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个人简述（限300字）

吴大伟，南加州大学博士,广东工业大学特聘教授（兼职），南京航空航天大学教授。研究方向包括高频超声器件与先进超声检测技术、超声电机在医学中应用等。吴大伟于上海交通大学、美国迈阿密大学和南加州大学获得生物医学工程学士、硕士和博士学位,博士毕业后在新西兰皇家科学院工业研究所从事独立科研工作,并于2011年获得永久职务高级研究员。2014年入选新西兰-中国科学家交流计划, 2015年入选“江苏特聘教授”和中组部“千人计划”青年项目（优先资助）。吴大伟博士近年主持新西兰自然科学基金项目、上海航天科技创新基金重点项目、自然科学基金面上项目等六个科研项目,另参与美国国立卫生研究院基金等多个科研课题,在一流国际期刊和国际会议上发表论文近40篇,他引400余次。

学科领域

机械电子, 生物医学工程, 超声无损检测

教育背景

2004/8 - 2009/7, 南加州大学, 生物医学工程, 博士

2002/8 - 2004/7, 迈阿密大学, 生物医学工程, 硕士

1995/9 - 1999/6, 上海交通大学, 生物医学工程, 学士

工作经历

2016/7-至今, 南京航空航天大学, 机械结构力学及控制国家重点实验室, 教授

2016/7-至今, 广东工业大学, 机电学院, 教授（兼职）

2009/8-2016/6, 新西兰皇家科学院, 工业研究所, 研究员/永久职位高级研究员

2000/8-2001/6, 德州仪器（中国）有限公司, 研发部, 应用工程师

1999/8-2000/7, 汕头超声仪器研究所, 工程研发部, 助研

学术兼职

《振动、测试与诊断》常务副主编 2016-2021

中国工程院院刊《Engineering》青年通讯专家 2017-2019

中国医学装备协会超声分会超声换能器及材料专委会 副主任委员 2018-现在

全国高校机械工程测试技术研究会 常务理事 2016-现在

中国振动工程学会动态测试专业委员会 常务委员 2016-现在

广东工业大学特聘教授（兼职）2017-现在

科研项目

[1] 机械结构力学及控制国家重点实验室自主课题, 微声学器件在航空航天领域中的应用基础研究, 30

万, 2017年1月-2018年12月, 主持

- [2] 江苏省重点研发计划(社会发展), 基于多源信息融合及自适应立体增强现实的椎间盘突出微创手术规划与导航关键技术研发, 40万, 2017年7月-2020年06月, 主持
- [3] 国家自然科学基金面上项目, 3D打印高频超声换能器若干关键技术研究, 62万, 2017年1月-2020年12月, 主持
- [4] 江苏省风力机设计高技术研究重点实验室自主课题, 基于无线声发射的风电机叶片在役健康监测技术研究, 2017年5月-2019年5月, 15万, 主持
- [5] 上海航天科技创新基金重点项目, 航天轻合金铸件激光超声CT三维成像检测技术研究, 2014/12-2016/12, 20万元, 已结题, 主持
- [6] 新西兰自然科学基金项目: C8X1004, Nanorods for acoustic microscopes, 2010/10-2013/10, 450万元, 已结题, 主持
- [7] 新西兰皇家科学院核心基金项目, 93583020, 2014/11-2016/06, SIF: Elastography, 90万, 已结题, 主持
- [8] 澳大利亚AMPC基金, 80万元, 2014-2015, 已结题, 主持
- [9] 新西兰皇家科学院核心基金项目, 93583033, Strategic initiatives: capability 2015: Ultrasound 3, 2015, 70万元, 已结题, 主持
- [10] 新西兰-中国科学家交流计划, CHI-14-CIN-001, Development of Miniaturized Ultrasound Array, 2014, 已结题, 主持

主要荣誉

- 中组部第十二批“千人计划”青年项目(优先资助) 2016
- 江苏特聘教授 2015
- 广东省“珠江人才计划”超声检测与监测创新团队, 核心人员2017

代表性成果

1、期刊论文:

- [1] Peng, H., Yang, J., Lu, X., Zhu, P., Wu, D., A lightweight surface milli-walker based on piezoelectric actuation. IEEE Transactions on Industrial Electronics, (2018) Accepted
- [2] Li, X., Yao, Z., Wu, D*, Dynamics modeling and control of a V-shaped linear ultrasonic motor with two Langevin-type transducers. IEEE Transactions on Industrial Electronics, (2018) In Press
- [3] Chen, W., Wang, F., Yan, K., Zhang, Y., Wu, D*, Micro-stereolithography of KNN-based Lead-free Piezoceramics. Journal of American Ceramic Society, (2018) In Press
- [4] Yan, K., Wang, F., Wu D*, Ren, X., Zhu, K., Ferroelectric aging effects and large recoverable electrostrain in ceria-doped BaTiO₃ ceramics. Journal of American Ceramic Society, (2018) 1-18
- [5] 吴大伟, 高频超声换能器技术研究进展与展望, 振动、测试与诊断, 37(1), 1-12, 2017
- [6] 王飞, 张俊, 吴大伟*, 航天铝合金铸件中激光超声数值模拟分析, 宇航材料工艺, 45, 82-87, 2015
- [7] Sun S., Wu, D., Zhu. B., Zhang, Y., Chen, S., Yang, X., Li, Y et., Novel fabrication of a ring-annular array for real-time volumetric endoscopic ultrasound imaging. (2015) Ultrasonics, 60: 6-10.
- [8] Wu D. Development of ultrasonic transducers for endodontal imaging [R]. Callaghan Innovation, Wellington, New Zealand, 2014:1-32.
- [9] Wu D. Development of 2D ultrasonic arrays for Spot-welding application [R]. Callaghan Innovation, Wellington, New Zealand, 2013:1-26.
- [10] Zhu, B., Wu, D., Zhang, Y., Ou-Yang, J., Chen, S., Yang, X.F., Sol-gel derived PMN-PT thick film for high frequency ultrasound linear array applications. Ceramics International, vol.39, issue 8, (2013), pp.8709-8714.
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- [12] Zhou, Q., Wu, D*, Liu, C., Zhu, B., Djuth, F., Shung, K., Micro-machined high frequency (80 MHz) PZT thick film linear arrays. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, vol.57, no.10,

(2010), pp. 2213-2220

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- [14] Sun, P., Zhou, Q., Zhu, B., Wu, D., Hu, C., Cannata, J., Tian, J., Han, P., Wang, G., Shung, K., Design and fabrication of PIN-PMN-PT single crystal high-frequency ultrasound transducers. *IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control*, vol. 56, no.12, (2010) pp. 2760-2763.
- [15] Zhu, J., Lee, C., Kim, E., Wu, D., Hu, C., Zhou, Q., Shung, K., Wang, G., Yu, H., High-overtone self-focusing acoustic transducers for high-frequency ultrasonic Doppler. *Ultrasonics*, vol. 50, no. 6, (2010) pp. 544-547.
- [16] Djuth, F., Liu, C., Wu, D., Zhou, Q., and Shung, K., Development of a high-frequency (~90 MHz), broadband ultrasound microsystem designed to image cellular structure/tissue along the gastrointestinal tract. *IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control (Journal Front Cover)*, vol. 57, no. 8, (2010)
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2、邀请报告:

- [1] High-frequency Piezoelectric Transducers Technologies and Applications, International Workshop on Piezoelectric Materials and Application in Actuators, Kobe Japan, 2018
- [2] 压电器件及其应用, 第八届生物医学光子学年会, 南京, 2016
- [3] Biomedical applications of Ultrasonic motors, The Joint Conference of the International Conference on Biomedical Ultrasound and the International Symposium of Modern Acoustics, Nanjing, 2016
- [4] 高频超声技术及应用, 全国高校机械工程测试技术研究会暨中国振动工程学会动态测试专业委员会 2016年学术交流会, 西安, 2016
- [5] Applications of Micro-fabrication to High Frequency Ultrasound Transducers, International Conference on Biomedical Ultrasound, Shenzhen, China, 2014
- [6] 微加工超声器件及其应用, 中科院光电所微细加工光学技术国家重点实验室, 成都, 2014
- [7] High-Frequency Ultrasound Transducers, 武汉大学第二届国际交叉学科论坛, 武汉, 2014
- [8] High Frequency Ultrasonic Transducers and Their Applications, 华中科技大学国际青年学者东湖论坛, 武汉, 2013

3、会议论文:

- [1] Liu, W., Li, X., Yang, Y., Gong, M., Wu, D., A novel micro ultrasonic motor with a screw-coupled stator and rotor for zoom endoscope. *Symposium on Piezoelectricity, Acoustic Waves, and Device Applications (2019.)*
- [2] Yang, Y., Li, X., Liu, W., Gong, M., Wu, D., Dynamic characteristic of the stator of the ultrasonic motor using the non-uniform thickness piezoelectric ceramic. *Symposium on Acoustic Waves, and Device Applications (2019)*
- [3] Mi, Y., Chen, W., Wu, D., Acoustic emission study of effect of fiber weaving on properties of composite materials, *Proceedings of the IEEE International Ultrasonic Symposium, Kobe, Japan (2018)*

- [4] Chen, W., Wu, D., Micro-stereolithography of KNN piezoceramics for ultrasonic transducers, Proceedings of the IEEE International Ultrasonic Symposium, Kobe, Japan (2018)
- [5] Li, X., Wu, D., Modeling and experimental study on the current harmonics of a high power ultrasonic motor, Proceedings of the IEEE International Ultrasonic Symposium, Kobe, Japan (2018)
- [6] Li, X., Yao, Z., Wu, D., Modeling and control of a V-shaped linear ultrasonic motor. International Workshop on Piezoelectric Materials and Applications in Actuators, Kobe, Japan (2018)
- [7] 张园豪, 陈韦岑, 吴大伟, 微立体光刻快速成型微型压电陶瓷器件, 第17届全国电介质物理、材料学术会议, 广州, 2018
- [8] 米源, 吴大伟, 复合材料纤维编织方式的声发射信号特征研究, 全国声学学术会议, 北京, 2018
- [9] Su, Z., Wu, D., A non-contact method for measuring physical parameters of thin elastic multilayers, Proceedings of the IEEE International Ultrasonic Symposium, Washington DC (2017)
- [10] 王飞, 张俊, 吴大伟, 多层介质空气耦合超声传播特性及物理参数测量研究, 第14届无损检测新技术交流会, 南京, 2016
- [11] Wu, D., Petherick, R., Harris, P., Measurement of local wood velocities by acoustic microscopy. Proceeding of 2013 IEEE International Ultrasonic Symposium, Prague, Czech Republic (2013)
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- [14] Wu, D., Liu, C., Zhou, Q., Djuth, F. and Shung, K., High-frequency micromachined ultrasonic annular arrays. Proceedings of 2009 IEEE International Ultrasonic Symposium, Roma, (2009), pp. 2201-2204
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- [16] Park, J., Hu, C., Wu, D., Zhou, Q., and Shung, K., Compensation of the transducer response for high frequency coded excitation imaging. Proceedings of 2009 IEEE International Ultrasonic Symposium, Roma, (2009) pp. 2312-2315.
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- [18] Wu, D., Zhou, Q., Shung, K., Ultrasonic Backscattering System. 8th Annual Ultrasonic Transducer Engineering Conference, Los Angeles, 2008
- [19] Wu, D., Zhou, Q., Zhu, B., Shung, K., Djuth, F., Liu C., High-frequency (> 100 MHz) PZT thick film transducers and kerless arrays. Proceedings of IEEE International Symposium on Applications of Ferroelectrics, Santa Re, NM (2008)
- [20] Wu, D., Zhou, Q., Shung, K., Liu, C. and Djuth, F., High-frequency piezoelectric PZT film micromachined ultrasonic arrays. Proceedings of the IEEE International Ultrasonic Symposium, Beijing (2008), pp.1222-1225 (Best student paper competition finalists)

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