



数字化制造研究所

正高级职称 (按拼音排序)

副高级职称 (按拼音排序)

中级及其他教工人员
(按拼音排序)

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丁晓宇

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| 学院 | 机械与车辆学院 | |
| 专业 | 机械制造及自动化系 | |
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研究方向

教育及工作经历

2014.6-今, 北京理工大学, 机械与车辆学院, 任教

2009.8-2014.5, 佐治亚理工学院 (美国), 机械工程专业博士, 经济学硕士

2006.8-2009.6, 清华大学, 机械工程专业, 硕士

2002.9-2006.7, 清华大学, 机械工程及自动化专业, 学士

研究方向

围绕复杂产品装配技术开展研究工作, 目前的研究包括: 基于机器视觉的装配精度测量、基于接触力学的装配变形预测、基于数字孪生的装配精度在线跟踪、基于信号处理和机器学习的装配质量控制等。

代表性论文及研究项目

代表性论文 (仅列部分SCI, 仅列一作或通讯)

(1) Feikai Zhang; Jianhua Liu; Xiaoyu Ding^{*}; Runliang Wang, Experimental and Finite Element Analyses of Contact Behaviors between Non-transparent Rough Surfaces, Journal of the Mechanics and Physics of

Solids, 2019, 126(5): 87~100.

(2) Zhimeng Yang; Jianhua Liu; Xiaoyu Ding*; Feikai Zhang, The Effect of Anisotropy on the Percolation Threshold of Sealing Surfaces, Journal of Tribology-Transactions of the ASME, 2019, 141, 022203.

(3) Hao Gong; Jianhua Liu; Xiaoyu Ding*, Study on the Mechanism of Preload Decrease of Bolted Joints Subjected to Transversal Vibration Loading, Journal of Engineering Manufacture, 2019.

(4) Hao Gong; Jianhua Liu; Xiaoyu Ding*, Study on the Critical Loosening Condition Toward a New Design Guideline for Bolted Joints, Journal of Mechanical Engineering Science, 2019.

(5) Jiangtao Ma; Jianhua Liu; Xiaoyu Ding*; Naijing Lv, Motion Planning for Deformable Linear Objects Under Multiple Constraints, Robotica, 2019.

(6) Jianhua Liu; Zhiqiang Zhang; Xiaoyu Ding*; Nan Shao, Integrating Form Errors and Local Surface Deformations into Tolerance Analysis Based on Skin Model Shapes and a Boundary Element Method, Computer-Aided Design, 2018, 104(11): 45~59

(7) Jianhua Liu; Hao Gong; Xiaoyu Ding*, Effect of Ramp Angle on the Anti-Loosening Ability of Wedge Self-Locking Nuts Under Vibration, Journal of Mechanical Design-Transactions of the ASME, 2018, 140, 072301.

(8) Jianhua Liu; Zhiqiang Zhang; Xiaoyu Ding*, Searching Multibranch Propagation Paths of Assembly Variation Based on Geometric Tolerances and Assembly Constraints, Journal of Mechanical Design-Transactions of the ASME, 2017, 139(5),051701.

(9) Naijing Lv; Jianhua Liu; Xiaoyu Ding*; Haili Lin, Assembly simulation of multi-branch cables, Journal of Manufacturing Systems, 2017, 45: 201~211.

(10) Feikai Zhang; Jianhua Liu; Xiaoyu Ding*; Zhimeng Yang, An Approach to Calculate Leak Channels and Leak Rates Between Metallic Sealing Surfaces, Journal of Tribology-Transactions of the ASME, 2017, 139(1), 011708.

(11) Xiaoyu Ding; Tequila Harris, Review on Penetration and Transport Phenomena in Porous Media during Slot Die Coating, Journal of Polymer Science Part B-Polymer Physics, 2017, 55, 1669-1680.

(12) Xiaoyu Ding*; Jianhua Liu; T. A. L. Harris, A Review of the Operating Limits in Slot Die Coating Processes, AIChE Journal, 2016, 62(7), 2508-2524.

(13) Hao Gong; Jianhua Liu; Xiaoyu Ding*, Calculation of the Effective Bearing Contact Radius for Precision Tightening of Bolted Joints, Advances in Mechanical Engineering, 2016, 8(9), 1-8.

(14) Xiaoyu Ding; Joshua P. Ebin; Tequila Harris; Zhuo Li; Thomas Fuller, Analytical Models for Predicting Penetration Depth during Slot Die Coating onto Porous Media, AIChE Journal, 2014, 60(12), 4241-4252.

(15) X. Ding, T. F. Fuller, T. A. L. Harris, "A Simulation Model to Approximate Penetration of a Non-Newtonian Fluid into a Porous Media during Slot Die Coating", Journal of Coatings Technology and Research, 11, 83-87, 2014.

(16) X. Ding, S. Didari, T. F. Fuller, T. A. L. Harris, "Effects of Annealing Conditions on the Performance of Solution Cast Nafion® Membranes in Fuel Cells", Journal of The Electrochemical Society, 160 (8), F793-F797, 2013.

(17) X. Ding, T. F. Fuller, T. A. L. Harris, "Predicting Fluid Penetration during Slot Coating onto Porous Substrates", Chemical Engineering Science, 99, 67-75, 2013.

- (18) X. Ding, S. Didari, T. F. Fuller, T. A. L. Harris, "Membrane Electrode Assembly Fabrication Process for Directly Coating Catalyzed Gas Diffusion Layers", *Journal of the Electrochemical Society*, 159 (6), B746-B753, 2012.
- (19) X. Ding, T. F. Fuller, T. A. L. Harris, "Effects of Annealing Conditions on the Performance of Solution Cast Nafion® Membranes", *Electrochemical Society Transactions*, 41 (1), 1537, 2011.
- (20) X. Ding, S. Didari, T. F. Fuller, T. A. L. Harris, "A New Fabrication Technique to Manufacture an MEA Using Direct Coating of Nafion® onto Catalyzed GDL", *Electrochemical Society Transactions*, 33 (1), 255, 2010.

科研项目 (仅列部分2019年主持的项目)

| 项目名称 | 项目类别 |
|---------------------------|------------------|
| 微应力装配工艺补偿与平行装配技术研究 | 国防基础科研重点项目 (分承包) |
| 高密度光电微波多功能精密系统集成制造 | 装备预研重点项目 (分承包) |
| 数字化装配技术 | 装备预研项目 (分承包) |
| 燃料电池多层结构装配应力协调控制 | 国家自然科学基金面上项目 |
| 考虑复杂应力场的精密结构装配精度设计理论与控制方法 | 国家自然科学基金青年项目 |
| 基于虚拟现实仿真的三维装配工艺设计与优化技术 | 国家重点实验室开放基金 |
| 振动冲击环境下紧固件松动机理与验证方法研究 | 装备预研领域基金 |

成果及荣誉

- (1) 航天器多分支复杂空间管路集成制造关键技术与装备, 中华人民共和国工业和信息化部, 科技进步, 省部一等奖, 2018.12.
- (2) 面向大型空间飞行器的精密装配关键技术与装备研发及应用, 北京市人民政府, 发明, 省部二等奖, 2018.11.
- (3) 航天器多分支复杂空间管路集成制造关键技术与装备, 中国航天科技集团有限公司, 科技进步一等奖, 2018.5.11.
- (4) 坦克装甲车辆关键零部件设计制造集成技术研究, 中国兵器工业集团公司, 科技进步一等奖, 2017.12.15.
- (5) 坦克装甲车辆螺纹副预紧力精确控制技术, 中国兵器工业集团公司, 科技进步三等奖, 其他, 2017.12.15

社会职务

1. Computer-aided Design, *Journal of Manufacturing Systems*, *Mechanism and Machine Theory* 等多个制造领域知名期刊审稿人。
2. 全国紧固件标准化技术委员会委员。

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