

MirMohammad Ettefagh (Updated on February, 08, 2023)

Associate Professor, Mechanical Eng. Dep. University of Tabriz

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Scopus ID: 56063516300

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Working for more than 20 years in vibration signal analysis, made me highly experienced in performing academic and industrial projects, related to Condition Monitoring (CM) of the rotary machines, Structural Health Monitoring (SHM) and Modal Analysis (MA) of structures and Parallel Robots (PR) applied in Advanced Manufacturing (AM). Moreover, my areas of expertise are the simulation of complex dynamic systems and applying Artificial Intelligence (AI) methods for damage detection in mechanical and structural systems. Most of my research outcomes are published in high-ranked journals with high citation.

EDUCATION AND DEGREES AWARDED

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| 2004 - 2009 | PhD Dynamics & Vibration (Vibration Signal Processing & CM/SHM)
University of Tabriz
Thesis: Fault diagnosis of time-varying systems using parametric modeling. |
| 2002 - 2004 | M.Sc. Dynamics & Vibration (Modal Analysis)
University of Tabriz
Thesis: Damage detection of beam-like structures in the frequency domain. |
| 1997 - 2002 | B.Sc. Mechanical Engineering (Applied Design)
University of Tabriz |

ACADEMIC POSITIONS

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| 2015 - Present | Associate Professor, Mechanical Eng. Dep. University of Tabriz |
| 2009 - 2015 | Assistant Professor, Mechanical Eng. Dep. University of Tabriz |

ADMINISTRATIVE POSITIONS

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| 2018- Present | Administrator of computer simulation Lab. in Mechanical Eng. Dep. University of Tabriz |
| 2016- Present | Administrator of talent students in Mechanical Eng. Dep. of University of Tabriz |
| 2018- Present | Administrator of Mechanical Eng. Scientific Olympiad in North-West region |
| 2013- Present | Administrator of Auto-mechanic work-shop in Mechanical Eng. Dep. University of Tabriz |
| 2009 – 2013 | Deputy head of Mechanical Eng. Dep. University of Tabriz |
| 2022- Present | Deputy head of Mechanical Eng. Dep. University of Tabriz |

SKILLS SUMMARY

- Performing vibration signals processing in LabView, MATLAB and MEscape in academic & industrial projects applied in CM, SHM and MA
- Applying National Instrument and B&K data acquisition systems, sensors and actuators for MA, CM and SHM
- Utilizing the shakers with different sizes and tonnages to actuate the workpieces for MA, CM and SHM purposes
- Performing experimental Modal Analysis tests and model updating on parallel mechanisms and robots, applied as machine tools in advanced manufacturing for chattering avoidance
- Performing experimental Modal Analysis tests on music instruments for the extraction of vibration patterns
- Performing experimental Modal Analysis tests on different structures
- Establishing dynamic modeling, simulation and AI-based optimization algorithms and computer programming of complex systems (such as advanced robots, parallel mechanisms, offshore structures, floating wind turbine, biomechanics and human body models) using MATLAB
- Developing vibrational characteristics of work/sports shoe using advanced dynamic modeling of the human body and experimental tests to prevent severe injuries and fatigue on athletes
- Managing academic and practical projects with Condition Monitoring (CM), Structural Health Monitoring (SHM) and Modal Analysis of Parallel Robots subjects
- Establishing Finite Element Modeling (FEM) of parallel mechanisms/robots and structures in ANSYS software
- Setting up an advanced laboratory of CM, SHM and Modal Analysis (Advanced vibration sensors and actuators) in academic and industrial sections
- Teaching Dynamics, Vibration, Mechanisms courses and related laboratories
- Teaching “Modeling and Simulation of dynamic systems” and “Advance Mechanism Design” courses at graduate levels
- Scientific writing
- Group and project leadership
- Computer literacy and proficiency in Microsoft Office & Web tools

AWARDS, GRANTS AND ACHEVEMENTS

- **Visiting University of West Attica (Greece) Grant**, Erasmus⁺ International Credit Mobility Program, 2022
Achievements:
 - Formation of intercultural experience to identify both educational and scientific research directions
 - Exchanges of good practices concerning international relation and scientific research
 - Establishing of network for communication and future corporation
- **INSF Research Grant**, Iran National Science Foundation, 2019

Achievements:

- A method is developed based on dynamic modeling of human body for designing and manufacturing anti vibration work shoes.
- The primary results and the report of this project is published in high-ranked "International Journal of Industrial Ergonomics" (IF=1.662)

• Industrial Grant, IPMCo., Iran Piston Manufacturing Company, 2017**Achievements:**

- Theoretical and Experimental Modal Analysis of XU7 engine tappet
- Developing automatic method for tappet crack detection

• Industrial Grant, STP Co., Supplying Tractor Parts Company, 2017**Achievements:**

- Investigation of foundation vibration for installation of gear quality control system

• Industrial Collaboration, NSPCo., Navidsahand Company, 2019**Achievements:**

- Proposing new DSP and CM method based on signal decomposition and deep neural-network for CM of rotary machinery
- related papers about this innovation are published in high-ranked journals "Expert systems with Applications" (IF=5.452) and "Structural Health Monitoring" (IF=4.87)

• Industrial Collaboration, ITMCo., Iran Tractor Industrial Group, 2010**Achievements:**

- Optimization of Tractor cabin's passive suspension parameters for making the cabin more comfortable and safer for drivers
- Related papers about this project is published in high-ranked "Journal of Terramechanics" IF=2.043).

• Industrial Collaboration, Standard National Organization of Iran, 2017

- Compilation of "Rotor Balancing - Section 31 (ISO 21940-31)" as national standard
- Compilation of "Rotor Balancing- Section 21 (ISO 21940-21)" as national standard
- Compilation of "Condition Monitoring- Section 1 (ISO 13381-1,)" as national standard
- Compilation of "Condition Monitoring- Section 2 (ISO 13373-2)" as national standard
- Compilation of "Condition Monitoring- Section 3 (ISO 13373-3)" as national standard

• Supervisor of the Best MS. Thesis Award, annually contributed by ISAV (Iranian Society of Acoustics and Vibration), 2015**• Supervisor of the Best MS. Thesis Award, annually contributed by ISAV (Iranian Society of Acoustics and Vibration), 2022****• Distinguished Ph.D. Student Award among PhD students of Mechanical Eng. Dep. University of Tabriz, 2008**

- **3.5-year full scholarship** by Ministry of Science, Research and Technology, to study PhD of Mechanical Engineering in University of Tabriz, 2005-2009
- **Outstanding Contribution in Reviewing Award** by Journal of “Mechanical Systems and Signal Processing” 2015
- **Outstanding Contribution in Reviewing Award** by Journal of “Measurement” 2018
- **Invited Lecturer** for 2014 IEEE International Symposium on Innovations in Intelligent Systems and Application (INISTA 2014) in Alberobello, Italy
- **Invited Lecturer** for 2013 IEEE International Symposium on Innovations in Intelligent Systems and Application (INISTA 2013) in Albena, Bulgaria
 - My paper was selected for publishing in “International Journal of Reasoning-based Intelligent Systems”
- **Invited Lecturer** for 6th International Conference on Advanced Computational Engineering and Experimenting (ACE-X 2012), in Istanbul, Turkey, 2012
- **Invited Lecturer** for 2011 IEEE International Symposium on Innovations in Intelligent Systems and Application (INISTA 2011) in Istanbul, Turkey
- **Reviewer of more than 15 national patents**, Research Center of UT
- **Reviewer of papers for peer-reviewed international journals including (published by Elsevier, SAGE and Springer...):**
 - Mechanical Systems and Signal Processing
 - Journal of Sound and Vibration
 - Measurement Journal of the International Measurement Confederation (IMEKO)
 - Ocean Engineering
 - Applied Ocean Research
 - Journal of Mechanical Science and Technology
 - Journal of Civil Engineering (Korean Society of Civil Engineering)
 - Earthquake Engineering and Engineering Vibration
 - Inverse Problems in Science & Engineering
 - Journal of Mechanical Engineering Science
 - Structural Engineering and Mechanics

TEACHING EXPERIENCE

University of Tabriz:

- 2012 - Present** Advanced Mechanisms Design/ M.Sc. & PhD course in University of Tabriz
- 2011 - Present** Advanced Vibration/ M.Sc. & PhD course in University of Tabriz
- 2010 - Present** Simulation of Dynamic Systems/ M.Sc. & PhD course in University of Tabriz
- 2009 - Present** Mechanisms Design / B.Sc. course in University of Tabriz
- 2008 - Present** Engineering Dynamics / B.Sc. course in University of Tabriz
- 2008 - Present** Auto mechanics / B.Sc. course in University of Tabriz

2007 - Present Kinematics and Dynamics of machines / B.Sc. course in University of Tabriz
2007 - Present Engineering Statics / B.Sc. course in University of Tabriz
2005 - Present Dynamics and Vibration Lab. / B.Sc. course in University of Tabriz
2005 - 2012 Engineering Drawing / B.Sc. course in University of Tabriz

UCNA university

2014 - 2016 Invited professor for Advanced Vibration & Engineering Dynamics/ M.Sc. courses

Azad University

2014 - 2016 Invited professor for Kinematics and Dynamics of machines/ B.Sc. courses

Patents

Iranian Research Organization for Science and Technology (IROST)

No. 9608702 (24 December 2019) Dynamic Stimulus Device in Health Measurement of Fluid-Carrying Pipes

PUBLICATIONS

Scopus h-Index: 22

Scopus Citations: 1505

Google Scholar h-Index= 25

Google Scholar Citations=2042

Scopus ID: 56063516300

Google Scholar: <http://scholar.google.com/citations?user=AYOy7vIAAAAJ&hl=en>

ORCID ID: <https://orcid.org/0000-0002-9229-3482>

BOOK:

Simulation of complex dynamic systems with MATLAB (In Persian), 2022, Atharan/Ashina Publications, Tabriz, Iran

BOOK CHAPTERS:

1. Delamination Diagnosis in Composite Beam Using AIS and BGA Algorithms Based on Vibration Characteristics, B. Mohebbi, F. Abbasidoust, **M. M. Etefagh (Corresponding Author)** and H. Biglari – Chapter 5 of Optimization of Structures and Components - Advanced Structured Materials 43-DOI: 10.1007/978-3-319-00717-5_5- © Springer International Publishing Switzerland 2014
2. Experimental and Theoretical Modeling of 5 MW Offshore Wind Turbine with TLP Platform - Chapter 66 of Progress in Clean Energy, **M.M. Etefagh (Corresponding Author)**, Mobin Alipour, Yousef Golizadeh Akhlaghi and Ebrahim Akbari, Volume 2- Springer International Publishing- 2015

JOURNAL PAPERS:

1. Dictionary learning-based damage detection under varying environmental conditions using only vibration responses of numerical model and real intact State: Verification on an experimental offshore

- jacket model, *Mechanical Systems and Signal Processing* 182, Z Mousavi, S Varahram, **MM Etefagh (Corresponding Author)**, MH Sadeghi, 2023
2. Machine Learning-Based Modelling and Meta-Heuristic-Based Optimization of Specific Tool Wear and Surface Roughness in the Milling Process, S Pedrammehr, M Hejazian, MR Chalak Qazani, H Parvaz, S Pakzad, **MM Etefagh**, AH Suhail, *Axioms* 11(9), 2022
 3. Effects of warping function on scale-dependent torsional vibration of nano-bars, R Hassannejad, **MM Etefagh**, B Alizadeh-Hamidi, *The European Physical Journal Plus* 137(7), 2022
 4. Model-based control of axisymmetric hexarot parallel manipulators, S Pedrammehr, MR Chalak Qazani, H Asadi, **MM Etefagh**, S Nahavandi, *Results in Control and Optimization* 7, 2022
 5. Damage detection of offshore jacket structure using dynamic responses based on simulated model, intact state of real model and deep auto-encoder neural network, S N Razavi, Z Mousavi, S Varahram, **MM Etefagh (Corresponding Author)**, M Sadeghi, *AJME* 53(6), 2021
 6. Incipient fault diagnosis of bearings based on parameter-optimized VMD and envelope spectrum weighted kurtosis index with a new sensitivity assessment threshold, A Dibaj, R Hassannejad, **MM Etefagh**, MB Ehghaghi, *ISA transactions* 114, 413-433, 2021
 7. Damage detection of offshore jacket structure using dynamic responses based on simulated model, intact state of real model and deep auto-encoder neural network
 8. Mooring Damage Identification of Floating Wind Turbine Using a Non-Probabilistic Approach Under Different Environmental Conditions, PH Dehkharghani, **MM Etefagh (Corresponding Author)**, R Hassannejad, *Journal of Marine Science and Application* 20, 156-169, 2021
 9. Detection of Damages in Mooring Lines of Spar Type Floating Offshore Wind Turbines Using Fuzzy Classification and Arma Parametric Modeling, M Rezaee, R Fathi, V Jahangiri, **MM Etefagh**, A Jamalkia, MH Sadeghi, *International Journal of Structural Stability and Dynamics*, Online Ready (<https://www.worldscientific.com/doi/abs/10.1142/S021945542150111X>), 2021
 10. Recognizing the viscoelastic safe area of work shoe sole in the sitting posture with vibration transmissibility in the vertical direction, Peyman Jalali, **MM Etefagh (Corresponding Author)**, Reza Hassannejad, *International Journal of Industrial Ergonomics* 81, 103053, 2021
 11. Developing deep neural network for damage detection of beam-like structures using dynamic response based on FE model and real healthy state, Z Mousavi, **MM Etefagh (Corresponding Author)**, MH Sadeghi, SN Razavi, *Applied Acoustics* 168, 107402, 2020
 12. A hybrid fine-tuned VMD and CNN scheme for untrained compound fault diagnosis of rotating machinery with unequal-severity faults, A Dibaj, **MM Etefagh (Corresponding Author)**, R Hassannejad, MB Ehghaghi, *Expert Systems with Applications*, 114094, 2020
 13. Fine-tuned variational mode decomposition for fault diagnosis of rotary machinery, A Dibaj, **MM Etefagh (Corresponding Author)**, R Hassannejad, MB Ehghaghi, *Structural Health Monitoring* 19 (5), 1453-1470, 2020
 14. Investigating the Dynamics of a Ball-Spring Autobalancer in a Rotor with Non-Linear Bearings, M Rezaee, **MM Etefagh**, R Fathi, *Computational Methods in Engineering* 39 (1), 29-43, 2020
 15. Optimal design of sport footwear with considering energy dissipation of lower limb soft-tissue during running, P Jalali, R Hassannejad, **MM Etefagh**, MRS Noorani, *Science & Sports* 35(6), 405-412, 2020
 16. Deep neural networks-based damage detection using vibration signals of finite element model and real intact state: An evaluation via a lab-scale offshore jacket structure, Z Mousavi, S Varahram, **MM Etefagh (Corresponding Author)**, MH Sadeghi, SN Razavi, *Structural Health Monitoring OnlineFirst* <https://doi.org/10.1177/1475921720932614>, 2020

17. Structural control of a fixed offshore structure using a new developed tuned liquid column ball gas damper (TLCBGD), H Hokmabady, A Mojtahedi, S Mohammadyzadeh, **MM Etefagh**, Ocean Engineering 192, 106551, 2019
18. Effect of PIG's physical parameters on dynamic behavior of above ground pipeline in pigging operation, MH Sadeghi, S Chitsaz, MM Etefagh, Mechanical Systems and Signal Processing 132, 692-720, 2019
19. Vibration settling time of the gastrocnemius remains constant during an exhaustive run in rear foot strike runners, A Khassestarash, R Hassannejad, MM Etefagh, AE Oskouei, Journal of biomechanics 93, 140-146, 2019
20. Experimental Study of Damage Detection in Beam Using Dynamic Excitation System and Wavelet Packet Transform and Energy Rate Index, M Kohdaragh, L Yaghin, **MM Etefagh**, AR Mojtahedi, Modares Mechanical Engineering 19 (7), 1655-1662, 2019
21. Dynamics and Stability of Non-Planar Rigid Rotor Equipped with Two Ball-Spring Autobalancers, M Rezaee, **M Mohammad Etefagh**, R Fathi, International Journal of Structural Stability and Dynamics 19 (02), 1950001, 2019
22. Modeling the central nervous system functionality in controlling the calf muscle activity during running with sport shoes, P Jalali, MRS Noorani, R Hassannejad, **MM Etefagh**, Proceedings of the Institution of Mechanical Engineers, Part H: Journal of Engineering in Medicine 233(2), 254-266, 2019
23. Investigation of dynamic response changes in TLP type floating wind turbine with broken mooring lines, MA Nosratzadeh, **MM Etefagh (Corresponding Author)**, P Hajinezhad Dehkharghani, Journal of Marine Engineering 14 (28), 51-63, 2019
24. A study on vibration of Setar: stringed Persian musical instrument, S Pedrammehr, N Jafarzadeh Aghdam, S Pakzad, **MM Etefagh**, M Homayoun Sadegh, Journal of Vibroengineering 20 (7), 2680-2689, 2018
25. Modeling and vibration analysis of pipeline in the course of pigging operation, using FEM and experimental modal analysis, S Chitsaz, **MM Etefagh**, Modares Mechanical Engineering 18 (6), 191-201, 2018
26. Health monitoring of mooring lines in floating structures using artificial neural networks, HR Aqdam, **MM Etefagh (Corresponding Author)**, R Hassannejad, Ocean Engineering 164, 284-297, 2018
27. Cavitation intensity monitoring in an axial flow pump based on vibration signals using multi-class support vectormachine, MT Shervani-Tabar, **MM Etefagh (Corresponding Author)**, S Lotfan, H Safarzadeh, Proceedings of the Institution of Mechanical Engineers, Part C: Journal of Mechanical Engineering Science 232(17), 3013-3026, 2018
28. Multibody dynamics of a floating wind turbine considering the flexibility between Nacelle and Tower, V Jahangiri, **MM Etefagh (Corresponding Author)**, International Journal of Structural Stability and Dynamics 18 (06), 1850085, 2018
29. Vibration Analysis of 2-PR (Pa) U-2-PR (Pa) R New Parallel Mechanism, M Mahboubkhah, S Pakzad, M Homayoun Sadeghi, **MM Etefagh**, ADMT Journal 11 (2), 47-56, 2018
30. Optimal novel super-twisting PID sliding mode control of a MEMS gyroscope based on multi-objective bat algorithm, M Rahmani, H Komijani, A Ghanbari, **MM Etefagh**, Microsystem Technologies 24 (6), 2835-2846, 2018
31. A novel adaptive neural network integral sliding-mode control of a biped robot using bat algorithm, M Rahmani, A Ghanbari, **MM Etefagh**, Journal of Vibration and Control 24 (10), 2045-2060, 2018

32. Reliability Study of Energy Harvesting from Sea Waves by Piezoelectric Patches Considering Random JONSWAP Wave Theory, **MM Etefagh (Corresponding Author)**, H Mirab, R Fathi, Computational Methods in Engineering 36 (2), 21-34, 2018
33. Modal analysis of the vertical moving table of 4-DOF parallel machine tool by FEM and experimental test, M Mahboubkhah, S Pakzad, A Ghane Arasi, **MM Etefagh**, Journal of Vibroengineering 19 (7), 5301-5309, 2017
34. Damage detection of Pelamis power take-off based on discrete model, **MM Etefagh (Corresponding Author)**, B Medghalchi, A Dibaj, Proceedings of the Institution of Mechanical Engineers, Part C: Journal of Mechanical Engineering Science 213(22), 4110-4125, 2017
35. Diagnosis of combined faults in Rotary Machinery by Non-Naive Bayesian approach, MY Asr, **MM Etefagh (Corresponding Author)**, R Hassannejad, SN Razavi, Mechanical Systems and Signal Processing 85, 56-70, 2017
36. Hybrid neural network fraction integral terminal sliding mode control of an Inchworm robot manipulator, M Rahmani, A Ghanbari, **MM Etefagh**, Mechanical Systems and Signal Processing 80, 117-136, 2016
37. Damage detection of TLP and Spar floating wind turbine using dynamic response of the structure, A Jamalkia, **MM Etefagh**, A Mojtahedi, Ocean Engineering 125, 191-202, 2016
38. Investigation of WaveStar Energy Converter Performance in Caspian Sea Using Regular Wave and Froude-Krylov Force, P Yoosefi Khiabani, MA Abbaszadeh, A Khorshid, **MM Etefagh (Corresponding Author)**, Journal of Marine Engineering 12 (23), 45-55, 2016
39. Size-dependent nonlinear vibration analysis of carbon nanotubes conveying multiphase flow, S Lotfan, R Fathi, **MM Etefagh**, International Journal of Mechanical Sciences 115, 723-735, 2016
40. Robust adaptive control of a bio-inspired robot manipulator using bat algorithm, M Rahmani, A Ghanbari, **MM Etefagh**, Expert Systems with Applications 56, 164-176, 2016
41. Damage detection in beam using dynamic excitation system by experimental, MA Lotfollahi Yaghin, M Kouhdaragh, **MM Etefagh**, A Mojtahedi, Modares Mechanical Engineering 16 (4), 307-314, 2016
42. TLP structural health monitoring based on vibration signal of energy harvesting system, V Jahangiri, H Mirab, R Fathi, **MM Etefagh (Corresponding Author)**, Latin American Journal of Solids and Structures 13 (5), 897-915, 2016
43. Investigating the dynamic behavior of ball-spring automatic balancer in presence of gyroscopic effect, M Rezaee, **MM Etefagh**, R Fathi, Modares Mechanical Engineering 16 (11), 135-142, 2016
44. Damage identification of a TLP floating wind turbine by meta-heuristic algorithms, MM Etefagh, China Ocean Engineering 29 (6), 891-902, 2015
45. Energy harvesting from sea waves with consideration of airy and JONSWAP theory and optimization of energy harvester parameters, H Mirab, R Fathi, V Jahangiri, **MM Etefagh (Corresponding Author)**, R Hassannejad, Journal of Marine Science and Application 14 (4), 440-449, 2015
46. Fatigue and soft tissue vibration during prolonged running, A Khassestarash, R Hassannejad, **MM Etefagh**, V Sari-Sarraf, Human movement science 44, 157-167, 2015
47. Fault diagnosis using noise modeling and a new artificial immune system-based algorithm, F Abbasi, A Mojtahedi, **MM Etefagh**, Earthquake Engineering and Engineering Vibration 14 (4), 725-741, 2015
48. Statistical analysis of random uncertainty in the pipes conveying multi-phase flow based on nonlinear dynamic model, R Fathi, S Lotfan, **MM Etefagh**, Modares Mechanical Engineering 15 (8), 323-331, 2015

49. Kinematic analysis and workspace determination of hexarot-a novel 6-DOF parallel manipulator with a rotation-symmetric arm system, MRC Qazani, S Pedrammehr, A Rahmani, B Danaei, **MM Etefagh**, ..., Robotica 33 (8), 1686, 2015
50. Damage Identification of the Floating Wind Turbine Mooring Line by Fuzzy Classification, A Jamalkia, **MM Etefagh (Corresponding Author)**, A Mojtahedi, Journal of Marine Engineering 11 (21), 41-56, 2015
51. New structural damage-identification method using modal updating and model reduction, **MM Etefagh (Corresponding Author)**, H Akbari, K Asadi, F Abbasi, Proceedings of the Institution of Mechanical Engineers, Part C: Journal of Mechanical Engineering Science 229(6), 1041-1059, 2015
52. Damping and energy dissipation in soft tissue vibrations during running, A Khassestarash, R Hassannejad, H Enders, **MM Etefagh**, Journal of Biomechanics 48 (2), 204-209, 2015
53. Reliability analysis of the bridge dynamic response in a stochastic vehicle-bridge interaction, **MM Etefagh**, D Behkamkia, S Pedrammehr, K Asadi, KSCE journal of civil engineering 19 (1), 220-232, 2015
54. Investigating fatigue life effects on the vibration properties in friction stir spot welding using experimental and finite element modal analysis, NJ Aghdam, S Hassanifard, **MM Etefagh (Corresponding Author)**, A Nanvayesavojblaghi, Strojniški vestnik-Journal of Mechanical Engineering 60 (11), 735-741, 2014
55. An experimental study on motion error of hexarot parallel manipulator, Mohammad Reza Chalakh Qazani, Siamak Pedrammehr, Arash Rahmani, Mehran Shahryari, Aslan Khani Sheikh Rajab, **Mir Mohammad Etefagh**, The International Journal of Advanced Manufacturing Technology 72 (9-12), 1361-1376, 2014
56. Optimal synthesis of four-bar steering mechanism using AIS and genetic algorithms, **MM Etefagh (Corresponding Author)**, MS Javash, Journal of Mechanical Science and Technology 28 (6), 2351-2362, 2014
57. Path synthesis of the four-bar mechanism using meta-heuristic algorithms, **MM Etefagh (Corresponding Author)**, M Abbasi, H Emdadi, International Journal of Reasoning-based Intelligent Systems 6 (3-4), 109-117, 2014
58. Fatigue Strength of a Chassis of a Semi-Heavy Truck under Dynamic loads due to real road roughness, M Zehsaz, MH Sadeghi, **MM Etefagh**, R Hassannejad, Transactions of FAMENA 38 (4), 89-105, 2014
59. Detection of nonlinearity effects in structural integrity monitoring methods for offshore jacket-type structures based on principal component analysis, A Mojtahedi, MAL Yaghin, **MM Etefagh**, Y Hassanzadeh, M Fujikubo, Marine Structures 33, 100-119, 2013
60. A study on modal parameters of cylindrical grinding machine structure through experimental test and FEM, R Barzegar, M Mahboubkhah, **MM Etefagh**, Applied Mechanics and Materials 307, 275-278, 2013
61. A robust damage detection method developed for offshore jacket platforms using modified artificial immune system algorithm, A Mojtahedi, MAL Yaghin, Y Hassanzadeh, F Abbasidoust, **MM Etefagh**, ..., China Ocean Engineering 26 (3), 379-395, 2012
62. A hybrid particle swarm–Nelder–Mead optimization method for crack detection in cantilever beams, MTV Baghmisheh, M Peimani, MH Sadeghi, **MM Etefagh**, AF Tabrizi, Applied Soft Computing 12 (8), 2217-2226, 2012
63. Dynamic modeling of peach fruit during normal impact, E Ahmadi, HR Ghassemzadeh, M Sadeghi, M Moghaddam, SZ Neshat, **MM Etefagh**, Journal of Food Process Engineering 35 (3), 483-504, 2012

64. Numerical and experimental investigation of fatigue life and frequency response of the different arrangements of tensile-shear spot-welded joints, S Hassanifard, **MM Etefagh**, Modares Mechanical Engineering 12 (1), 77-84, 2012
65. Modal analysis of the surface grinding machine structure through FEM and experimental test, S Pakzad, AKS Rajab, M Mahboubkhah, **MM Etefagh**, O Masoudi, Advanced Materials Research 566, 353-356, 2012
66. Modal analysis of the milling machine structure through FEM and experimental test, S Pedrammehr, H Farrokhi, A Rajab, S Pakzad, M Mahboubkhah, **MM Etefagh**, MH Sadeghi, Advanced Materials Research 383, 6717-6721, 2012
67. Tractor cabin's passive suspension parameters optimization via experimental and numerical methods, M Zehsaz, MH Sadeghi, **MM Etefagh**, F Shams, Journal of Terramechanics 48 (6), 439-450, 2011
68. Developing a robust SHM method for offshore jacket platform using model updating and fuzzy logic system, A Mojtahedi, MAL Yaghin, Y Hassanzadeh, **MM Etefagh**, MH Aminfar, ..., Applied Ocean Research 33 (4), 398-411, 2011
69. Experimental investigation of TARMAX model for modeling of hydrodynamic forces on cylinder-like structures, MA Lotfollahi Yaghin, A Mojtahedi, **MM Etefagh**, MH Aminfar, Journal of Marine Science and Application 10 (3), 281-288, 2011
70. Experimental investigation of TARMAX model for modeling of hydrodynamic forces on cylinder-like structures, MAL Yaghin, A Mojtahedi, **MM Etefagh**, MH Aminfar, Journal of Marine Science and Application 10 (3), 281, 2011
71. Gear fault diagnosis via non-stationary adaptive MARTIN distance, **MM Etefagh (Corresponding Author)**, MH Sadeghi, Scientia Iranica 18 (1), 59-65, 2011
72. Numerical and experimental study of engine cylinder block under mechanical and thermal loads: static and dynamic investigation, MH Sadeghi, M Zehsaz, **MM Etefagh**, International Journal of Vehicle Systems Modelling and Testing 6 (1), 1-20, 2011
73. Application of a new parametric model-based filter to knock intensity measurement, **MM Etefagh (Corresponding Author)**, MH Sadeghi, M Rezaee, R Khoshbakhti, R Akbarpour, Measurement 43 (3), 353-362, 2010
74. Latent component-based gear tooth fault detection filter using advanced parametric modeling, **MM Etefagh (Corresponding Author)**, MH Sadeghi, M Rezaee, S Chitsaz, Mechanical systems and signal processing 23 (7), 2260-2286, 2009
75. Dynamic simulation of beam-like structure with a crack subjected to a random moving mass oscillator, **MM Etefagh (Corresponding Author)**, MH Sadeghi, M Rezaee, Earthquake Engineering and Engineering Vibration 8 (3), 447-458, 2009
76. The Application of Laser Velocity Meter in Detecting Incipient Cavitation and Measurement its Intensity, Inside Axial Flow Pumps, HA Tash, M Sadeghi, MT Shervanitabar, **MM Etefagh**, Journal of Applied Sciences 9 (7), 1317-1323, 2009
77. Knock detection in spark ignition engines by vibration analysis of cylinder block: A parametric modeling approach, **MM Etefagh (Corresponding Author)**, MH Sadeghi, V Pirouzpanah, HA Tash, Mechanical Systems and Signal Processing 22 (6), 1495-1514, 2008
78. Health monitoring of time-varying stochastic structures by latent components and fuzzy expert system, **MM Etefagh (Corresponding Author)**, MH Sadeghi, Earthquake Engineering and Engineering Vibration 7 (1), 91, 2008

79. Crack detection in beam-like structures using genetic algorithms, MT Vakil-Baghmisheh, M Peimani, MH Sadeghi, **MM Etefagh**, Applied soft computing 8 (2), 1150-1160, 2008
80. Effect of different tool edge conditions on wear detection by vibration spectrum analysis in turning operation, E Haddadi, MR Shabghard, **MM Etefagh**, Journal of Applied Sciences 8 (21), 3879-3886, 2008
81. Asynchronous input gear damage diagnosis using time averaging and wavelet filtering, MA Jafarizadeh, R Hassannejad, **MM Etefagh (Corresponding Author)**, S Chitsaz, Mechanical Systems and Signal Processing 22 (1), 172-201, 2008

CONFERENCE PAPERS:

1. Biomechanical study on the nonlinear stiffness behavior of the calf muscle and ground reaction force estimation during running, P Jalali, S Varahram, R Hassannejad; **MM Etefagh**, 2017 5th RSI International Conference on Robotics and Mechatronics (ICRoM), 2017
2. An active model for gastrocnemius muscle activity to predict the impact force during running, P Jalali, MRS Noorani, R Hassannejad, **MM Etefagh**, 2016 4th international conference on robotics and mechatronics (ICROM), 380-385, 2016
3. Elastic constant identification of laminated composite beam with metaheuristic algorithms, **MM Etefagh (Presenter)**, H Biglari, M Azvar, H Emdadi, 2014 IEEE International Symposium on Innovations in Intelligent Systems and Application (INISTA), 2014
4. Prediction of a diesel engine exhaust gases physical properties with artificial neural network, RA Ghiasi, **MM Etefagh (Presenter)**, V Sadeghi, Y Ajabshirchi, M Taki, 2014 IEEE International Symposium on Innovations in Intelligent Systems and Application (INISTA), 2014
5. Bearing fault diagnosis using hybrid genetic algorithm K-means clustering, **MM Etefagh (Presenter)**, M Ghaemi, MY Asr, 2014 IEEE International Symposium on Innovations in Intelligent Systems and Applications (INISTA) Proceedings,84-89, 2014
6. Optimum design method for four-bar function generator using AIS and genetic algorithms, MS Javash, **MM Etefagh (Presenter)**, YE Hamidi, 2013 IEEE INISTA, 1-6, 2013
7. Path synthesis of the four-bar mechanism using ABC algorithm and comparing with BGA, **MM Etefagh (Presenter)**, M Abbasi, H Emdadi, 2013 IEEE International Symposium on Innovations in Intelligent Systems and Application (INISTA), 1-5, 2013
8. Delamination detection in CFRP composite beam using modified AIS algorithm, B Mohebbi, F Abbasidoust, **MM Etefagh (Presenter)**, 2012 International Symposium on Innovations in Intelligent Systems and Application (INISTA), 2012
9. Complex crank-slider mechanism dynamic balancing by binary genetic algorithm (BGA), **MM Etefagh**, F Abbasidoust, H Milanchian, MY Asr, 2011 International Symposium on Innovations in Intelligent Systems and Application (INISTA), 2011
10. Developing a Robust Structural Health Monitoring Method for Offshore Jacket Platform Using Modified AISAlgorithm, A Mojtahedi, MA Lotfollahi Yaghin, **MM Etefagh**, The Twenty-first International Offshore and Polar Engineering Conference, 2011
11. Cavitation intensity measurement by analysis of pump structure oscillation: A new parametric method approach, H Arjmandi Tash, M Sadeghi, MT Shervani Tabar, **MM Etefagh**, ASME Fluids Engineering Division Summer Meeting 48418, 1-7, 2008
12. Stochastic modeling of gearbox via genetic algorithm, S Khanmohammedi, G Alizadeh, A Giasi, **MM Etefagh**, Proceedings of the 15 th IASTED International Conference, 484-488, 2006

13. Non-destructive crack detection using genetic algorithms, M Peimani, MTV Baghmisheh, **MM Ettefagh**, Proceedings of Manufacturing Engineering, TICME 2005, 170, 2005

MEMBERSHIP OF SCIENTIFIC SOCIETIES

- Iranian Society of Mechanical Engineering (ISME)
- Iranian Society of Acoustic & Vibration (ISAV)
- Society of Manufacturing Engineering of Iran (SMEI)
- Iran Maintenance Association (IRMA)

RESEARCH LEADERSHIP AND SUPERVISION

Graduate Thesis Main Supervisor of:

1. PhD. Research and Thesis, 2020, Reza Fathi, Investigating the effect of bearings characteristics on the nonlinear dynamics and stability of the ball- spring autobalancer in presence of discrete imbalances
2. PhD. Research and Thesis, 2020, Zohreh Musavi, Identification and Fault Detection of Mechanical Systems Using Dynamic Response Based on Simulated Simplified Model and Deep Neural Networks
3. PhD. Research and Thesis, 2020, Peyman Jalali, Development of musculoskeletal model to evaluate dynamic response of human body to floor vibration and to identify optimal viscoelastic region for anti-vibration work shoe sole
4. MSc. Thesis, 2021, Amir Hossein Khezri, Identification of floating wind turbine mooring line system defects under random environmental conditions based on time-frequency analysis
5. MSc. Thesis, 2020, Hadi Mohammadian, Modeling of floating wind turbine and applying LQR, SMC controllers and comparing with PID
6. MSc. Thesis, 2019, Ali Dibaj, an intelligent method for combined fault diagnosis of Rotary Machinery based on Variational Mode Decomposition and deep learning
7. Supervision MSc. Thesis, 2018, Pouya Hajinejhad, Application of damage diagnosis in mooring system in floating wind turbine using the non-probabilistic artificial neural networks under uncertainties
8. MSc. Thesis, 2018, Sajad Meshkini, Dynamic simulation and damaged detected of railway on elastic foundation using vibrating signals
9. MSc. Thesis, 2018, Mohammadali Nosratzadeh, Investigation of dynamic response changes in Spar and TLP type floating wind turbines with broken mooring lines
10. MSc. Thesis, 2017, Alireza Hesari, Dynamic simulation of impact-based frequency up-converting buoy for wave energy harvesting
11. MSc. Thesis, 2017, Hamed RezaiaeeAqdam, Damage diagnosis of the mooring lines in floating structures using artificial neural networks
12. MSc. Thesis, 2017, Hossein Mehraji, 3-D dynamic simulation of floating cylinder with vibration absorber
13. MSc. Thesis, 2016, Mohammad Safaei, Modeling and simulation of coupled bridge-vehicle system with consideration of engine vibration
14. MSc. Thesis, 2016, Alireza Dadkhah Laleh, Condition monitoring of Pride's gearbox using beta kurtosis of vibration signals

15. MSc. Thesis, 2016, Mehran Zayer, Energy harvesting using piezoelectric transducers attached to buoyant structures
16. MSc. Thesis, 2016, Vahid Jahangiri, Model developing of the floating wind turbine with considering flexibility of turbine structure components
17. MSc. Thesis, 2016, Hadi Mirab, Energy harvesting from sea waves with considering irregular JONSWAP wave theory using piezoelectric beam
18. MSc. Thesis, 2015, Mahsa Yazdaniyan, Combined fault diagnosis of rotating machines
19. MSc. Thesis, 2015, Hamed Safarzadeh, Image processing and vibration analysis of threshold of tip-vortex cavitation inception in an axial pump
20. MSc. Thesis, 2015, Meysam Farrokhi, Image processing and vibration analysis of bend draft tube cavitation in Francis turbine
21. MSc. Thesis, 2015, Aysan Jammalkia, Fault identification of the TLP floating wind turbine using dynamic response of the turbine structure
22. MSc. Thesis, 2015, Ali Dadgar, Dynamic response of sandwich beam with flexible core under moving mass
23. MSc. Thesis, 2015, Mehdi Roshani, Delimitation detection of the sandwich beam by frequency domain features
24. MSc. Thesis, 2014, Arash Khassehtarash, Analysis of human soft tissue package in order to fatigue detection and optimal design of sport footwear
25. MSc. Thesis, 2014, Moslem Abbasi, Optimum analysis and synthesis of four-bar space mechanism using Meta-heuristic algorithms
26. MSc. Thesis, 2013, Hossein Eslami, Simultaneous force/moment balancing of 4-cylinder medium duty diesel engine
27. MSc. Thesis, 2013, Danial Behkamkia, Dynamic response simulation of the bridge deck due to moving random vehicle
28. MSc. Thesis, 2012, Hossein Akbari, Damage detection of the structures based on FEM updating using model reduction and iterative method

Graduate Thesis Main Advisor of:

1. PhD. Research and Thesis, 2020, Vahid Shateriyan, Nonlinear Vibration Analysis and Crack Detection of Beam Based on its Nonlinear Response
2. PhD. Research and Thesis, 2020, Saeed Chitsaz, Theoretical and Experimental Analysis of Linear Vibration of Pipes Conveying Fluid system with Internal Moving element and Variation of the System Mass
3. PhD. Research and Thesis, 2019, Hamid Hokmabadi, Error and uncertainty Analysis and Investigation in Model Updating Process of an Offshore Jacket Platform Equipped with TLCD
4. PhD. Research and Thesis, 2018, Sajad Pakzad, Dynamic and vibration analysis of 2-PR(Pa)U-2-PR(Pa)R parallel mechanism machine tool
5. PhD. Research and Thesis, 2017, Masoud Minayi, strongly nonlinear vibration of beams considering the damping effect
6. PhD. Research and Thesis, 2015, Mahdi Koohdaragh, Damage detection in fluid-conveying pipe using dynamic inter action tracking of moving load method

7. PhD. Research and Thesis, 2012, Alireza Mojtahedi, Investigation of the system identification theories for monitoring of dynamic behavior and integrity of fixed offshore structure using physical models and wave maker hydraulic flume
8. MSc. Thesis, 2022, Neda Karami, Investigation the effect of stiffness and damping characteristics of bolted joints in blade-hub connection on the dynamic behavior of horizontal axis wind turbine
9. MSc. Thesis, 2022, Emad Amuzad Khalili, Fault identification of structures using vibration signals via reduced feature vector classification
10. MSc. Thesis, 2022, Alireza Chavideh, damage prognosis in offshore-jacket structure model based on deep neural networks
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12. MSc. Thesis, 2021, Medi Pourmohammad, Investigation the performance of liquid column vibration absorber (LCVA) in controlling the vibration of tall structures
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25. MSc. Thesis, 2016, Karim Esmailzadeh samarin, Design and manufacturing device for measuring weight moment of gas and steam turbine blade
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