



师资队伍

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基本资料



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个人简介

教育背景

2002年08月—2006年08月
 香港科技大学机械工程系, 博士
 1999年09月—2002年06月
 兰州大学力学系, 硕士
 1994年09月—1998年07月
 西安交通大学工程力学系, 本科

主要工作经历

2009年09月至今: 浙江大学航空航天学院, 副教授
 2007年09月—2009年09月: 德国卡尔思鲁厄理工大学, 洪堡学者
 2006年09月—2007年08月: 香港科技大学机械工程系, 博士后
 1998年07月—1999年08月: 江西洪都航空工业集团南昌飞机设计研究所, 设计员
 2011年07月—2011年09月: 香港理工大学机械工程系, 访问学者
 2012年08月—2013年11月: 日本京都大学工学院, JSPS研究员

研究方向

智能材料与结构力学, 材料微结构演化动力学和性能调控, 铁电、铁磁以及多铁材料的多尺度模拟(第一性原理计算、相场模拟和有限元分析), 铁电/压电材料的断裂力学

奖励或荣誉

德国洪堡基金, 2007年
 浙江省“钱江人才计划”, 2010年
 浙江省杰出青年基金, 2011年
 浙江大学优秀班主任, 2011年度
 日本文部省JSPS研究奖学金, 2012年

社会兼职

第三届相场法国际研讨会组委会委员(2014)
 第十三届国际断裂力学大会学术委员会委员(2013)
 2013年中国力学大会学术委员会委员
 智能材料/结构和纳米材料国际研讨会共同主席(2012)
 ASME智能材料与结构年会(SMASIS 2009, 2011)分会场的主席
 香港研究资助局(RGC)外部评审专家
 Smart Materials and Structures, Journal of Applied Mechanics, Engineering Fracture Mechanics, Journal of Applied Physics等十余种SCI期刊审稿人

代表性期刊论文(带*为通讯作者)

42. HH Wu, J Wang, SG Cao, LQ Chen, TY Zhang. The unusual temperature dependence of the switching behavior in a ferroelectric single crystal with dislocations. Smart Materials and Structures. 23 (2), 025004, (2014)

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40. Honghui Wu, Jie Wang, Shigu Cao and Tong-Yi Zhang. Micro-/Macro-responses of a Ferroelectric Single Crystal with Domain Pinning and Depinning by Dislocations. *Journal of Applied Physics*. 114 (16), 164108 (2013).
39. Tao Xu, Jie Wang*, Takahiro Shimada and Takayuki Kitamura. Direct approach for flexoelectricity from first-principles calculations: Cases for SrTiO₃ and BaTiO₃. *Journal of Physics:Condensed Matter*. 25 (41), 415901 (2013) .
38. Jie Wang*, Weilin Shu, Takahiro Shimada, Takayuki Kitamura and Tong-Yi Zhang. Role of grain orientation distribution in the ferroelectric and ferroelastic domain switching of ferroelectric polycrystals. *ActaMaterialia* 61:6037 - 6049 (2013) <http://dx.doi.org/10.1016/j.actamat.2013.06.044>
37. Takahiro Shimada, Taku Ueda, Jie Wang and Takayuki Kitamura. Hybrid Hartree-Fock density functional study of charged point defects in ferroelectric PbTiO₃. *Physical Review B* 87:174111(2013) <http://dx.doi.org/10.1103/PhysRevB.87.174111>
36. Jie Wang* and Jianwei Zhang. A real-space phase field model for the domain evolution of ferromagnetic materials. *International Journal of Solids and Structures* 50:3597 - 3609 (2013) <http://dx.doi.org/10.1016/j.ijsolstr.2013.07.001>
35. Honghuiwu, Jie Wang, Shigu Cao and Tong-Yi Zhang. Effect of dislocation walls on the polarization switching of a ferroelectric single crystal. *Applied Physics Letters* 102:232904 (2013) <http://dx.doi.org/10.1063/1.4809945>
34. Jie Wang*, Jianwei Zhang, Takahiro Shimada, Takayuki Kitamura. Strain effect on the evolution of magnetic multi-vortices in ferromagnetic nano-platelets. *Journal of Physics:Condensed Matter*. 25:226002 (13pp) (2013) <http://dx.doi.org/10.1088/0953-8984/25/22/226002>
33. Jie Wang*, Zheng Chen, Takahiro Shimada, Takayuki Kitamura. Unusual domain evolution in semiconducting ferroelectrics: A phase field study. *Physics Letters A*. 04:044 (2013) <http://dx.doi.org/10.1016/j.physleta.2013.04.044>
32. Hongliang Gu and Jie Wang*. The influence of crack face electrical boundary conditions on the nonlinear behavior of ferroelectric single crystal. *Smart Materials and Structures*. 22:065001 (2013) <http://dx.doi.org/10.1088/0964-1726/22/6/065001>
31. Jie Wang*, Benjamin Voelker, Marc Kamlah and Tong-Yi Zhang. Effects of thickness on the polarization states in epitaxial ferroelectric thin films. *ActaMechanica*. 707:869 (2013) <http://dx.doi.org/10.1007/s00707-013-0869-3>
30. Weilin Shu, Jie Wang* and Tong-Yi Zhang. Effect of grain boundary on the electromechanical response of ferroelectric polycrystals. *Journal of Applied Physics*. 112:064108. (2012)
29. Jie Wang and Tong-Yi Zhang. Phase field study of polarization vortex in ferroelectric nanostructures. *Journal of Advanced Dielectrics*, 02:1241002 (2012).
28. Yifan Xia and Jie Wang*. Switching behavior of ferroelectric thin films with deadlayers. *Smart Materials and Structures*, 21: 094019 (2012).
27. Hua Qiao, Jie Wang* and Weiqiu Chen. Phase field simulation of domain switching in ferroelectric single crystal with electrically permeable and impermeable cracks. *ActaMechanicaSolidaSinica*, 25: 1-8. (2012).
26. Jie Wang*, Yifan Xia, Long-Qing Chen and San-Qiang Shi. Effect of strain and deadlayer on the polarization switching of ferroelectric thin film. *Journal of Applied Physics*. 110:114111(2011).
25. Jie Wang and Yu Su. Stability of polarization vortices within two interacting ferroelectric nanoparticles. *Physics Letters A* 375:1019 (2011).
24. Jie Wang*. Strain tunability of dielectric and ferroelectric properties in epitaxial lead titanate ultrathin films. *Theoretical and Applied Mechanics Letters* 1:011003 (2011).
23. Jie Wang* and Marc Kamlah. Effect of electrical boundary conditions on the polarization distribution around a crack embedded in a ferroelectric single domain. *Engineering Fracture Mechanics* 77:3658 (2010).
22. Jie Wang*. Switching mechanism of polarization vortex in single-crystal ferroelectric nanodots. *Applied Physics Letters* 97:192901 (2010).
21. Jie Wang, Marc Kamlah and Tong-Yi Zhang. Phase field simulations of low dimensional ferroelectrics. *ActaMechanica* 214:49 (2010).
20. Yinan Zuo, Jie Wang* and Marc Kamlah. Effect of surface charges on the polarization distribution in ferroelectric nanotubes. *International Journal of Materials Research*. 101:492(2010).
19. Jie Wang* and Marc Kamlah. Intrinsic switching of polarization vortex in ferroelectric nanotubes. *Physical Review B* 80:012101 (2009).
18. Jie Wang* and Marc Kamlah. Three dimensional finite element modeling of polarization switching in a ferroelectric single domain with an impermeable notch. *Smart Materials and Structures*. 18:104008 (2009).
17. Jie Wang*, Marc Kamlah and Tong-Yi Zhang. Phase field simulations of ferroelectric nanoparticles with different long-range-electrostatic and -elastic interactions. *Journal of Applied Physics*. 105:014104 (2009).
16. Jie Wang* and Marc Kamlah. Domain control in ferroelectric nanodots through surface charges. *Applied Physics Letters*. 93:262904 (2008).
15. Jie Wang* and Marc Kamlah. Domain structures of ferroelectric nanotubes controlled by surface charge compensation. *Applied Physics Letters*. 93:042906 (2008).
14. Jie Wang*, Marc Kamlah, Tong-Yi Zhang, Yulan Li and Long-Qing Chen. Size-dependent polarization distribution in ferroelectric nanostructures: Phase field simulations. *Applied Physics Letters* 92: 162905 (2008).
13. Jie Wang and Tong-Yi Zhang. Influence of depolarization field on polarization states in epitaxial ferroelectric thin films with nonequally biaxial misfit strains. *Physical Review B*. 77: 014104 (2008).
12. Jie Wang and Tong-Yi Zhang. Phase field simulations of a permeable crack parallel to the original polarization direction in a ferroelectric mono-domain. *Engineering Fracture Mechanics*. 75:4886 (2008).
11. Pingli Liu, Jie Wang, Tong-Yi Zhang, Yulan Li, Long-Qing Chen, Xingqiao Ma, Wuyang Chu, and Lijie Qiao. Effects of unequally biaxial misfit strains on polarization phase diagrams in embedded ferroelectric thin layers: Phase field

- simulations. *Applied Physics Letters*. 93:132908 (2008).
10. Jie Wang and Tong-Yi Zhang. Phase field simulations of polarization switching-induced toughening in ferroelectric ceramics. *ActaMaterialia*. 55:2465 (2007).
 9. Jie Wang and Tong-Yi Zhang. Size effects in epitaxial ferroelectric islands and thin films. *Physical Review B*. 73: 144107 (2006).
 8. Jie Wang and Tong-Yi Zhang. Effect of long-range elastic interactions on the toroidal moment of polarization in a ferroelectric nanoparticle. *Applied Physics Letters*. 88: 182904 (2006).
 7. Haomiao Zhou, Jie Wang, You-He Zhou, and Xiao-Jing Zheng. Optimal track seeking control of dual-stage actuator for high density hard disk drives. *ActaMechanicaSolidaSinica*, 19:297 (2006).
 6. Jie Wang and Tong-Yi Zhang. Effects of non-equally biaxial misfit strains on the phase diagram and dielectric properties of epitaxial ferroelectric thin films. *Applied Physics Letters*. 86: 192905 (2005).
 5. Jie Wang, Yulan Li, Long-Qing Chen, and Tong-Yi Zhang. The effect of mechanical strains on the ferroelectric and dielectric properties of a model single crystal - Phase field simulation. *ActaMaterialia*, 53: 2495 (2005).
 4. Xusheng Wang, Jie Wang, Minghao Zhao and Tong-Yi Zhang. Microbridge testing on symmetrical trilayer films, *Journal of Microelectromechanical Systems*. 14: 634 (2005).
 3. Jie Wang, San-Qiang Shi, Long-Qing Chen, Yulan Li, and Tong-Yi Zhang. Phase field simulations of ferroelectric/ferroelastic polarization switching, *ActaMaterialia*, 52: 749 (2004).
 2. Jie Wang and You-He Zhou. An analytical solution of electro-mechanic characteristic to a piezoelectric actuator with split electrodes in the control of precision position of magnetic head. *ActaMechanica Sinica*. 34: 622 (2002). (In Chinese)
 1. Jie Wang and You-He Zhou. Spline wavelet decomposition method for vibration control of piezoelectric smart beams. *Journal of Vibration Engineering*. 15: 279 (2002). (In Chinese)

代表性学术会议报告

5. Phase field simulations on the nonlinear fracture of ferroelectric materials. 13th International Conference on Fracture, Beijing, June 16-21, 2013, China (Keynote Presentation)
4. A real space field model for the domain evolution of ferromagnetic materials. IUTAM Symposium on "Hysteresis and Pattern Evolution in Non-equilibrium Solid-Solid Phase Transitions. Hong Kong, August 14-18(2012). (Invited Talk)
3. Phase field study on polarization vortex in ferroelectric nanostructures. International Symposium on Materials for Enabling Nanodevices. UCLA, Los Angeles, USA, August 27-29(2012). (Invited Talk)
2. Polarization vortex in ferroelectric nanodots, International Conference on Computational & Experimental Engineering and Science (ICCES' 11), Nanjing, China, April 18-21, 2011 (Invited Talk)
1. Phase field simulations of ferroelectric domain structures. The 2nd International Workshops on Advances in Computational Mechanics (IWACOM-II). Yokohama, JAPAN. March 29-31(2010) (Invited talk)

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