

CURRICULUM VITA



M.T.AHMADIAN

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EDUCATION:

Ph.D. MECHANICAL ENGINEERING, UNIVERSITY OF KANSAS,
LAWRENCE, KS 66044 USA, 1986.

Ph.D. SPACE & Plasma PHYSICS, UNIVERSITY OF KANSAS,
LAWRENCE, KS 66044 USA, 1980

AWARDS:

- Selected as top 1% world scientists by Thomson Reuters every year for the last five years.
- Selected as the best researcher by the Sharif University Steering Committee.
- Selected as the best contribution in the advancement of Mechanical Engineering Society by ISME (Iranian Society of Mechanical Engineerings)
- Selected as the best contribution in the advancement of Acoustic and Vibration Society by ISAV (Iranian Society of Acoustic and Vibration)

PROFESSIONAL EXPERIENCE:

- ❖ 1984-1985
 - Assistant Professor, University of Missouri at Spring Field.
 - Teaching Courses:
Application of Micro Processors in Engineering, Logic Design.

- ❖ 1985-1988
 - Assistant Professor, Department of Mechanical Engineering, University of Kansas at Lawrence.
 - Teaching Courses:
Application of Micro Processors in Mechanical Engineering, Control, Strength of Material.

- ❖ 1989-Present
 - School of Mechanical Engineering, Sharif University of Technology, Tehran, Iran.
 - Teaching Courses:
Strength of Material, Vibration, Dynamics, Advanced Vibration, Non Linear Vibration, Finite Element Methods, Advanced Finite Element Method

RESEARCH INTREST

- Soft tissue engineering specially performance of heart, brain , liver and kidney.
- Biomems and cell deformation.
- Health Related Topics such as Design of Medical Devices, Kids Innovation Instrumentation

INDUSTRIAL EXPERIENCE

- Design of large suspended heat exchangers
- Vibration- isolation of mechanical systems
- Design and sample manufacturing of a data transfer system
- Program development for ECU false detection for car manufacturers
- Design and sample manufacturing of a Heart Pump (Left Venticular Assisted Device)
- Design and sample manufacturing of a HIFU Device for Tumour Cancer Treatment

H- index: 40

PUBLICATIONS:

Journal Publications:

1. study on the buckling behavior of nonlocal nanoplate submerged in viscous moving fluid, Arpanahi(Accepted for publication)
2. Mahmood Chahari, Mohamad Taghi Ahmadian, Keikhosrow Firoozbakhsh, Nonlinear dynamic analysis of electrostatically actuated dual-axis micromirrors", Journal of the Brazilian Society of Mechanical Sciences and Engineering (2023), Volume 179.
3. EhsanTaati, Famida Fallah, Mohamad Taghi Ahmadian, "Nanoscale flow-induced nonlinear vibration of multilayer graphene based-resonators: Slip and transition flow regimes", Journal of Sound and Vibration (2023), Volume 553, 117665
4. Ahmad Boroumand, Mehrnoush Mehrarya, Ashkan Ghanbarzadeh-Dagheyany, Mohammad Taghi Ahmadian, " Numerical and experimental evaluation of ultrasound-assisted convection enhanced delivery to transfer drugs into brain tumors", Journal of Scientific Reports (2022), Volume 12, Article number: 19299
5. EhsanTaati, Famida Fallah, Mohamad TaghiAhmadian, "On nonlinear free vibration of externally compressible fluid-loaded sandwich cylindrical shells: Curvature nonlinearity in bending and impermeability condition", Thin-Walled Structures (2022), Volume 179, 109599
6. AshkanGhanbarzadeh-Dagheyany, Vahid AminNili, MehdiEjtehad, RezaSavabi, ZahraKavehvas, Mohammad TaghiAhmadian, Bijan VosoughiVahdat, "Time-domain ultrasound as prior information for frequency-domain compressive ultrasound for intravascular cell detection: A 2-cell numerical model ", Ultrasonics (2022), Volume 125, 106791
7. Ali Ghaheri, Mohamad Taghi Ahmadian, Famida Fallah, "Free vibration analysis of a fluid-filled functionally graded spherical shell subjected to internal pressure", Acta Mechanica (2022), DOI:10.1007/s00707-022-03262-y
8. Farshad Taheran, Mohammad Taghi Ahmadian, Vahid Monfared ,Davood Toghraie, "Size effects on stability and bifurcation of nonlinear viscoelastic microcantilevers based on strain gradient", Journal of the Brazilian Society of Mechanical Sciences and Engineering (2022), Volume 44.

9. Ehsan Taati, Famida Fallah, M.T.Ahmadian, "Subsonic and supersonic flow-induced vibration of sandwich cylindrical shells with, *International Journal of Mechanical Sciences*", *International Journal of Mechanical Sciences*, (2022), Volume 215, 106918
10. Hossein Naderi, Mohammadmahdi Mehrabi, Mohammad Taghi Ahmadian, "Adaptive fuzzy controller design of drug dosage using optimal trajectories in a chemo immunotherapy cancer treatment model", *Journal of Informatics in Medicine Unlocked* (2021), Volume 27, 2021, 100782
11. Ehsan Taati, Famida Fallah, Mohamad Taghi Ahmadian, "Closed-form solution for free vibration of variable-thickness cylindrical shells rotating with a constant angular velocity", *Journal of Thin-Walled Structures* (2021), Volume 166, 108062
12. Hesam Hoursan, Farzam Farahmand, M. T. Ahmadian, Sadegh Masjoodi, "Anisotropic Finite Element Modelling Of Traumatic Brain Injury: A Voxel-Based Approach", *Journal of Scientia Iranica* (2021), 28(3), 1271-1283
13. Farshad Taheran, M. T. Ahmadian, Keikhosrow Firoozbakhsh, "Nonlinear oscillations of viscoelastic microcantilever beam based on modified strain gradient theory", *Journal of Scientia Iranica* (2021), 28(2), 785-794
14. Hesam Hoursan, Farzam Farahmand, Mohammad Taghi Ahmadian, "Effect of axonal fiber architecture on mechanical heterogeneity of the white matter—a statistical micromechanical model", *Journal of Computer Methods in Biomechanics and Biomedical Engineering* (2021), 17 May 2021, 1-13
15. Mostafa Irannejad Parizi, Mohammad Taghi Ahmadian, Hadi Mohammadi, "Interaction analysis of a pregnant female uterus and fetus in a vehicle passing a speed bump", *Journal of Biomechanics* (2021), Volume 118, 110257
16. Ashkan Ghanbarzadeh-Dagheyana, Juan Heredia-Juesas, Chang Liub, Ali Molaei , Jose Angel Martinez-Lorenzo, Bijan Vosoughi Vahdat , Mohammad Taghi Ahmadian, " A Holey Cavity For Single-Transducer 3D Ultrasound Imaging With Physical Optimization", *Signal Processing* (2021), 179 (2021) 107826
17. Hesam Hoursan, Farzam Farahmand, Mohammad Taghi Ahmadian, "A Three-Dimensional Statistical Volume Element for Histology Informed Micromechanical Modeling of Brain White Matter", *Annals of Biomedical Engineering* volume 48, pages1337–1353(2020) <https://doi.org/10.1007/s10439-020-02458-4>

18. Ehsan Taati, Vahid Borjalilou, Famida Fallah, Mohamad Taghi Ahmadian, "On size-dependent nonlinear free vibration of carbon nanotube-reinforced beams based on the nonlocal elasticity theory: Perturbation technique", *Mechanics Based Design of Structures and Machines* (2020), doi.org/10.1080/15397734.2020.1772087
19. Mostafa Irannejad Parizi, Mohammad Taghi Ahmadian, Hadi Mohammadi, " Rigid-Bar Loading on Pregnant Uterus, and Development of Pregnant Abdominal Response Corridor, based on Finite Element Biomechanical Model", *Journal for Numerical Method in Biomedical Engineering* (2020) 36(1)
20. Hesam Hoursan, Farzam Farahmand, M. T. Ahmadian, "A Novel Procedure For Micromechanical Characterization Of White Matter Constituents At Various Strain Rates", *Journal of Scientia Iranica* (2020) 27(2), 784-794
21. Hamed Jafarishad, Mohammad Taghi Ahmadian, " Dynamic and vibration analysis of a 3-serial-link micro/nanomanipulator with piezoelectric actuation", *Journal of Microsystem Technologies* (2020)
22. Ali Ebrahimi-Mamaghani, Seyed Hamed Mirtalebi, Mohammad-Taghi Ahmadian, "Magneto-mechanical stability of axially functionally graded supported nanotubes", *Materials Research Express* (2020) 6(12)
23. Anoshe Ghanbarzadeh-Daghian , Mohammad Taghi Ahmadian, Ashkan Ghanbarzadeh-Dagheyani, "Quick, Single-Frequency Dielectric Characterization of Blood Samples of Pediatric Cancer Patients by a Cylindrical Capacitor: Pilot Study", *Journal of Electronics* (2020), 9, 95; doi:10.3390/electronics9010095
24. Vahid Borjalilou, Ehsan Taati, Mohamad Taghi Ahmadian, "Bending, buckling and free vibration of nonlocal FG-carbon nanotube-reinforced composite nanobeams: exact solutions", *SN Applied Sciences* (2019) 1:1323, doi.org/10.1007/s42452-019-1359-6
25. Ahad Shoghmand Nazarloo, Mohammad Taghi Ahmadian and Keikhosrow Firoozbakhsh, " On the mechanical characteristics of graphene nanosheets: a fully nonlinear modified Morse model", *Journal of Nanotechnology* (2019), 13;31(11):115708. doi: 10.1088/1361-6528/ab598e
26. Abdolreza Pasharavesh, MT Ahmadian, "Toward wideband piezoelectric harvesters through self-powered transitions to high-energy response", *Journal of Vibration and Acoustic* (2019) VIB-18-1206

27. Mohammad Mohajery, Mohammad Taghi Ahmadian, "Optimum recovery time for cyclic compression tests on bovine brain tissue", *Journal of Scientia Iranica* (2019) *Scientia Iranica A* (2019) 26(4), 2203-2211
28. Seyed Hamed Mirtalebi, Mohamad Taghi Ahmadian, Ali Ebrahimi-Mamaghani, "On the dynamics of micro-tubes conveying fluid on various foundations", *Journal SN Applied Sciences* (2019) 1:547
29. A. Karimzadeh, M.T. Ahmadian, "Vibrational characteristics of size dependent vibrating ring gyroscope", *Journal of Scientia Iranica* (2018) 25(6),3151-3160
30. Abdolreza Pasharavesh, MT Ahmadian, H Zohoor, "Complex modal analysis and coupled electromechanical simulation of energy harvesting piezoelectric laminated beams", *Proc IMechE Part C: J Mechanical Engineering Science* (2018) 1-12
31. A. Shoghmand, M.T. Ahmadian, "Dynamics and vibration analysis of an electrostatically actuated FGM microresonator involving flexural and torsional modes", *International Journal of Mechanical Sciences* (2018) vol 148, 422-441
32. K. R. Kashyzadeh, GH. Farrahi, M Shariyat, M.T. Ahmadian, "Experimental accuracy assessment of various high-cycle fatigue criteria for a critical component with a complicated geometry and multi-input random non-proportional 3D stress components", *Engineering Failure Analysis* (2018) vol 90, 534-553
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34. Samaneh Haddadi, Mohammad Taghi Ahmadian, "Analysis of nonlinear acoustic wave propagation in HIFU treatment using Westervelt equation", *Journal of Scientia Iranica* (2018) 25(4), 2087-2097
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- in Mechanical Properties prediction of Mouse Oocyte and Embryo Cells at Large Deformations”, *Journal of Scientia Iranica*. (2018) 25(2), 700-710
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41. A. Taraghi Osguei, M.T. Ahmadian, M. Asghari, N.M. Pugno, “Free vibration analysis of cylindrical panels with spiral cross section,” *International Journal of Mechanical Sciences* 133 (2017) 376–386
42. Pasharavesh, A., Ahmadian, M.T. & Zohoor, H, “On the energy extraction from large amplitude vibrations of MEMS-based piezoelectric harvesters”, *Journal of Acta Mechanica* (2017) doi:10.1007/s00707-017-1864-x
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44. Mohamad T. Ahmadian, Hamed Jafarishad, “Design and analysis of a 3-link micro-manipulator actuated by piezoelectric layers”, *Journal of Mechanism and Machine Theory* 112 (2017) 43–60
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Cylinder Subject to a Localized Laser Beam”, Journal of Heat Transfer JUNE (2017), Vol. 139 / 062701-1

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50. K. Reza Kashyzadeh, G. H. Farrahi, M. Shariyat, M. T. Ahmadian, “Experimental and Finite Element Studies on Free Vibration of Automotive Steering Knuckle”, International Journal of Engineering (2017). 30(11), 1776-1783
51. Abdolreza Pasharavesh. M. T. Ahmadian. H. Zohoor, “Electromechanical modeling and analytical investigation of nonlinearities in energy harvesting piezoelectric beams”, International Journal of Mechanics and Materials in Design (2017). 13(4), 499-514
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53. D. Singh, K. Firouzbakhsh, M. T. Ahmadian, “Laser Keratoplasty in Human Eye Considering the Fluid Aqueous Humor and Vitreous Humor Fluid Flow”, International Journal of Mechanical and Mechatronics Engineering (2017), 11(4)
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58. B. Zahiri1, M.T. Ahmadian, "Fine-tuned double-deck Stewart platform using base excitation with a 6DOF piezo driven hexapod", (2015)
59. M. Daeichi, M.T. Ahmadian, "Application of Variational Iteration Method to large vibration analysis of slenderness beams considering mid-plane stretching", *Scientia Iranica*, (2015) Volume 22 - Number 5
60. M. Rahaeifard, M.T. Ahmadian, "On pull-in instabilities of microcantilevers", *International Journal of Engineering Science*, Vol 87 (2015), pp 23-31.
61. M. Rahaeifard, M.T. Ahmadian, K. Firoozbakhsh," Vibration analysis of electrostatically actuated nonlinear microbridges based on the modified couple stress theory", *Journal of Applied Mathematical Modelling*, (2014)
62. M. Rahaeifard, M.T. Ahmadian, K. Firoozbakhsh," A strain gradient based yield criterion", *International Journal of Engineering Science*, 77 (2014) 45–54
63. M.H. Kahrobaiyan, M. Asghari, M.T. Ahmadian, " A Timoshenko beam element based on the modified couple stress theory", *International Journal of Mechanical Sciences*, Volume 79, (2014), pp 75-83
64. M.H.Kahrobaiyan, M.Asghari, M.T.Ahmadian. "A strain gradient Timoshenko beam element: application to MEMS". *Acta Mechanica*, Volume 226, (2014), pp 505-525
65. MMS. Fakhrabadi, A. Rastgoo, M.T.Ahmadian, "Non-linear behaviors of carbon nanotubes under electrostatic actuation based on strain gradient theory", *International Journal of Non-Linear Mechanics*, Volume 67, (2014), pp 236-244
66. MMS. Fakhrabadi, A. Rastgoo, M.T.Ahmadian, "Size-dependent instability of carbon nanotubes under electrostatic actuation using nonlocal elasticity", *International Journal of Mechanical Sciences*, Volume 80,(2014), PP 144-152

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68. R. Saljooghi , M. T. Ahmadian, G. H. Farrahi,"Vibration and buckling analysis of functionally graded beams using reproducing kernel particle method", *Scientia Iranica*, Volume 21 - Number 6 (2014),pp 1896-1906
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81. R.A. Jafari-Talookolaei ,M.H. Kargarnovin, M.T. Ahmadian “Vibration analysis of delaminated Timoshenko beams under the motion of a constant amplitude point force traveling with uniform velocity”, INTERNATIONAL JOURNAL OF MECHANICAL SCIENCES, 2013
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Timoshenko Beam Subjected to a Moving Oscillatory Mass”, *Mechanics Based Design of Structures and Machines* 2012

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