaded Euler-Bernoulli Beams with Guided Mass", Proceedings of the ASME 2007 International Design Engineering Technical Conferences & Computers and Information in Engineering Conference, IDETC/CIE 2007, September 4-7, 2007, Las Vegas, NV, USA.

P. A. Hassanpour, W. L. Cleghorn, E. Esmailzadeh, J. K. Mills, "Vibrations of an Euler-Bernoulli Beam with A Guided Mass", Proceedings of 21st Canadian Congress of Applied Mechanics, CANCAM 2007, June 3-7, 2007, Toronto, ON, Canada.

P. A. Hassanpour, W. L. Cleghorn, E. Esmailzadeh, J. K. Mills, "Analytical model of a single stage compliant mechanism with flexible lever beam", Proceedings of SPIE Reliability, Packaging, Testing, and Characterization of MEMS/MOEMS VI, January 2007, San Jose, CA, USA.

P. A. Hassanpour, W. L. Cleghorn, E. Esmailzadeh, J. K. Mills, "Modeling and Analysis of a Resonant Sensor Actuated by a Bent Beam Thermal Actuator", Proceedings of the 17th IASTED International Conference on Modeling and Simulation MS 2006, May 2006, Montreal, QC, Canada.

P. Hassanpour Asl, H. Mehdigholi, E. Esmailzadeh, "Vibrations of Beams with Unconventional Boundary Conditions Using Artificial Neural Networks", Proceedings of the 20th Biennial Conference on Mechanical Vibration and Noise - VIB 2005, September 2005, Long Beach, CA, USA.

P. Hassanpour Asl, E. Esmailzadeh, H. Mehdigholi, "Application Of Artificial Intelligence In Vibration Analysis Of Beams With Unconventional Boundary Conditions", Proceedings of the International Conference on Mechatronics and Automation - ICMA 2005, July 29 to August 1, Niagara Falls, ON, Canada.

P. Hassanpour Asl, H. Mehdigholi, E. Esmailzadeh, "Vibration Analysis of Axially Loaded Bridges Traversed by Accelerating Vehicles with Passenger Dynamics", Proceedings of the 7th Biennial ASME Conference on Engineering Systems Design and Analysis - ESDA 2004, 19-22 July, Manchester, UK.