

# Ehsan Maani Miandoab



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## ➤ EDUCATION

- **2014-2015:** Post Doctoral Research Fellow, Center of Excellence in Design, Robotics, and Automation, Sharif University of Technology, Iran.  
Research Topic: *Effect of Surface Energy on Nano-Resonator Dynamic behavior*  
Sponsored by: National Elite Foundation
- **2009-2014:** Ph.D in Mechanical Engineering, University of Tehran, Tehran, Iran, GPA: 17.07 out of 20,  
Thesis Title: *“Effect of size on nano-resonator nonlinear dynamics and pull-in phenomena”*
- **2006-2009:** M.Sc. in Mechanical Engineering, University of Tehran, Tehran, Iran, GPA: 17.54 out of 20,  
Thesis Title: *“Smart materials for controlling chaos in friction-driven oscillator”*
- **2002-2006:** B.Sc. in Mechanical Engineering, University of Tehran, Tehran, Iran, GPA: 17.22 out of 20, as the First Rank Student, Thesis Title: *“Optimal design of impact damper for controlling nonlinear vibration of friction-driven”*

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## ➤ RESEARCH INTERESTS

- Molecular Dynamics
- MEMS\NEMS
- Intelligent Materials
- Chaos
- Nonlinear Vibration and Dynamics
- Control
- Perturbation Method

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## ➤ HONORS & AWARDS

- **Sep 2009–2013:** Research assistantship from National Elite Foundation,
- **Spring 2007:** Member of national talent foundation.
- **Spring 2005:** Ranked 2 in national mechanical engineering Olympiad.
- **Fall 2002:** Being grouped in the top **0.1%** of more than 600,000 participants in the National University Entrance Exam

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## ➤ PUBLICATIONS

- Book

**Dynamics Problems**, M. Nikkhah Bahrami, A. Allahverdizadeh, **E. Maani**, Jahangir Publications, 2011.

## ➤ Journal Papers

- 1 **Miandoab**, E.M, H.N. Pishkenari, A. Meghdari, M.Fathi, '*A General Closed-Form Solution for the Static Pull-In Voltages of Electrostatically Actuated MEMS\NEMS*', International journal of structural stability and dynamics, (Under Review).
- 2 **Miandoab**, E.M, H.N. Pishkenari, A. Meghdari, '*Effect of Surface on Nano-Beam Mechanical Behaviors: a Parametric Analysis*', Applied Physics D, (Under Review).
- 3 **Miandoab**, E.M, H.N. Pishkenari, A. Meghdari, '*Pull-in Voltage of Nano-Electro-Mechanical-System Incorporating Dispersion Forces and Surface Energy*', Micro and Nano letters, (Under Review).
- 4 **Miandoab**, E.M, H.N. Pishkenari, A. Meghdari, '*Effect of Surface Energy on Nano-Resonator Dynamic Behavior*', Physica E, (Under Review).
- 5 **Miandoab**, **E.M.** and A. Yousefi-Koma , "*Control of chaos in dry friction oscillator using semi-active magneto-rheological tuned liquid column damper*", Proceedings of the Institution of Mechanical Engineers, Part C: Journal of Mechanical Engineering Science, 2014, Vol. 228(14) 2495–2502
- 6 **Miandoab**, **E.M.**, H.N. Pishkenari and A. Yousefi-Koma, "*Chaos prediction in MEMS/NEMS resonators*", International Journal of Engineering Science, 2014, 82, 74-83
- 7 **Miandoab**, **E.M.**, A. Yousefi-Koma, and H.N. Pishkenari, Tajaddodianfar, F, "*Study of nonlinear dynamics and chaos in MEMS/NEMS resonators*", Communication on nonlinear science and numerical simulations, DOI: 10.1016/j.cnsns.2014.07.007
- 8 **Miandoab**, **E.M.**, A. Yousefi-Koma, and H.N. Pishkenari, "*Dynamic Analysis of Electrostatically Actuated Nano-Beam Based on Strain Gradient Theory*", International journal of structural stability and dynamics, 2015, 15 (4), 1450059.
- 9 **Miandoab**, **E.M.**, A. Yousefi-Koma, and H.N. Pishkenari, "*Poly Silicon Nano-Beam Model Based on Strain Gradient Theory*", Mechanics Research Communications, 2014. 62, 82-88.
- 10 **Miandoab**, **E.M.**, A. Yousefi-Koma, and H.N. Pishkenari, "*Nonlocal and strain gradient based model for electrostatically actuated silicon nano-beams*", Microsystem Technologies, 2014: DOI: 10.1007/s00542-014-2110-2
- 11 **Miandoab**, **E.M.**, A. Yousefi-Koma, and H.N. Pishkenari, Fathi,M, Nano-resonator frequency response based on strain gradient theory, Journal of Physics D: Applied Physics, 2014, 47 (36), 365303.
- 12 **Miandoab**, **E.M.**, A. Yousefi-Koma, H.N. Pishkenari, Hoorzad, H., "*Poly silicon Nano-beam Model Based on Modified Couple Stress and Nonlocal Elasticity Theories*", Physica E: Low-dimensional Systems and Nanostructures , 2014, 63, 223-228
- 13 Tajaddodian far, F., Nejat H., Haeri, M., **Miandoab**, **E.M.**, "*On the Dynamics of a Bistable MEMS Resonator: Analytical Solution and Nonlinear Behavior*", Communication on nonlinear science and numerical simulations, 2015, 20, 1078-1089.
- 14 **Miandoab**, **E.M.**, H.N. Pishkenari and A. Yousefi-Koma, "*Nonlinear Dynamics of Nano-Resonators: An Analytical Approach*", Microsystem Technologies, (Accepted)
- 15 Tajaddodian far, F., Nejat H., Haeri, M., **Miandoab**, **E.M.**, "*Size-dependent bistability of an electrostatically actuated arch NEMS based on stain gradient theory*", Journal Journal of Physics D: Applied Physics 48 (24), 245503
- 16 **Miandoab**, **E.M.**, F. Tajaddodiandar, H.N. Pishkenari and H. Ouakad, "*Analytical Solution for the Forced Vibrations of a Nano-Resonator with CubicNonlinearities Using Homotopy Analysis Method*", Int. J. Nanosci. Nanotechnol., Vol. 11, No. 3, Sept. 2015, pp. 159-166

- 17 **Miandoab, E.M.** and A. Yousefi-Koma, “*Adaptive sliding mode control of chaos in nonlinear friction-driven oscillator*”, International Journal of Mechanics. 2013, 7, 53-64
- 18 **Miandoab, E. M.**, A. Yousefi-Koma, and S. Hashemnia, “*Control of Chaos in Rate-Dependent Friction-Induced Vibration Using Adaptive Sliding Mode Control and Impulse Damper*”, Journal of Chaos, 2013, 10.1155/2013/862103.
- 19 **E. Maani**, A. Kosari, M. Fakoor, “*Two-objective Optimization of GEO Communication Satellite Trajectory Considering Continues Orbital Maneuver*”, Modares Journal of Mechanics Engineering, 2013.
- 20 **E. Maani**, A. Kosari, M. Fakoor, “*Two-objective Optimization of GEO Communication Satellite Trajectory Considering Impulsive Orbital Maneuver*”, Modares Journal of Mechanics Engineering, 2014.
- 21 **Maani Miandoab E**, Yousefi-Koma A, Ehyaci D. “*Optimal Design of an Impact Damper for a Nonlinear Friction-Driven Oscillator*”, International Journal of mathematical Models and methods in applied Sciences, 2008; 2: 236-243.

### ➤ Conference Papers

- 1 **E. Maani**, H. Nejat, A. Meghdari, “*A Novel Approach for static pull-in voltage of MEMS/EMS*”, ISME 2016.
- 2 **E.Maani**, A. yousefi-Koma, “*MR damper for controlling the chaotic vibration of full- vehicle model*”, 4th International Interdisciplinary Chaos Symposium, Antalya, Turkey, 2012.
- 3 **E. Maani**, A. yousefi-Koma, “*Chaos control of dry friction oscillation using liquid column damper*”, 4th International Interdisciplinary Chaos Symposium, Antalya, Turkey, 2012.
- 4 **E. Maani**, M.R. Haeri Yazdi, “*MR damper for controlling chaos in systems with limited power supply*”, the 16th International Congress on Sound and Vibration, Krakow, Poland, 5-9 July 2009.
- 5 **E. Maani**, A. Yousefi-Koma, S.Farokhi, “*Impulse damper for controlling friction-driven oscillator with limited power supply*”, 16th Congress on Sound and Vibration, Krakow, Poland, 5-9 July 2009.
- 6 M. Ataie, A. Yousefi-Koma, **E. Maani**, “*Impulse damper to control a nonlinear friction-driven oscillator*”, 17th. Annual Conference on Mechanical Engineering-ISME2009, May, 2009.
- 7 AA. Atae, **E. Maani**, S. Mirjavadi, A. babakhani, “*A parameter-effect stability investigation of friction-driven oscillating systems*”, 16th Congress on Sound and Vibration, Krakow, Poland, 5-9 July 2009.
- 8 S. Farokhi, A. Yousefi-koma and **E.Maani**, “*Design and fabrication of friction driven oscillator for investigation and control of chaotic and non-linear systems*”, ICME2009, Birjand, 2009.
- 9 M. Shameli, **E. Maani**, M. Deliri, “*Tuned Liquid Column Damper for Controlling Non-Linear Friction Driven Oscillator*”, ISME, Shiraz, 2011.
- 10 M. Fathi, A. Yousefi-Koma, **E. Maani**, “*Analytical Analysis of an Electro Statically Actuated Nano Beam Based on couple stress theory*”, ISAV, Tehran, 2012.
- 11 S. Hashemi, A. Yousefi-Koma, **E. Maani**, “*Impulse Damper for controlling beam lateral vibrations*”, ISAV , Tehran, 2012
- 12 N. Noori, A. Yousefi-Koma, **E. Maani**, “*Vibration Control of Chaotic Systems with Magneto-Rheological Tuned liquid column damper*”, ISAV, Tehran, 2012.
- 13 **E. Maani**, A. Yousefi-Koma, “*Optimal design of impact damper for nonlinear Non-Linear Friction Driven Oscillator control*”, WSEAS, Istanbul, Turkey, 2008.
- 14 M. Hamed, M. Hamed, **E. Maani**, “*An Adaptive Sliding Mode Controller for Automated Guided Vehicle Trajectory Tracking*” International Conference on Machine Learning, Electrical and Mechanical Engineering (ICMLEME'2014). Dubai, 2014.

- 15 F. Tajaddodianfar, M. R. Haeri Yazdi, H. Nejat Pishkenari, **Maani E.**, “*Nonlinear Dynamics of Electrostatically Actuated Micro-resonator: Analytical Solution by Homotopy Perturbation Method*”, IEEE/ASME International Conference on Advanced Intelligent Mechatronics, 2014, France.

## ➤ REFERENCES

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- Dr. Mansoor Nikkhah Bahrami, PhD, Professor
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