Zinan ZHAO
Ph.D. Candidate
Engineering Mechanics
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Nanjing University of Aeronautics and Astronautics
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Curriculum Vitae

PERSONAL INFORMATION

Date of Birth	06, March 1992
Nationality	The People's Republic of China

EDUCATION

12/2018-Pre.	Visiting Ph.D. student through the China Scholarship Council Grant The State University of New Jersey | Rutgers
04/2016-11/2018	Ph.D. Candidate through the Master-Doctorate program at: Nanjing University of Aeronautics and Astronautics
09/2014-03/2016	Postgraduate study majoring in Solid Mechanics at: Nanjing University of Aeronautics and Astronautics
09/2010-06/2014	Undergraduate study majoring in Engineering Mechanics at: Nanjing University of Aeronautics and Astronautics **GPA: 94 (full points 100)** Dissertation: An Analysis of modes in Strip AT-cut Quartz Resonators and Filter

COMPUTER SKILLS

Programming	MATLAB/ LANGUAGE C
CAE software	COMSOL Multiphysics

RESEARCH INTERESTS

- Theoretical modeling and vibration analysis of thin film bulk acoustic resonators
- Theoretical modeling and vibration analysis of FBAR sensors
- Theoretical modeling and vibration analysis of piezoelectric/piezomagnetic composites with magnetoelectric effect

PUBLICATIONS

[13] **Z. N. Zhao**, X. N. Pang, Z. H. Qian, et al. Lateral size-dependence in UHF mode-coupled ZnO FBARs to suppress undesirable eigen-modes and weaken mounting effect. **IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control**, 2020, early access.

[12] X. L. Zhao, **Z. N. Zhao**, B. Wang, Z. H. Qian. The design of a Frame-Like ZnO FBAR sensor for achieving uniform mass sensitivity

distributions. **Sensors**, 2020, **20**(8): 2408.

[11] **Z. N. Zhao**, B. Wang, J. Q. Zhu, et al. Frequency spectra of coupling vibration in high-frequency thickness-shear ZnO thin film resonator applied in sensing field based on the Hamilton principle. **IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control**, 2019, **66**(8): 1331-1339.

[10] **Z. N. Zhao**, B. Wang, J. Q. Zhu, et al. Frequency spectra of coupling vibration in high-frequency thickness-shear ZnO thin film resonator applied in sensing field based on the Hamilton principle. **IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control**, 2019, **66**(8): 1331-1339.

[9] **Z. N. Zhao**, B. Wang, J. Q. Zhu, Z. H. Qian. Mode couplings in high-frequency thickness-extensional vibrations of ZnO thin film resonator based on weak boundary condition. **International Journal of Mechanical Sciences**, 2018, **148**: 223-230.

[8] **Z. N. Zhao**, B. Wang, Z. H. Qian. Trapped-energy thickness-extensional mode of a partially electroded ZnO thin-film resonator. **IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control**, 2017, **65**(9): 1669-1679.

[7] **Z. N. Zhao**, Z. H. Qian and B. Wang. Thickness-shear vibration of a *z*-strip AT-cut quartz crystal plate with nonuniform electrode pairs. **Ferroelectrics**, 2017, **506**(1): 48-62.

[6] **Z. N. Zhao**, Z. H. Qian and B. Wang. Effects of unequal electrode pairs on an *x*-strip thickness-shear mode multi-channel quartz crystal microbalance. **Ultrasonics**, 2016, 72: 73-79.

[5] **Z. N. Zhao**, Z. H. Qian and B. Wang. Vibration optimization of ZnO thin film bulk acoustic resonator with ring electrodes. **AIP Advances**, 2016, **6**(4): 045201.

[4] **Z. N. Zhao**, Z. H. Qian and B. Wang. Energy trapping of thickness-extensional modes in thin film bulk acoustic wave filters. **AIP Advances**, 2016, **6**(1): 015002.

[3] **Z. N. Zhao**, Z. H. Qian, B. Wang and J. S. Yang. Energy trapping of thickness-extensional modes in thin film bulk acoustic wave resonators. **Journal of Mechanical Science and Technology**, 2015, **29**(7): 2767-2773.

[2] **Z. N. Zhao**, Z. H. Qian, B. Wang and J. S. Yang. Analysis of thickness-shear and thickness-twist modes of AT-cut quartz acoustic wave resonator and filter. **Applied Mathematics and Mechanics-English Edition**, 2015, **36**(12): 1527-1538.

[1] **Z. N. Zhao**, Z. H. Qian, B. Wang and J. S. Yang. Thickness-shear and thickness-twist modes in an AT-cut quartz acoustic wave filter. **Ultrasonics**, 2015, **58**: 1-5.

HONORS AND AWARDS

- National Scholarship for Undergraduate Student, Sep. 2012
- AVIC Special Scholarship, Sep, 2015
- Second Prize of National Post-Graduate Mathematical Contest in Modeling, 2015
- Merit Student of Jiangsu Province, 2015
- 2015/2016/2017 Outstanding Paper Award in SPAWDA
- 2017 Star Innovation Awards of NUAA, 2017
- National Scholarship for Graduate Student, Sep. 2018.
- China Scholarship Council Grant, 2018.
- Merit Student of Jiangsu Province, 2019

REFERENCES

- **Zhenghua QIAN**
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