

## 基本信息

姓名	王彬	性别	女	
职称	副研究员	学历	博士	
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研究领域: 天然生物材料结构与性能机理, 仿生功能复合材料结构设计与研发, 高断裂韧性材料结构与内界面设计等。

- 在 *Progress in Materials Science*、*Advanced Materials*、*Materials Today* 等国际权威期刊发表高水平论文 16 篇
- 研究成果被 *Nature Reviews Materials* 等期刊、新华社等媒体广泛采访和报道, 并受中国科学院科学传播局邀请做演讲
- 深圳孔雀人才 (B 类), 广东省珠江人才-青年拔尖人才

## 主持项目

1. 国家自然科学基金, “海洋矿化角蛋白: 鲸须多层次递阶结构与抗断裂耐冲击性能原理及其仿生制备”, 51703240
2. 深圳市海外高层次人才创新项目, “基于海洋仿生的防腐蚀与抑菌抗污损复合涂层研发”, KQJSCX20180330170430100
3. 中国科学院深圳先进院新引进人才及优秀青年创新基金, “基于海洋植物结构与成分的仿生环保防腐蚀涂层研发”, 201808

## 发表论文 (三篇论文影响因子>20, ESI高被引论文(一作)一篇)

1. MM Cui, B Wang\*, ZK Wang\*, Nature-inspired strategy for anticorrosion, *Advanced Engineering Materials*, 2019, 1801379, 1-13
2. B Wang\*, T Sullivan, A Pissarenko, A Zaheri, H Espinosa, M Meyers\*, Lessons from the ocean: Whale baleen fracture resistance, *Advanced Materials*, 2018, 1804574,1-6.
3. B Wang, M Meyers. Light like a feather: a fibrous natural composite with a shape changing from round to square, *Advanced Science*, (2017), 4, 1600360, 1-10
4. T Sullivan, B Wang, H Espinosa, M Meyers. Extreme lightweight structures: avian feathers and bones, *Materials Today*, (2017) 20, 377-391
5. B Wang, W Yang, J McKittrick, M Meyers. Keratin: Structure, mechanical properties, occurrence in biological organisms, and efforts at bioinspiration. *Progress in Materials Science*, (2016) 76, 229-318
6. B Wang, M Meyers. Seagull feather shaft: correlation between structure and mechanical responses, *Acta Biomaterialia*, (2017) 48, 270-288
7. B Wang\*, T Sullivan. A review of terrestrial, aerial and aquatic keratins: the structure and mechanical properties of pangolin scales, feather shafts and baleen plates, *Journal of the Mechanical Behavior of*

*Biomedical Materials*, (2017) 76, 4-20

8. M Chon, M Daly, B Wang, X Xiao, A Zaheri, M Meyers, H Espinosa. Lamellae spatial distribution modulates fracture behavior and toughness of African pangolin scales, *Journal of the Mechanical Behavior of Biomedical Materials*, (2017) 76, 30-37
9. Y Yu, W Yang, B Wang, M Meyers. Structure and mechanical behavior of human hair, *Materials Science and Engineering: C*, (2017) 73, 152-163
10. B Wang, W Yang, VR Sherman, M Meyers. Pangolin armor: overlapping, structure, and mechanical properties of the keratinous scales. *Acta Biomaterialia*, (2016) 41, 60-74
11. YH Chu, MA Meyers, B Wang, W Yang, JY Jung, CFM Coimbra. A sustainable substitute for ivory: the Jarina seed from the Amazon. *Scientific Reports*, 2015, 14387
12. BF Wang, F Xie, B Wang, X Luo. Microstructure and properties of the Ti/Al<sub>2</sub>O<sub>3</sub>/NiCr composites fabricated by explosive compaction/cladding. *Materials Science and Engineering: C*, (2015) 50,423-331
13. BF Wang, ZL Liu, B Wang, ST Zhao, JY Sun. Microstructural evolution in adiabatic shear band in the ultrafine-grained austenitic stainless steel processed by multi-axial compression. *Materials Science and Engineering: A*, (2014) 611, 100-107
14. B Wang, JH Gao, LG Wang, SJ Zhu, SK Guan. Biocorrosion of coated Mg–Zn–Ca alloy under constant compressive stress close to that of human tibia. *Materials Letters*, (2012) 70,174-176
15. B Wang, SK Guan, J Wang, LG Wang, SJ Zhu. Effects of Nd on microstructures and properties of extruded Mg–2Zn–0.46Y–xNd alloys for stent application. *Materials Science and Engineering: B*, (2011) 176, 1673-1678
16. JH Gao, SK Guan, ZW Ren, YF Sun, SJ Zhu, B Wang. Homogeneous corrosion of high pressure torsion treated Mg-Zn-Ca alloy in simulated body fluid. *Materials Letters*, (2011) 65, 691-693

## 专著/章节

1. SK Guan, JH Hu, LG Wang, SJ Zhu, HX Wang, J Wang, W Li, ZW Ren, S Chen, EC Meng, JH Gao, SS Hou, B Wang, B Chen. Mg alloys development and surface modification for biomedical application. *INTECH Open Access Publisher*, Austria, 2011, P109–152
2. M Meyers and PY Chen, Biological Materials Science, *Cambridge University Press*, 2014, 编辑、准备图表及参考文献、校对并负责习题与解答部分

## 专利

1. 关绍康, 王俊, 王利国, 朱世杰, 王彬, 胡俊华, 吴琼.一种新型可生物降解血管支架用 Mg-Zn-Y-Nd 镁合金及其制备方法[P].中国专利, ZL201110043303.8.

## 奖项/荣誉

- 国际仿生工程学会青年委员会委员, 2019
- 广东省珠江人才计划-青年拔尖人才, 2018
- 深圳市海外高层次孔雀人才 (B类), 2017
- 深圳市南山区, 领航人才, 2017
- 国家留学奖学金, 国家留学基金委, 2012-2016
- 河南省优秀硕士学位论文 (河南省前 1%), 2012
- 因成绩优异获河南省教育厅特批提前一年毕业, 2012
- 特优研究生奖学金, 郑州大学 (1/137), 2010
- 免试推荐研究生, 2010

- 大学奖学金（连续四年），郑州大学，2006-2010
- 国家奖学金，中国教育部，2008

## 媒体采访/报道

1. 中国科学院格致论道 SELF 讲坛“[从神奇动物身上寻宝](#)”，[人民日报](#)、[今日头条](#)等，2018年12月29日
2. “[A whale of a material](#)”, Research Highlight by *Nature Reviews Materials*, December 12, 2018
3. “[中美研究破解鲸须结构 有望开发先进材料](#)”新华社华盛顿，2018年11月30日
4. “[Scientists unlock structural secrets of whale baleen](#)” Phys.org Science X, November 26, 2018
5. “[Chinese, American scientists reveal structures of tough whale baleen](#)” XINHUANET, November 25, 2018
6. “[Chinese scientists unlock structural secrets of whale baleen](#)” EurekAlert! The Global Source for Science News, November 21, 2018
7. “[From the round to the square: the secret of strength in the feather shaft](#)” The International Society of Bionic Engineering, April 7, 2017
8. “[The mighty between the round and the square: the secret lies in the feather shaft](#)” X-MOL, April 4, 2017
9. “[Strength of hair inspires new materials for body armor](#)” UC San Diego Jacobs School of Engineering, Jan 17, 2017
10. “[It’s all in the scale: pangolins inspire flexible armor](#)” Materials Today, June 29, 2016
11. “[Inspired by Nature – Advanced Engineering Designs](#)” Advanced Science News, December 5, 2016
12. “[Researchers explain why feather shafts change shape when under stress](#)” EurekAlert! The Global Source for Science News, December 12, 2015
13. “[Researchers explain why feather shafts change shape when under stress](#)” ScienceDaily, December 12, 2015

## 教育经历

博士 材料科学与工程，加州大学圣地亚哥分校，2012-2016  
 硕士 材料加工工程，郑州大学，2010 - 2012  
 学士 材料科学与工程，郑州大学，2006 - 2010

## 工作经历

副研究员，中国科学院深圳先进技术研究院，2016-至今

## 学术会议与演讲报告

1. 王彬，[中国科学院公众科学日](#)（深圳先进技术研究院）《中科讲坛》的科普演讲与学业指导，深圳，演讲嘉宾，2019年5月18日
2. 王彬，“从神奇动物身上寻宝”，中国科学院 SELF 格致论道讲坛，广州，2018年12月23日，受邀演讲
3. 王彬，“基于海生植物的仿生功能涂层研究”，2018 第五届海洋材料与腐蚀防护大会，珠海，2018年12月8日-10日，会议报告
4. B Wang, “Structure and Mechanical Functions of Biological Materials” The 1st International Youth Conference of Bionic Science and Engineering, 兰州，2017年7月 大会报告

5. 王彬, “天然角蛋白材料及仿生研究”, 兰州理工大学, 兰州, 2017年6月 受邀学术报告
6. B Wang, “Biological materials and bioinspired designs” Academic Frontiers of Advanced Materials, Central South University, Changsha, June 2017. Oral presentation
7. 王彬, “海陆空角质材料结构性能与仿生”, 郑州大学, 郑州, 2017年5月 受邀学术报告
8. B Wang, M Meyers, “The structure and mechanical functions of keratinous materials: Pangolin scales and the feather shaft” *2016 MRS Spring Meeting*, Phoenix, Arizona, USA, March 2016. Oral presentation
9. B Wang, M Meyers, “Functional design of keratinous materials: Pangolin scales and feather shaft” *2016 TMS Annual Meeting*, Nashville, Tennessee, USA, February 2016. Oral presentation
10. B Wang, M Meyers, “The feather shaft: A unique design in nature” *6<sup>th</sup> International Conference on Mechanics of Biomaterials and Tissues*, Waikoloa, Hawaii, USA, December 2015. Poster presentation
11. Y Yu, B Wang, M Meyers, “On the strain rate sensitivity of keratin hair fibers” *6<sup>th</sup> International Conference on Mechanics of Biomaterials and Tissues*, Waikoloa, Hawaii, USA, December 2015. Poster presentation
12. B Wang, M Meyers, “Protective function of pangolin scales: Structure and mechanical properties” *2015 TMS Annual Meeting*, Orlando, Florida, USA, March 2015. Oral presentation
13. Y Yu, B Wang, M Meyers, “Structure and mechanical behavior of human hair” *UC San Diego Jacobs School of Engineering, Research Expo*, San Diego, USA, April 2015. Poster presentation
14. B Wang, M Meyers, “Protective functions of the pangolin scale: Structure and mechanical properties” *UC San Diego Jacobs School of Engineering, Research Expo*, San Diego, USA, April 2015. Poster presentation
15. B Wang, M Meyers, “Structure and mechanical properties of pangolin scales as flexible dermal armor” *UC San Diego Jacobs School of Engineering, Research Expo*, San Diego, USA, April 2013. Poster presentation
16. B Wang, JH Gao, SK Guan, “Biocorrosion of coated magnesium alloys under constant compressive stress similar to that of human tibia” *Student Exchange Support Program sponsored by Japan Student Services Organization*, Shizuoka University, Hamamatsu, Japan, November 2011. Oral presentation
17. B Wang, JH Gao, LG Wang, SK Guan, “Biocorrosion of coated Mg-Zn-Ca alloy under constant compressive stress similar to that of human tibia” *The 2<sup>nd</sup> Symposium on Biomedical Materials between Mainland and Taiwan*, Zhengzhou, China, October 2011. Poster presentation
18. SK Guan, J Wang, B Wang, P Wang, “Development of novel Mg-Zn-Y-Nd alloy as biodegradable vascular stent” *The 2<sup>nd</sup> International Symposium on Biodegradable Metals*, Maratea, Italy, September 2010. Poster presentation

## 教学与指导学生

### 教学经历

- Teaching assistant for Chinese language taught by Lecturer Xiao Wang, undergraduate course, Chinese Studies Program at *University of California, San Diego* (Fall 2013, Winter and Spring 2014)
- Guest lecturer for NANO 252 “Biomaterials and Biomimetics” taught by Prof. Marc Meyers, graduate course, *University of California, San Diego* (2016 Winter)

### 指导学生

- 陈辰, 本科生 (2019.5-今)  
实习学生, 匹兹堡大学, 化学系
- 李鹏辉, 学士 (2019.2-今)  
联合培养硕士研究生, 郑州大学, 材料科学与工程
- 张鹏利, 学士 (2018.7-2019.3)

- 联合培养硕士研究生，海南大学，材料科学与工程学院
- 崔苗苗，硕士（2017.6-今）  
联合培养博士研究生，香港城市大学，机械工程学院
  - 姜明光，博士（2017.7-2018.2）  
博士后研究员，中国科学院深圳先进技术研究院
  - Christian Bryan (Spring 2016)  
Undergraduate student at *University of California, San Diego, USA*  
Performed sample preparation and structural characterization of baleen
  - Ana Beatriz Malheiros Piquet (Summer 2014)  
Undergraduate exchange student from *Wayne State University* at *University of California, San Diego, USA*  
Performed sample preparation and mechanical testing of feather shaft
  - Yang Yu (Winter, Spring and Fall 2014)  
Graduate student at *University of California, San Diego, USA*  
Studied the hierarchical structure, mechanical and phase transformation of human hair

## 学术服务及影响力

### 评审论文

- Acta Biomaterialia*- Reviewer (January 2019)  
*Bioinspired, Biomimetic and Nanobiomaterials*-Reviewer (October 2018)  
*Journal of the Mechanical Behavior of Biomedical Materials* – Reviewer (September 2018)  
*Springer Series on Polymer and Composite Materials*- Book chapter reviewer (April 2018)  
*Acta Biomaterialia*- Reviewer (April 2018)  
*Acta Biomaterialia*- Reviewer (February 2018)  
*Scientific Reports* – Reviewer (June 2017)  
*Journal of the Mechanical Behavior of Biomedical Materials* – Reviewer (April 2017)  
*Journal of the Mechanical Behavior of Biomedical Materials* – Reviewer (April 2016)  
*Journal of Bionic Engineering* – Reviewer (October 2015 x2)  
*2016 TMS Meeting Proceedings* – Reviewer (October 2015)  
*Scientific Reports* – Reviewer (August 2015)  
*Journal of Materials Research and Technology* – Reviewer (August 2015)  
*Journal of Materials Research and Technology* – Reviewer (October 2014 x2)  
*Journal of Ornithology* – Reviewer (March 2014)

### 学术活动

- 科普讲解志愿者，圣地亚哥科学与工程科普展览，圣地亚哥，美国，2014
- 学术交流报告，米兰理工大学，米兰，意大利，2010

### 学术会议

- 会议组织助理，the 6th International Conference on Mechanics of Biomaterials and Tissue，夏威夷，美国，2015
- 会议组织助理，the 2nd Symposium on Biomedical Materials, 郑州，中国，2011

## 学会

1. Member of The Minerals, Metals, and Materials Society (TMS)
2. TMS Biomaterials Committee member
3. Member of the International Society of Bionic Engineering