

Curriculum Vitae

PERSONAL DETAILS

Shujun Ma, Ph.D

Associate Professor

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School of Mechanical Engineering and Automation

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EDUCATION BACKGROUNDS

The University of Queensland, Australia

Doctor of Philosophy

Nov. 2009—Mar.2014

- Major: Mechanical Engineering

Northeastern University (NEU, "985" Group University in China), P. R. China

Master of Engineering,

Sep. 2007—Jul. 2009

- Major: Mechatronic Engineering

Northeastern University (NEU, "985" Group University in China), P. R. China

Bachelor of Engineering

Sep. 2003—Jul. 2007

- Major: Mechanical Engineering and Automation

PROFESSIONAL CAREER

Northeastern University(NEU, "985" Group University in China), P. R. China

Associated professor

Apr. 2014—present

The University of Queensland , Australia

Tutor

Mar. 2010—June. 2012

PUBLICATIONS

A. Selected Journal Papers

1. **Shujun Ma***, Qi Liu, Yantao Yu, Yu Luo, Shiliang Wang. Quantitative phase imaging in digital holographic microscopy based on image inpainting using a two-stage generative adversarial network, **Optics Express**, 2021, 29(16): 24928-24946.
2. **Shujun Ma***, Kang Yang, Shiliang Wang, Hui Liu, Xu Zhou, Muxin Li. Dynamic characteristics of a prestressed micro-diaphragm in a fluid subjected to distributed mass loading, **Journal of Applied Physics**, 2021, 130: 024504.
3. **Shujun Ma***, Rui Fang, Yu Luo, Qi Liu, Shiliang Wang, Xu Zhou. Phase aberration compensation via deep learning in digital holographic microscopy, **Measurement Science and Technology**, 2021, 32: 105203.
4. **Shujun Ma***, Effects of residual stress and fluid loading on vibrations of a micro-diaphragm on a free fluid surface, **AIP Advances**, 2021, 11(2): 025128.
5. **Shujun Ma***, Haijian Bai, Shiliang Wang, Liang Zhao, Kang Yang, Rui Fang, Xu Zhou, Detecting the mass and position of a particle by the vibration of a cantilevered micro-plate, **International Journal of**

Mechanical Sciences, 2020,172:105413.

6. **Shujun Ma***, Kang Yang, Shiliang Wang, Precise measurement of a concentrated mass and its position by the vibration of a rectangular micro-diaphragm, **Applied Physics Express**, 2019, 12:075006.
7. **Shujun Ma***, Han Huang, The virtually added mass effect of air on a pre-stressed micro-diaphragm sensor, **Vacuum**, 2019, 166:57-63
8. **Shujun Ma***, Xinhui Bai, Yinglei Wang, Rui Fang, Robust Stereo Visual-Inertial Odometry Using Nonlinear Optimization, **Sensors**, 2019, 19 (17): 3747
9. **Shujun Ma***, Xiaoxiao Wang, The impact of adsorbate mass on a nanomechanical resonator, **Microsystem Technologies**, 2019, 25 (10) :3837-3846
10. Ming Dong, **Shujun Ma***, Shiliang Wang, The dynamic characteristics of micro-diaphragms subjected to thermal stress when coupled with a fluid, **Journal of Applied Physics**, 2018, 124 (12): 125306 (**AIP Featured Article**, <https://aip.scitation.org/doi/10.1063/1.5060730>)
11. **Shujun Ma***, Ming Dong, Shiliang Wang, Mode dependent fluid damping in pre-stressed micro-diaphragm resonators, **Journal of Applied Physics**, 2018, 124 (23): 235305
12. **Shujun Ma***, Qiang Xiu, Simultaneous determination of position and mass of a particle by the vibration of a diaphragm-based nanomechanical resonator, **Meccanica**, 2017, 52(9):2101-2109.
13. **Shujun Ma***, Qiang Xiu, Mass and position determination of an accreted particle by the vibration of a nanomechanical beam resonator, **Japanese Journal of Applied Physics** , 2017, 56(2):025002
14. Hong Wang, Chi Zhang, Tianwei Shi, Fuwang Wang, **Shujun Ma**, Real-time EEG-based detection of fatigue driving danger for accident prediction, **International Journal of Neural systems**, 2015, 25:1550002
15. **Shujun Ma**, Shiliang Wang, Francesca Iacopi and Han Huang, A resonant method for determining residual stress and elastic modulus of a thin film, **Applied Physics Letters**, 2013, 103:031603
16. Shiliang Wang, Guoliang Chen, Han Huang, **Shujun Ma**, Hongyi Xu, Yuehui He, Jin Zou, Vapor-phase synthesis, growth mechanism and thickness-independent elastic modulus of single-crystal tungsten nanobelts, **Nanotechnology**, 2013, 24: 505705 (**Featured Article**)
17. Francesca Iacopi, Glenn Walker, Li Wang, Laura Malesys, **Shujun Ma**, Benjamin V. Cunnig and Alan Iacopi, Orientation-dependent stress relaxation in hetero-epitaxial 3C-SiC films, **Applied Physics Letters**, 2013, 102:011908
18. **Shujun Ma**, Han Huang, Mingyuan Lu and Martin Veidt, A simple resonant method that can simultaneously measure elastic modulus and density of thin films, **Surface&coatings technology**, 2012, 209:208–211

RESEARCH FUNDS (TOTAL EXTERNAL FUND: RMB¥ 4,596,000)

1. General Program(No. 12072070), (Solo Chief Investigator)(RMB¥620,000)
Agency: National Natural Science Foundation of China(NSFC)
Title: Research on the Theory and Method of Ultrafine Mass Recognition Based on the Vibration of Suspended Membrane Microstructure Jan. 2021—Dec. 2024
2. Fundamental Research Funds for the Central Universities (N2103022), (Solo Chief Investigator)(RMB¥100,000)
Agency: Ministry of Education of China
Title: Research on Key Technology of Tactical Cloverleaf Foucault Pendulum Resonant Micro-Electro-Mechanical System Jan.2021—Dec.2022
3. Fundamental Research Funds for the Central Universities (ZX20200510), (Co-Chief Investigator)(RMB¥1,440,000)
Agency: Ministry of Science and Technology of China Jun.2019—May.2022
Title: Multi-motion mode conversion and decision-making of primate high-mobility robot

4. Youth Program(No. 51505076), (Solo Chief Investigator)(RMB¥236,000)
Agency: National Natural Science Foundation of China(NSFC)
Title: Investigation on the Effects of Air Damping and Residual Stress on the Suspended Thin-film Diaphragm
Jan. 2016—Dec. 2018
5. General Program(No.2015020105), (Solo Chief Investigator) (RMB¥100,000)
Agency: National Natural Science Foundation of Liaoning Province
Title: Research on the Effects of Air Damping and Residual Stress on Dynamic Characteristics of the Suspended SiC Diaphragm
Jan. 2016—Dec. 2017
6. Start-up Research Fund, (Solo Chief Investigator)(RMB¥100,000)
Agency: Northeastern University
Title: Funds for the Recruitment of Young Talents
Jan. 2014—Dec.2016
7. Fundamental Research Funds for the Central Universities (N150308001), (Co-Chief Investigator)(RMB¥1,500,000)
Agency: Ministry of Education of China
Title: Development of the Domestic Robot NEU-1 for the Caring of the Elderly People
Jan.2016—Dec.2018
8. University Innovation Team of Liaoning Province(LT2014006), (Co-Chief Investigator)(RMB¥500,000)
Agency: The Education Department of Liaoning Province
Title: Optimal Design and Control for Intelligent Machines Based on Multilevel Analysis
Jan. 2015—Dec.2016

RESEARCH INTERESTS

- A. Mechanical Characterization of Nano-structured Materials and Micro Devices**
- B. Development of MEMS/NEMS Actuators and Sensors**
- C. Dynamic Testing for Nano-/Micro-Materials and Devices**
- D. Robot Design and Control**