Nan Wu

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EITC E1-410 Mechanical Engineering, University of Manitoba, Winnipeg, MB, Canada R3T 5V6
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WORKING EXPERIENCES

Associate Professor Department of Mechanical Engineering, University of Manitoba
04/2019~present

Assistant Professor at Department of Mechanical Engineering, University of Manitoba
01/2014~03/2019

- Undergraduate courses: teaching Vibration and Acoustics (MECH 3420, fall terms 2014, 2015 and 2016) and Testing, Condition Monitoring and Fault Analysis - Application to Vehicles (MECH 4322 T02, winter terms 2015, 2016 and 2017).
- Graduate course: teaching Structural Damage Analysis and Health Monitoring (MECG7780, fall terms 2014, 2015 and 2016); Graduate seminar 2014-2016.

Postdoctoral Fellow Dept of Mechanical & Manufacturing Engineering, University of Manitoba
06/2012~12/2013

- Investigating problems in the fields of application of smart materials and nanotechnology in engineering.

Research Assistant Dept of Mechanical & Manufacturing Engineering, University of Manitoba
09/2008~05/2012

RESEARCH INTERESTS

Structure/machinery condition monitoring and non-destructive damage detection:

- Structural health monitoring based on vibration and signal processing.
- Damage identification with smart composite materials and structures.

Smart materials and structures:

- Mechanics and dynamics of smart composites.
- Kinetic energy harvesting with piezoelectric materials from structure vibrations.
- Vibration control, structural repair and enhancement with smart materials and structures.

Load transfer path based structural design and optimization

Mechanical Meta-materials and lattice structures

Nano-technology:

- CNT dynamics.
- CNT composites.

STUDENTS SUPERVISION

Ph.D.(s) (graduated): Alireza Keshmiri; Shahriar Bagheri; Hossein Kheirollahi; Vahid Rabbani; Ali Safian (Best Thesis Award); Shengjie Zhao; Yu Xiao.
Master(s) (graduated): Amir Mardasi; Osho Samuel Adetunji; Farjana Faisal; Dillon Wang; Hassan Oyelaja; Emmanuel Adejumo; Xin Wang; Xinxiang Zong; Yukun Cheng; Tamrin Tanha; Ebadur Rohman; Shengjie Zhao; Buddhi Wimarshana; Heetkumar Patel; Hasan Shariar;
Ph.D.(s) (on-going): Xin Wang; Mahdi Alaei Varnosfaderan; Ramin Hamzehei;
Master(s) (on-going): Ahmed Raji.

PATENTS

(*: principle inventor)

Q. Wang* and **N. Wu**, Repair of delaminated plates with piezoelectric materials, Patent Cooperation Treaty (PCT) Patent, WO/2012/021997.
N. Wu*, Q. Wang and X.D. Xie, Ocean wave energy harvesting by a piezoelectric coupled buoy, US patent application, US 61/976,187, Allowed.
N. Wu*, F. Faisal and S. Osho, Damage detection with self-powered wireless smart coating sensor, US 62/375,148, WO/2018/032093, published.
M. Varnosfaderani, P. Maghoul, **N. Wu**, Vibratory Burrowing Probe for Investigating Subsurface Regions of Granular Media in 1G and Low/Micro Gravity Conditions, US 63/332,775, provisional.
A. Safian, X. Liang, **N. Wu**, Transducer for use with a Rotary Bearing, 82402-355PCT/CJD, provisional.

PUBLICATION LISTS

Referred Journal Papers: (†: student or advisee under my direct supervision, *: corresponding author(s))

Published and accepted (112):

(112) R. Hamzehei†, M. Bodaghi*, **N. Wu***, Design and 4D Printing of Multi-stiffness Wavy Metamaterial Energy Absorbers/Dissipators with Shape Recovery Features, ***Engineering Structures***, Accepted, 2024. (***IF:*** 5.6)

(111) Y. Xiao †, Q. Han, **N. Wu***, Piezoelectric energy harvesting: a review of energy sources, structures, and working mechanisms in high-frequency excitations and operations, ***Smart Materials***

and Structures, accepted, 2024. (***IF:*** 4.1)

(110) Y. Xiao **†**, D. Song **†**, **N. Wu***, Development of compact smart bearing and novel hybrid feature assessment for weak defect identification, ***Non-destructive Testing and Evaluation***, Accepted, 2024. (***IF***: 3.0)

(109) X. Wang†, X. Liang*, **N. Wu**, An FBG-Based Method for Load Measurement of a Cylindrical Rolling Element Bearing, ***Measurement Science and Technology***, Accepted, 2024. (***IF:*** 2.7)

(108) Y. Xiao†, **N. Wu***, Q. Wang, Energy generation from friction-induced vibration of a piezoelectric beam, ***International Journal of Mechanical Sciences***, Accepted, 2024. (***IF:*** 7.3)

(107) R. Hamzehei†, M. Bodaghi*, **N. Wu***, Mastering the Art of Designing Mechanical Metamaterials with Quasi-zero Stiffness for Passive Vibration Isolation: A Review, ***Smart Materials and Structures***, Vol. 33, 083001, 2024. (***IF:*** 4.1)

(106) M. Alaei Varnosfaderani **†**, **N. Wu**, P. Maghoul*****, Experimental investigations of the effects of bending vibrations resonance modes on penetration into granular materials, ***Smart Materials and Structures***, Vol. 33, 065019, 2024. (***IF:*** 4.1)

(105) A. Safian**†**, **N. Wu**, X. Liang*, A multi-function integrated PVDF transducer for fault detection and speed measurement of cylindrical roller bearings, ***Mechanical System and Signal Processing***, Vol. 212, 111313, 2024. (***IF:*** 8.4)

(104) Y. Xiao**†**, **N. Wu***, Q. Wang, Analysis of a friction-induced vibration piezoelectric energy generator under linear, bi-linear, and impact conditions, ***International Journal of Mechanical Sciences***, Vol. 272, 109148, 2024. (***IF:*** 7.3)

(103) N. Riaz, C. Shafai*, **N. Wu**, Electrical and Mechanical response of Spin-Coated PVDF-TrFE Formed from MIBK and DMSO Solvents Under External Excitations, ***Materials Research Express***, Vol. 10, 125703, 2023. (***IF***: 2.3)

(102) R. Hamzehei**†**, M. Bodaghi*, **N. Wu***, 3D-printed highly stretchable curvy sandwich metamaterials with superior fracture resistance and energy absorption, ***International Journal Solids and Structures***, Vol. 286-287, 112570, 2024. (***IF***: 3.6)

(101) Y. Xiao**†**, Z. Lu, **N. Wu***, Development and analysis of magnet-engaged piezoelectric energy generator under friction-induced vibration, ***International Journal of Nonlinear Mechanics***, Vol. 158, 104560, 2024. (***IF***: 2.9)

(100) S. Cui, **N. Wu**, P. Maghoul*, Fatigue crack localization based on empirical mode decomposition and pre-selected entropy, ***Nondestructive Testing and Evaluation***, Accepted, 2023. doi.org/10.1080/10589759.2023.2274000 (***IF***: 2.09)

(99) Y. Xiao**†**, W. Liu, Z. Lu, **N. Wu***, Numerical investigation of non-linear shear-mode piezoelectric energy generation under permanent magnetic conditions, ***Nonlinear Dynamics***, Vol. 111, pp. 18779–18817, 2023. (***IF***: 5.2)

(98) S. Wang**†**, C. Deng, O. Ojo, B. Akinrinlola, J. Kozub, **N. Wu***, Additive manufacturability and parametric studies on an extended three-dimensional re-entrant auxetic structure with angled struts, ***3D Printing and Additive Manufacturing***, Vol. 11, 2023. doi.org/10.1089/3dp.2023.0086 (***IF***: 5.35)

(97) S. Zhao**†**, Y. Zhang, S. Fan, N. Yang*, **N. Wu***, Design and optimization of graded lattice structures with load path-oriented reinforcement, ***Materials and Design***, Vol. 227, 111776, 2023. (***IF***: 7.6)

(96) Y. Xiao**†**, S. Karnaoukh, **N. Wu***, Design and analysis of a d15 mode piezoelectric energy generator using friction-induced vibration, ***Smart Materials and Structures***, Vol. 32, 035040, 2023. (***IF***: 4.13, **Highlighted paper 2023 by publisher**)

(95) R. Hamzehei**†**, M. Bodaghi*, J. Martinez, Q. Ji. U. Gwenn, M. Kadic, C. Wang, A. Zolfagharian, **N. Wu***, Parrot Beak-Inspired Metamaterials with Friction and Interlocking Mechanisms 3D/4D Printed in Micro and Macro Scales for Supreme Energy Absorption/Dissipation, ***Advanced Engineering Materials***, Vol. 25, 2201842, 2023. (***IF***: 4.12)

(94) P. Wang**†**, R. Cao, Y. Deng, Z. Sun, H. Luo, **N. Wu***, Vibration and Resonance Reliability Analysis of Non-uniform Beam with Randomly Varying Boundary Conditions Based on Kriging Model, ***Structures***, Vol. 50, pp. 925-936, 2023. (***IF***: 3.9)

(93) S. Wang†, C. Deng, O. Ojo, N. Yang*, B. Akinrinlola, J. Kozub, **N. Wu***, Design and testing of a DNA-like torsional structure for energy absorption, ***Materials and Design***, Vol. 226, 111642, 2023. (***IF***: 7.6)

(92) A. Safian†, **N. Wu***, X. Liang*, Development of an Embedded Piezoelectric Transducer for Bearing Fault Detection, ***Mechanical Systems and Signal Processing***, Vol.188, 109987, 2023. (***IF***: 8.93)

(91) V. Rabbani **†**, **N. Wu***, P. Maghoul, Effects of Electrode Size and Configuration on Sound Transmission Loss in Piezo-laminated Thick Shell, ***Wave Motion***, Vol. 114, 103003, 2022. (***IF:*** 2.1)

(90) S. Cui, P. Maghoul, X. Liang, **N. Wu***, Q. Wang*, Structural fatigue crack localization based on spatially distributed entropy and wavelet transform, ***Engineering Structures***, Vol. 266, 114544, 2022. (***IF***: 5.58)

(89) R. Hamzehei**†**, A, Serjouei, **N. Wu**, A. Zolfagharian, M. Bodaghi*, 4D Metamaterials with Zero Poisson's Ratio, Shape Recovery and Energy Absorption Features, ***Advanced Engineering Materials***, Vol. 24, 2200656, 2022. (***IF***: 4.12, **Top cited article of the journal 2022-2023**)

(88) Y. Xiao**†**, Q. Ji, S. Karnaoukh, C. Wang, **N. Wu***, Design and analysis of a d33 mode piezoelectric energy generator for vehicle braking system, ***Smart Materials and Structures***, Vol. 31, 065027, 2022. (***IF***: 4.13)

(87) S. Zhao**†**, **N. Wu***, S. Karnaoukh, A new expression of internal stiffness for load path analysis in structures, ***International Journal of Applied Mechanics***, Vol.14, 2250030, 2022. (***IF***: 2.9)

(86) P. Wang**†**, Y. Xiao**†**, **N. Wu***, Z. Sun*, H. Luo, Friction induced vibration and energy generation study of two-degree-of-freedom piezoelectric coupled system, ***European Journal of Mechanics / A Solids***, Vol. 95, 104619, 2022. (***IF***: 4.4)

(85) S. Zhao**†**, D. Song, **N. Wu***, F. Wu, Design of lattice structures based on U* load path analysis, ***3D Printing and Additive Manufacturing***, Vol. 10, 2022. doi.org/10.1089/3dp.2022.0018 (***IF:*** 5.35)

(84) P. Wang**†**, **N. Wu***, Z. Sun*, H. Luo, Vibration and Reliability Analysis of Non-uniform Composite Beam Under Random Load, ***Applied Sciences***, Vol. 12, 2700, 2022. (***IF***:2.67)

(83) S. Zhao**†**, L. Mao**†**, **N. Wu***, S. Karnaoukh, Load path visualization using U* index and principal load path determination in thin-walled structures, ***Facta Universitatis Series Mechanical Engineering***, 2022. doi.org/10.22190/FUME211105006Z (***IF***: 3.32)

(82) N. Yang*, Y. Deng, S. Zhao**†**, Y. Song, J. Huang, **N. Wu***, Mechanical metamaterials with discontinuous and tension/compression-dependent positive/negative Poisson's ratio, ***Advanced Engineering Materials***, 2021. doi.org/10.1002/adem.202100787 (***IF***: 4.12)

(81) P. Wang**†**, **N. Wu**, H. Luo, Z. Sun*, Influence of Friction Parameters on Vibration Characteristics of Piezoelectric Actuator, ***Journal of Northeastern University***, Vol. 43, pp. 850-856, 2021. DOI: 10.12068/j.issn.1005-3026.2022.06.013 (***EI*** *in Chinese*)

(80) M. Varnosfaderani**†**, P. Maghoul*, **N. Wu**, Modelling the penetration of subsonic rigid projectile probes into granular materials using the cavity expansion theory, ***Computers and Geotechnics***, Vol. 141, 104546, 2022. (***IF***: 4.95)

(79) S. Wang**†**, C. Deng, O. Ojo, B. Akinrinlola, J. Kozub, **N. Wu***, Design and modeling of a novel three dimensional auxetic reentrant honeycomb structure for energy absorption, ***Composite Structures***, Vol. 280, 114882, 2021. (***IF***: 5.40)

(78) P. Wang**†**, Y. Xiao**†**, **N. Wu***, Electrical Power Generation using Dynamic Piezoelectric Shear Deformation under Friction, ***Acta Mechanica Solida Sinica***, Vol. 34, 977–988, 2021. (***IF***: 2.16)

(77) M. Hodaei, P. Maghoul*, **N. Wu**, Three-Dimensional Biomechanical Modeling of Cylindrical Bone-Like Porous Materials Subject to Acoustic Waves, ***International Journal of Mechanical Sciences***, Vol. 213, 106835, 2022. (***IF***: 7.3)

(76) A. Safian**†**, H. Zhang, X. Liang*, **N. Wu**, Dynamic simulation of a cylindrical roller bearing with a local defect by combining finite element and lumped parameter models, ***Measurement Science and Technology***, Vol. 32, 125111, 2021. (***IF***:2.04)

(75) P. Wang**†**, **N. Wu***, H. Luo, Z. Sun*, Study on vibration response of a non-uniform beam with nonlinear boundary condition, ***Facta Universitatis Series Mechanical Engineering***, Vol. 19, 781-804, 2021. (***IF***:3.32)

(74) P. Wang**†**, **N. Wu***, H. Luo, Z. Sun*****, Study on dynamics responses and applications of non-uniform beam structure under crosswind, ***Journal of Vibration and Control***, Vol. 28, 2021. doi.org/10.1177/10775463211018306 (***IF***: 2.3)

(73) J. Xiao, **N. Wu**, O. Ojo, C. Deng*, Stacking fault and transformation-induced plasticity in nanocrystalline high-entropy alloys, ***Journal of Materials Research***, Vol. 36, 2705-2714, 2021. (***IF***: 5.28)

(72) **N. Wu**, B. Bao, Q. Wang*, Review on engineering structural designs for efficient piezoelectric energy harvesting to obtain high power output, ***Engineering Structures***, Vol 235, 112068, 2021. (***IF***: 5.6)

(71) S. Zhao†, **N. Wu***, Q. Wang, Load path-guided fiber trajectory in composite panels: a comparative study and a novel combined method, ***Composite Structures***, Vol. 263, 113689, 2021. (***IF***: 6.3)

(70) V. Rabbani†, **N. Wu***, Active Broadband Sound Transmission Loss Control Through an Arbitrary Thick Smart Piezo-laminated Cylinder, ***Aerospace Science and Technology***, Vol. 110, 106515, 2021. (***IF***: 5.0)

(69) B. Bao*, Q. Wang*, **N. Wu**, S. Zhou, Hand-held piezoelectric energy harvesting structure: Design, dynamic analysis, and experimental validation, ***Measurement***, Vol. 174, 109001, 2021. (***IF***: 5.2)

(68) Z. Wang, **N Wu**, Q. Wang, Y. Li, Q. Yang, F. Wu*, Novel Bionic Design Method for Skeleton Structures based on Load Path Analysis, ***Applied Sciences***, Vol. 10, 8251, 2020. (***IF***: 2.474)

(67) Z. Wang, Q. Wang, **N. Wu**, B. Guo, F. Wu*. Structural improvement of vehicle component based on the load path and load distribution analysis, ***International Journal of Automotive Technology***, Accepted, 2020. (***IF***: 1.245)

(66) J. Xiao, **N. Wu**, O. Ojo, C. Deng*, Electron localization governed plasticity in nanotwinned metals beyond the Hall-Petch type limit, ***Materials Science and Engineering: A***, Vol. 797, 140-251, 2020. (***IF***: 4.65)

(65) S. Zhao†, **N. Wu***, and Q. Wang, Deep residual U-net with input of static structural responses for efficient U* load transfer path analysis, ***Advanced Engineering Informatics***, Vol. 46, 101184, 2020. (***IF***: 3.87)

(64) N. Yang*, Y. Deng, Z. Mao, S. Wang, X. Niu, **N. Wu***, Cross-like lattices with tailorable mechanical properties, ***Materials Letters***, Vol. 281, 128617, 2020. (***IF***: 3.2)

(63) J. Xiao, **N. Wu**, O. Ojo, C. Deng*, Dislocation nucleation in CoNiCrFeMn high entropy alloy, ***Materialia***, Vol. 12, 100749, 2020. (***IF***: 3.0)

(62) H. Bisheh†*, M. Bisheh, **N Wu**, An investigation into Laminated Composite Automotive Driveshafts, ***International Journal of Mechanical and Production Engineering***, Vol. 8, pp. 89-95, 2020. (***IF***: 3.05)

(61) S. Zhao†, **N. Wu***, Q. Wang, Novel Damage Detection Tool Based on Load Path Analysis Using Ustar (U*), ***IEEE Access***, Vol. 8, 82607, 2020. (***IF***: 3.4)

(60) S. Bagheri†, **N. Wu***, and S. Filizadeh*, Application of Artificial Intelligence and Evolutionary Algorithms in Simulation-Based Optimal Design of a Piezoelectric Energy Harvester, ***Smart Materials and Structures***, Vol. 29, 105004, 2020. (***IF***: 3.7)

(59) M. Hodaei, V. Rabbani†, P. Maghoul*, A. Bahari, K. Farhang, **N. Wu**, Analytical Modeling of Contact Mechanics of Helical Gear, ***Journal of Adhesion Science and Technology***, Vol. 34, 2176-2199, 2020. (***IF***: 2.2)

(58) X. Wang†, **N. Wu***, Q. Wang*, Frequency Comparison Function Method for Real-Time Identification of Breathing Crack at Welding Joint, ***International Journal of Structural Stability and Dynamics***, Vol. 20, 2041001, 2020. (***IF***: 3.0)

(57) H. Bisheh†*, T. Rabczuk*, **N. Wu**, Effects of nanotube agglomeration on wave dynamics of carbon nanotube-reinforced piezocomposite shells, ***Composite Part B: Engineering,*** Vol. 187, 107739, 2020. (***IF***: 12.7)

(56) H.B. Oyelaja†*, **N. Wu**, O.A. Ojo, Fabrication and characterization of plastics with electrical and magnetic properties, ***The International Journal of Advanced Manufacturing Technology***, Vol. 106, 3451–3462, 2020. (***IF***: 2.6)

(55) N. Yang*, Y. Deng, Z.F. Mao, Y.T. Chen, **N. Wu**, X.D. Niu, New network architectures with tunable mechanical properties inspired by origami, ***Materials Today Advances***, Vol. 4, 100028, 2020. (New journal under Materials Today)

(54) H. Bisheh†, **N. Wu**, T. Rabczuk*, Free vibration analysis of smart laminated carbon nanotube-reinforced composite cylindrical shells with various boundary conditions in hygrothermal environments, ***Thin-Walled Structures***, Vol. 181, 171758, 2020. (***IF***: 3.48)

(53) A. Keshmiri†, S. Bagheri†, **N. Wu***, Simulation-Based Optimization of a Non-Uniform Piezoelectric Energy Harvester with Stack Boundary, ***International Journal of Mechanical and Materials Engineering***, Vol. 13, 500-505, 2019. (***IF***: 3.0)

(52) X. Wang, Y. Liu*, H. Lu, **N. Wu**, D. Hui, Y. Fu, A coupling model for cooperative dynamics in shape memory polymer undergoing multiple glass transitions and complex stress relaxations, ***Polymer***, Vol 181, 121785, 2019. (***IF***: 3.77)

(51) H. Bisheh†*, **N. Wu*,** D. Hui, Polarization effects on wave propagation characteristics of piezoelectric coupled laminated fiber-reinforced composite cylindrical shells, ***International Journal of Mechanical Sciences***, Vol. 161-162, 105028, 2019. (***IF***: 7.3)

(50) V. Rabbani†, M. Hodaei, X. Deng, H. Lu, D. Hui, **N. Wu***, Sound Transmission Through a Thick-Walled FGM Piezo-laminated Cylindrical Shell Filled with and Submerged in Compressible Fluids, ***Engineering Structures***, Vol. 197, 109323, 2019. (***IF***: 5.6)

(49) X. Wang, H. Lu*, **N. Wu**, D. Hui, M. Chen, Y. Fu, Cooperative principle in multiple glass transitions and strain relaxations of thermochemically responsive shape memory polymer, ***Smart Materials and Structures***, Vol. 28, 085011, 2019. (***IF***: 3.7)

(48) X. Wang†, **N. Wu***, Crack Identification at Welding Joint with a New Smart Coating Sensor and Entropy, ***Mechanical Systems and Signal Processing***, Vol. 124, 65-82, 2019. *(**IF***: 7.9)

(47) S. Bagheri†, **N. Wu***, S. Filizadeh*, Numerical modeling and analysis of self-powered synchronous switching circuit for the study of transient charging behavior of a vibration energy harvester, ***Smart Materials and Structures***, Vol. 28, 105056, 2019. (***IF***: 3.7)

(46) H. Bisheh†*, **N. Wu***, On dispersion relations in smart laminated fiber-reinforced composite membranes considering different piezoelectric coupling effects, ***Journal of Low Frequency Noise, Vibration and Active Control***, Vol. 32, 487-509, 2019. (***IF***: 2.8)

(45) A. Keshmiri†, **N. Wu***, New Energy Harvester with Embedded Piezoelectric Stacks, ***Composites Part B: Engineering***, Vol. 163, 303-313, 2019. (***IF***: 12.7)

(44) H. Bisheh†*, **N. Wu***, Wave propagation in smart laminated composite cylindrical shells reinforced with carbon nanotubes in hygrothermal environments, ***Composites Part B: Engineering***, Vol. 162, 219-241, 2019. (***IF***: 12.7)

(43) Q. Wang†, G. Zhang, C. Sun†, **N. Wu***, High efficient load paths analysis with U* index generated by deep learning, ***Computer Methods in Applied Mechanics and Engineering***, Vol.344, 499-511, 2019. (***IF***: 4.82)

(42) X. Wang, H. Lu*, **N. Wu**, D. Hui, Y. Fu, Unraveling bio-inspired pre-swollen effects of tetra-polyethylene glycol double network hydrogels with ultra-stretchable yielding strain, ***Smart Materials and Structures***, Vol. 28, 035005, 2019. (***IF***: 3.54)

(41) X.W. Deng, **N. Wu**, K. Yang†*, W.L. Chan, Integrated design framework of next-generation 85-m wind turbine blade: Modelling, aeroelasticity and optimization, ***Composite Part B: Engineering***, Vol. 159, 53-61, 2019. (***IF***: 12.7)

-------Before 2019----------

(40) V. Rabbani†, A. Bahari†, M. Hodaei†, P. Maghoul, **N. Wu***, Three-Dimensional Free Vibration Analysis of Triclinic Piezoelectric Hollow Cylinder, ***Composites Part B: Engineering***, Vol. 158, 352-363, 2018. (***IF***: 12.7)

(39) A. Keshmiri†, **N. Wu***, A wideband piezoelectric energy harvester design by using multiple non-uniform bimorphs, ***Vibration***, Vol. 1, 93-104, 2018. (***IF:*** 1.9)

(38) A. Keshmiri†, **N. Wu*** and Q. Wang, Vibration analysis of non-uniform tapered beams with FGM properties, ***Journal of Mechanical Science and Technology***, Vol. 32, 1-13, 2018. (***IF***: 1.22)

(37) A. Keshmiri†, **N. Wu***, Structural stability enhancement by nonlinear geometry design and piezoelectric layers, ***Journal of Vibration and Control***, Available online, 2018. (***IF***: 2.86) https://doi.org/10.1177/1077546318794540

(36) H. Kh. Bisheh†* and **N. Wu***, Analysis of wave propagation characteristics in piezoelectric cylindrical composite shells reinforced with carbon nanotubes, ***International Journal of Mechanical Science***, Vol.145, 200-220, 2018. (***IF:*** 4.13)

(35) A. Keshmiri†, **N. Wu*** and Quan Wang*, A new nonlinearly tapered FGM piezoelectric energy harvester, ***Engineering Structures***, Vol. 173, 52-60, 2018. (***IF:*** 3.08)

(34) S. Bagheri†, **N. Wu*** and Shaahin Filizadeh, Modeling of capacitor charging dynamics in an energy harvesting system considering accurate electromechanical coupling effects, ***Smart Materials and Structures***, Vol.27, 065026, 2018. (***IF:*** 3.54)

(33) H. Kheirollahi† and **N. Wu***, Wave propagation characteristics in a piezoelectric coupled laminated composite cylindrical shell by considering transverse shear effects and rotary inertia, ***Composite Structures***, Vol. 191, 123-144, 2018. (***IF:*** 4.82)

(32) S. Osho†, **N. Wu***, M. Aramfard†, C. Deng, O. Ojo, Fabrication and calibration of a piezoelectric

nanocomposite paint, ***Smart Materials and Structures***, Vol. 27, 035007, 2018. (***IF:*** 3.54)

(31) E. Rahman**†**, **N. Wu*** and C. Wu, Automotive components fatigue and durability testing with flexible vibration testing table, ***SAE International Journal of Vehicle Dynamics, Stability, and NVH***, 10-02-01-0004, 2018.

(30) A. Keshmiri**†**, **N. Wu*** and Q. Wang, Analytical vibration analysis of nonlinearly tapered cone beam using Adomian Decomposition Method, ***International Journal of Structural Stability and Dynamics***, Vol. 18, 07, 2018. https://doi.org/10.1142/S0219455418501018, 2018. (***IF:*** 2.15)

(29) A. Ghanbari**†**, **N. Wu*** and C. Wu, Experimental study on the crack detection with optimized spatial wavelet analysis and windowing, ***Mechanical Systems and Signal Processing***, Vol.104, 619-630, 2018. (***IF:*** 5.00)

(28) B. Wimarshana**†**, F. Goes**†**, **N. Wu*** and C. Wu, Experimental study on breathing crack detection and evaluation under random loading with Entropy, ***Transactions of CSME***, Vol. 41, 2018.

(27) V. Nguyen*, **N. Wu** and Q. Wang, A review on energy harvesting from ocean waves by piezoelectric technology, ***Journal of Modeling in Mechanics and Materials***, Vol. 1, ISSN (Online) 2328-2355, 2017. DOI: https://doi.org/10.1515/jmmm-2016-0161 (New journal for 2016)

(26) A. Ghanbari Mardasi**†**, **N. Wu*** and C. Wu, High Sensitivity Crack Detection and Locating with Optimized Spatial Wavelet Analysis, ***International Journal of Mechanical, Aerospace, Industrial, Mechatronic and Manufacturing Engineering***, Vol.11, 858-863, 2017.

(25) B. Wimarshana**†**, **N. Wu*** and C. Wu, Application of entropy to breathing crack identification on a beam structure: simulation and experiment studies, ***Structural Health Monitoring***, Vol.17, 549-564, 2017. (***IF:*** 4.93)

(24) B. Wimarshana**†**, **N. Wu*** and C. Wu, Entropy parameter optimization for high sensitive damage identification, ***Structural Monitoring and Maintenance***, Vol.4, 33-52, 2017. (***IF:*** 2.10)

(23) Y.K. Cheng**†**, **N. Wu*** and Q. Wang, An efficient piezoelectric energy harvester with frequency self-tuning, ***Journal of Sound and Vibration***, Vol. 396, 69-82, 2017. (***IF:*** 3.12)

(22) S. Zhao**†**, **N. Wu*** and Q. Wang, Crack identification through scan-tuning of vibration characteristics using piezoelectric materials, ***Smart Materials and Structures***, Vol.26, 025005, 2016. (***IF:*** 3.54)

(21) S. Zhao**†**, **N. Wu** and Q. Wang*, Damage detection of beams by a vibration characteristics tuning technique through an optimal design of piezoelectric, ***International Journal of Structural Stability and Dynamics***, Vol.16, 1550070, 2016. (***IF:*** 2.15)

(20) **N. Wu***, Study on the forced vibration of a beam with a breathing crack using iteration method, ***Journal of Mechanical Science Technology***, Vol.29 pp. 2827-2835, 2015. (***IF:*** 1.22)

(19) **N. Wu**, Q. Wang* and X.D. Xie, Ocean wave energy harvesting by a piezoelectric coupled buoy structure, ***Applied Ocean Research***, Vol.50 pp. 110-118, 2015. (***IF:*** 1.95)

(18) X.D. Xie, Q. Wang* and **N. Wu**, Energy harvesting from transverse ocean waves by a piezoelectric plate, ***International Journal of Engineering Science***, Vol. 81 pp.41-48, 2014. (***IF:*** 9.05)

(17) X.D. Xie, Q. Wang* and **N. Wu**, A ring piezoelectric energy harvester excited by magnetic forces, ***International Journal of Engineering Science***, Vol. 77 pp.71-78, 2014. (***IF:*** 9.05)

(16) X.D. Xie, Q. Wang* and **N. Wu**, Potential of a piezoelectric energy harvester from sea waves, ***Journal of Sound and Vibration***, Vol. 333 pp.1421-1429, 2014. (***IF:*** 3.12)

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