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学术背景概要

博士毕业于澳大利亚悉尼大学，获得澳洲教育部及悉尼大学全额奖学金和杰出学术贡献奖。目前为英国埃克塞特大学终身讲师，科研方向主攻钙化和半钙化组织的生物力学在骨科和牙科中的应用及生物材料开发。曾在德国马克思普朗克研究所获洪堡学者荣誉，以及柏林医学院再生科学荣誉学者称号并获得德国科学研究委员会资助。现已在国际顶级生物力学和生物材料杂志发表 29 篇 SCI 文章，24 篇会议论文及演讲被接受，同时与英国，德国，澳大利亚，日本，马来西亚和中国展开广泛的科研合作及学生培养。

学历

生物医药工程博士，悉尼大学 2010-2014

澳大利亚教育部杰出博士研究生以及科学研究委员会杰出学术贡献奖

论文：“生物力学和生物学在口腔植入体和治疗中的运用和优化” – 导师 Prof. Qing Li & Prof. Michael V. Swain

生物医药工程荣誉学士，悉尼大学 2006-2009

一等荣誉学位，院系杰出学生奖，平均成绩 84.4

论文：“在针对呼吸暂停综合症的持续气道正压疗法中超声雾化的运用” – 导师 Prof. Andrew Ruys and Mr. Alexander Virr.

荣誉学者，项目资金，奖项

英属哥伦比亚大学访问学者 2018

概要：由英国工程与物理科学研究理事会通过埃克塞特大学资助，以访问英属哥伦比亚大学进行髌关节撞击综合征中的组织结构分析和生物力学影响。

德国马克思普朗克研究所洪堡学者 2017-2019

概要：由德国亚历山大·洪堡学会资助，运用共焦激光扫描显微镜、x 射线散射和活体高分辨率断层扫描技术，进行软组织周边骨骼纳米层面的结构以及力学分析。

德国柏林-布兰登堡再生医学荣誉学者 2015-2017

概要：由德国科学研究委员会资助通过柏林医学院资助，运用共焦激光扫描显微镜、x 射线散射，活体高分辨率断层扫描技术以及有限元分析方法，进行长骨骨骼纳米层面的结构以及力学分析。

日本学术振兴委员会促进国际合作项目资助 2016-2017

概要：与日本东北大学合作，运用动态帕特断层扫描技术，研究在癌症转移或双膦酸盐治疗中口腔骨坏死的生物力学成因以及周边骨骼结构的破坏。

悉尼大学澳大利亚科学研究委员会博士后研究员

2014-2015

概要: 与悉尼骨骼研究所以及悉尼牙科医院合作, 运用高分辨断层扫描技术和有限元分析, 研究在生物材料植入体在生物体中的长短期影响。

主要科研方向

生物组织界面多尺度成像和生物力学分析及仿生材料开发

通过多种生物成像手段, 包括活体高分辨率断层扫描技术、低温扫描电子显微镜、共焦激光扫描显微镜、x 射线散射在不同尺度研究生物组织结构, 并配合有限元分析方法研究其力学意义, 以此开发用于工程和医疗的新型复合生物材料。

骨骼病变对组织结构和生物力学分布的影响及相关手术设计

继通过多种生物成像技术分析在常见医疗案例中的骨骼病变 (如继发性癌症, 二磷酸盐治疗, 关节冲击综合症等) 对组织结构造成的影响和生物力学变化, 在此基础上提出对手术过程的优化和新型手术器材的开发。

教学

英国埃克塞特大学终生讲师

2017-至今

本科生课程: 工程设计与实践, 有限元基础

研究生课程: 生物力学和拓扑优化在工程设计中的运用

澳大利亚悉尼大学讲师及助教

2010-2014

本科生课程: 基础力学, 运用生物医药工程学, 生物医学中的有限元运用

研究生课程: 口腔生物材料设计, 组织力学

学术活动

客座教授

马来西亚科技大学, 邀请人牙医学院副院长 Prof. Rohana Ahamd

Oct 2015

日本东北大学, 邀请人牙学院院长 Prof. Keiichi Sasaki

Feb 2015

国际会议组委会

International Conference on the Chemistry and Biology of Mineralized Tissues

May 2017

World Congress of Structural and Multidisciplinary Optimisation (WCSMO-11)

Jun 2015

Australasian Conference on Computational Mechanics (ACCM 2013)

Oct 2013

期刊评审

12 个世界顶级刊物, 包括 Journal of Dentistry, Journal of Mechanical Behavior of Biomedical Materials, Journal of Biomechanics, Biomechanical Modelling and Mechanobiology, International Journal for Numerical Methods in Biomedical Engineering, Materials and Design 等。

代表学术论文及论著

1. **J Chen**, C Rungsiyakull, W Li, Y Chen, MV Swain, Q Li. Multiscale Design of Surface Morphological Gradient for Osseointegration. *Journal of the Mechanical Behavior of Biomedical Materials*, 2013. 20: 387-397.

2. **J Chen**, W Li, MV Swain, AM Darendeliler, Q Li. A Periodontal Ligament Driven Remodelling Algorithm for Orthodontic Tooth Movement. *Journal of Biomechanics*, 2014. 47(7): 1689-1695.
3. **J Chen**, R Ahmad, W Li, H Suenaga, MV Swain, Q Li. A Comparative Study on Complete and Implant Retained Denture Treatments – A Biomechanics Perspective. *Journal of Biomechanics*, 2015. 48(3): 512-519.
4. **J Chen**, R Ahmad, W Li, MV Swain, and Q Li. Review: Biomechanics of Oral Mucosa. *Journal of the Royal Society Interface*, 2015. 12(109): 20150325-20150325.
5. **J Chen**, H Suenaga, W Li, MV Swain, and Q Li. Shape Optimization for Additive Manufacturing of Removable Partial Dentures-A New Paradigm for Prosthetic CAD/CAM – A New Paradigm for Prosthetic CAD/CAM. *PLoS ONE*, 2015. 10(7), e0132552.
6. J Cadman, CC Chang, **J Chen**, Y Chen, SW Zhou, W Li, Q Li. Bioinspired Lightweight Cellular Materials - Understanding Effects of Natural Variation on Mechanical Properties. *Materials Science and Engineering: C*, 2013. 33(6): 3146-3152.
7. C Rungsiyakull, **J Chen**, P Rungsiyakull, W Li, MV Swain, Q Li. Bone's Responses to Different Designs of Implant Supported Fixed Partial Dentures. *Biomechanics and Modelling in Mechanobiology*, 2015. 14(2): 403-411.
8. H Suenaga, **J Chen**, K Yamaguchi, W Li, K Sasaki, MV Swain, Q Li. Mechanobiological bone reaction quantified by positron emission tomography. *Journal of Dental Research*, 2015. 94(5): p. 738-744.
9. Z Liao, **J Chen**, Z Zhang, W Li, MV Swain and Q Li. Computational modeling of dynamic behaviors of human teeth. *Journal of Biomechanics*. 2015. 48(16): 4214-4220.
10. Z Liao, **J Chen**, N Yoda, K Zheng, K Sasaki, MV Swain, Q Li. Simulation of Multistage Non-linear Bone Remodeling Induced by Fixed Partial Dentures of Different Configurations: A Comparative Clinical and Numerical Study. *Biomechanics and Modeling in Mechanobiology*. 2017. 16 (2): 411-423.
11. Z Liao, J Grove, Oyku Dalci, **J Chen**, K Zheng, M. Ali Darendeliler, MV Swain, Q Li. Computational and Clinical Investigation on the Role of Mechanical Vibration on Orthodontic Tooth Movement. *Journal of Biomechanics*. 2017. 26(60):57-64.
12. **J Chen**, LJ Chen, CC Chang, Z Zhang, W Li, MV Swain, Q Li. Micro-CT Based Modelling for Characterising Injection-Moulded Porous Titanium Implants. *International Journal for Numerical Methods in Biomedical Engineering*, 2016. In Press.
13. R Ahmad, MI Abu-Hassan, **J Chen**, MV Swain, Q Li. The relationship of mandibular morphology with residual ridge resorption associated with implant-retained overdentures. *International Journal of Prosthodontics*. 2016. In Press.
14. H Kobari, N Yoda, **J Chen**, T Kawatam, K Sasaki. The effect of the configuration of implants supporting fixed partial denture on the load distribution: A methodological in vivo study. *The International Journal of Oral & Maxillofacial Implants*. 2016. In Press.
15. K Zheng, C Scholes, **J Chen**, R Smith, J Lynch, D Parker, Q Li. Multiobjective Optimization of Cartilage Stress for Non-Invasive, Patient-Specific Recommendations of High Tibial Osteotomy Correction Angle. *Medical Engineering & Physics*. In Press.

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20. N Yoda, Z Liao, **J Chen**, K Sasaki, MV Swain, Q Li. Role of Implant Configurations Supporting 3-unit Fixed Partial Denture on Mandibular Bone Response: Biological-data-based Finite Element Study. *Journal Oral Rehabilitation*, 2016. 43(9):692-701.
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22. N Yoda, Z Liao, **J Chen**, K Sasaki, Q Li. The Biomechanical Responses of Mandibular Bone Installed with Fixed Partial Denture. *Applied Mechanics and Materials*, 2016. 846: p. 276-281.
23. J Fang, Y Gao, X An, GY Sun, **J Chen**, Q Li. Design of Transversely-Graded Foam and Wall Thickness Structures for Crashworthiness Criteria, *Composites Part B*, 2016. 92: p. 338-349.
24. R Ahmad, **J Chen**, MI Abu-Hassan, Q Li, MV Swain. Investigation of Mucosa-Induced Residual Ridge Resorption between Implant-retained Overdenture and Complete Denture. *The International Journal of Oral & Maxillofacial Implants*, 2015. 30(3): p. 657-66.
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26. **J Chen**, R Ahmad, MV Swain, W Li, H Suenaga, Q Li. Comparing Contact Pressure Induced by a Conventional Complete Denture and an Implant-Retained Overdenture. *Applied Mechanics and Materials*, 2014(553): p. 384-89.
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31. **J Chen**, Liangjian Chen, W Li, MV Swain, and Q Li. **Porous Titanium Implant and Micro-CT Based Characterization of Sub-Surface Morphology**. *PRICM – 8*. John Wiley & Sons, Inc., 2013: p. 1579-1586.

