

## CURRICULUM VITAE

### Zigang Ge M.B.B.S. ; Ph.D

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### ACADEMIC APPOINTMENTS

Professor of Biomedical Engineering, College of Future Technology, Peking University

Adjunct Professor of Beijing Institute of Traumatology & Orthopedics, Beijing Jishuitan Hospital

#### Adjunct Appointments:

2022.01-	Adjunct Professor	Beijing Institute of Traumatology & Orthopedics, Beijing Jishuitan Hospital
2012.01-	Adjunct Professor	Center for Joint Disease, Peking University Renmin Hospital
2007.02-	Program Faculty	Dept of Biomedical Engineering, College of Engineering, Georgia Institute of Technology, Atlanta, USA

**Research Areas:** cartilage regeneration, biomaterials, immune-regulation of cartilage regeneration

#### Professional Preparation:

1987.09-1993.07 B.Sc Clinical Medicine Peking University

2000.01-2001.12 M.Sc Pharmacy National University of Singapore

2002.01-2005.06 Ph.D. Medicine National University of Singapore

#### Appointments:

2007.02-	Associate Professor/ Professor	Dept of Biomedical Engineering, College of Engineering, Peking University, Beijing, China.
2005.09- 2007.01	Postdoctoral Research Fellow	Faculty of Dentistry, National University of Singapore, Singapore.
1993.08- 1999.12	Orthopaedic Surgeon	Department of Orthopaedics, Beijing Jishuitan Hospital, Beijing, China.

### **Representative Publications:** # SCI Pubs. 50, # SCI Citations 1600+, H-Index 22

1. Yang, Jiabei; Zhang, Xuewei; Chen, Jiaqing; Heng, Boon Chin; Jiang, Yangzi; Hu, Xiaoyu; Ge, Zigang. Macrophages Promote Cartilage Regeneration in a Time- and Phenotype-Dependent Manner. *Journal of Cellular Physiology*, 237:2258-2270(2022). **Q1**
2. Li, Wang; Xiaolei Guo; Jiaqing Chen; Zhen, Zhen; Bin Cao; Wenqian Wan; Yuandong Dou; Haobo Pan; Feng Xu; Zepu Zhang; Jianmei Wang; Daisong Li; Quanyi Guo; Qing Jiang; Yanan Du; Jiakuo Yu; Boon Chin Heng; Qianqian Han\*; **Zigang Ge\***. Key considerations on the development of biodegradable biomaterials for clinical translation of medical devices: With cartilage repair products as an example. *Bioactive Materials*, 9:332-342(2022) . **Q1**
3. Li, Kejia; Fan, Litong; Lin, Jianjing; Heng, Boon Chin; Deng, Zhantao; Zheng, Qiuqian; Zhang, Jue; Jiang, Yangzi\*; **Ge, Zigang\***. Nanosecond Pulsed Electric Fields Prime Mesenchymal Stem Cells to Peptide Ghrelin and Enhance Chondrogenesis and Osteochondral Defect Repair in vivo. *SCIENCE CHINA Life sciences* (2022) doi: 10.1007/s11427-021-1983-y **Q1**
4. Chen, Jiaqing; Yang, Jiabei; Wang, Li; Zhang, Xuewei; Heng, Boon Chin; Wang, Dong-an; **Ge, Zigang\***. Modified Hyaluronic Acid Hydrogels with Chemical Groups that Facilitate Adhesion to Host Tissues Enhance Cartilage Regeneration. *Bioactive Materials*, 6:1689-1698(2021). **Q1**
5. Li, Kejia; Ning, Tong; Wang, Hao; Yangzi Jiang; Zhang, Jue; **Ge, Zigang**. Nanosecond Pulsed Electric Fields Enhance Mesenchymal Stem Cells Differentiation via DNMT1 regulated OCT4/NANOG gene expression. *Stem Cell Research & Therapy*, 11:308 (2020). **Q1**
6. Nanosecond Pulsed Electric Fields Enhanced Chondrogenic Potential of Mesenchymal Stem Cells via JNK/CREB-STAT3 Signaling Pathway. *Stem Cell Research & Therapy*, 10(1) (2019).
7. Enhancement of the Chondrogenic Differentiation of Mesenchymal Stem Cells and Cartilage Repair by Ghrelin. *Journal of Orthopaedic Research* (DOI 10.1002/jor.24224)  
**生物医学权威网站 F1000 推荐: <https://f1000.com/prime/734864919>**
8. TGF- $\beta$ 1 affinity peptides incorporated within a chitosan sponge scaffold can significantly enhance cartilage regeneration. *Journal of Materials Chemistry B* 2018, 6 (4), 675-687.
9. Fabrication, Mechanical Properties, and Biocompatibility of Graphene-Reinforced Chitosan Composites. *Biomacromolecules*, 11 (9):2345–2351 (2010).
10. Hydroxyapatite-chitin materials as potential tissue engineered bone substitutes. *Biomaterials*, 25(6):1049-1058 (2004).

### **Representative Research Projects (5-10):**

1. Beijing Municipal Science & Technology Commission, Administrative Commission of Zhongguancun Science Park: “Mechanism study of Macrophages promote cartilage Regeneration through regulating

## 简历模板

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cartilage progenitor Cells”, RMB 270,000, 2021-2024.

2. Natural Science Foundation of China (NSFC): “Mechanism study of nanosecond pulsed electric fields (nsPEFs) on chondrogenic differentiation of mesenchymal stem cells”, RMB550,000, PI, 2018-2021.
1. Natural Science Foundation of China (NSFC): “Effects of Cell Adhesion of Scaffolding Biomaterials on Distribution, Aggregation and Phenotypes of the Cells”, RMB 730,000, PI, 2015-2018.
2. Natural Science Foundation of China (NSFC): “Synergistic effects of 3D cell aggregation and mechanical stimulus on functionality of chondrocytes”, RMB 300,000, PI, 2010-2012.
3. Natural Science Foundation of China: “Biocompatibility and Characterization of Novel Biomaterials for Cartilage Regeneration”, RMB 40,000, PI, 2010-2012.
4. Natural Science Foundation of China: “Regulating Aggregation of Chondrocytes with Bioactive Microspheres”, RMB 800,000, PI, 2013-2015.
5. National Key Research Grant (973): “Functionalization and Bioadaptation of Novel Biomaterials”, RMB 500,000, Participant, 2012-2016

### **Honors:**

2019-2021 Elsevier China Highly Cited Chinese Scholar (Biomedical Engineering)

2012 Prominent Teacher, Peking University

2012 Labour Union Service Award, Peking University

2006 Singapore Millennium Scholar, Singapore Millennium Foundation

1999 Sasagawa Scholar, National Health Commission of the People’s Republic of China

### **Memberships:**

- **TerMis**, Tissue Engineering & Regenerative Medicine International Society, since 2010; **ORS**, Orthopaedic Research Society, since 2004; **COA**, China Orthopaedic Association, since 1996; **ICRS**, International Cartilage Research Society, since 2012.

### **Services (editorial board, experts committee, conference organizer, invited speaker, etc.):**

2021-onwards standing committee, bone repair materials & devices, China Biomaterials Society

2020-onwards vice-chair, Tissue regeneration branch, China Association of Medical Equipment

2019-onwards Academic Committee, Peking University Shougang Hospital

2019-onwards standing committee, Basic Science of China Section, SICOT-international Society of Orthopaedic Surgery and Traumatology

2019-onwards Founding member & Deputy Head of Innovation and Translation of Orthopedics, China Association of Gerontology and Geriatrics

2012-2018 Member, ICRS, International Cartilage Regeneration & Joint Preservation Society

# 简历模板

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2010-onwards Consultant, center for medical device evaluation, National Medical Products

## Administration

- Review Editor on the Editorial Board of Stem Cell Research (specialty section of Frontiers in Cell and Developmental Biology, Frontiers in Genetics, Frontiers in Oncology and Frontiers in Bioengineering and Biotechnology)
- Adjunct Professor, National Cheng Kung University
- Committee, International Community, Orthopaedic Research Society (US)
- Auditor, Tissue Engineering & Regenerative Medicine International Society-Asian Pacific Chapter
- Committee, Spine & Joint committee, China Association of Gerontics
- Counselor, the State Food & Drug Administration (CFDA, China)
- Associate Editor: International Journal of Tissue Regeneration (IJTR)
- The 15<sup>th</sup> Annual Hilton Head Workshop (2011, US):  
*Topic: Functional Biomaterials for Cartilage Regeneration.*
- International Congress on Materials for Advanced Technology (ICMAT 2011, Singapore):  
*Topic: Functional Biomaterials for Cartilage Regeneration.*
- The 5<sup>th</sup> World Congress on Bioengineering (WACBE 2011, Taiwan) .  
*Topic: PHVE-enhanced PLCL Scaffolds for Cartilage Regeneration.*
- International Symposium of Materials on Regenerative Medicine (2012ISOMRM, Taiwan):  
*Topic: Cells Behave Distinctly due to Difference of Internal Structures of Biomaterials.*
- Inaugural ICMRS-ASBMR International Chinese Musculoskeletal Research Society Conference (Suzhou, P.R. China, 2013):  
*Topic: Effects of Microenvironment on Chondrogenic Differentiation of Stem Cells.*
- 4<sup>th</sup> Sino-European Biomaterials Conference (Jul 01-04, 2013, Sorrento, Italy):  
*Topic: Cells Behave Distinctly due to Difference of Internal Structures of Biomaterials.*
- Tissue Engineering & Regenerative Medicine International Society-Asian Pacific Chapter (TerMis-AP) 2013 Annual Conference (Oct 23-26, 2013, Wuzhen, China)  
*Topic: Evolving History of Chondrogenesis*
- Sino-Swiss Symposium on Medical Technology (2013), Nov 03-04, 2013, Hangzhou, P.R.China  
Topic: "What we need from biomaterials?"
- International Symposium of Materials on Regenerative Medicine (2014ISOMRM), Aug 27-29, 2014, Taoyuan, Taiwan.
- 9<sup>th</sup> Asian-Pacific Congress on Medical and Biological Engineering (APCMBE 2014), Tainan, ROC, Oct 09-12, 2014
- 4<sup>th</sup> International Symposium on Stem Cell Biology & Regenerative Medicine (SCRM 2014), Nov 17-18, 2014, Hong Kong.
- 7<sup>th</sup> World Congress on Preventive and Regenerative Medicine, Nov 4-7, 2014, Taipei, Taiwan

## Publication

### SCI Publication as 1st or Correspondence

1. Yang, Jiabei; Zhang, Xuewei; Chen, Jiaqing; Heng, Boon Chin; Jiang, Yangzi; Hu, Xiaoyu; Ge, Zigang. Macrophages Promote Cartilage Regeneration in a Time- and Phenotype-Dependent Manner. *Journal of Cellular Physiology*, 237:2258-2270(2022). **Q1**
2. Li, Wang; Xiaolei Guo; Jiaqing Chen; Zhen, Zhen; Bin Cao; Wenqian Wan; Yuandong Dou; Haobo Pan; Feng Xu; Zepu Zhang; Jianmei Wang; Daisong Li; Quanyi Guo; Qing Jiang; Yanan Du; Jiakuo Yu; Boon Chin Heng; Qianqian Han\*; **Zigang Ge\***. Key

- considerations on the development of biodegradable biomaterials for clinical translation of medical devices: With cartilage repair products as an example. *Bioactive Materials*, 9:332-342(2022) . **Q1**
3. Li, Kejia; Fan, Litong; Lin, Jianjing; Heng, Boon Chin; Deng, Zhantao; Zheng, Qiujian; Zhang, Jue; Jiang, Yangzi\*; **Ge, Zigang\***. Nanosecond Pulsed Electric Fields Prime Mesenchymal Stem Cells to Peptide Ghrelin and Enhance Chondrogenesis and Osteochondral Defect Repair in vivo. *SCIENCE CHINA Life sciences* (2022) doi: 10.1007/s11427-021-1983-y **Q1**
  4. Li, Kejia; Jiang, Yangzi; Yang, Zheng; Heng, Boon Chin; Tian, Hua; Ge, Zigang\*. Can upregulation of pluripotency genes enhance stemness of mesenchymal stem cells? *Stem cell reviews and reports*,2021,17(4):1505-1507. **Q2**
  5. Chen,Jiaqing; Yang, Jiabei; Wang, Li; Zhang, Xuwei; Heng, Boon Chin; Wang, Dong-an; **Ge, Zigang\***. Modified Hyaluronic Acid Hydrogels with Chemical Groups that Facilitate Adhesion to Host Tissues Enhance Cartilage Regeneration. *Bioactive Materials*,6:1689-1698(2021). **Q1**
  6. Chen, Jiaqing; Huang, Yiyqian; Yang, Jiabei; Li, Kejia; Jiang, Yangzi; Heng, Boon chin; Cai, Qing; Zhang, Jue; **Ge, Zigang**. Multiple nanosecond pulsed electric fields stimulation with conductive poly (L-lactic acid)/carbon nanotubes films maintains the multipotency of mesenchymal stem cells during prolonged in vitro culture. *Journal of Tissue Engineering & Regenerative Medicine*, 14:1136-48(2020). **Q2**
  7. Li, Kejia; Ning, Tong; Wang, Hao; Yangzi Jiang; Zhang, Jue; **Ge, Zigang**. Nanosecond Pulsed Electric Fields Enhance Mesenchymal Stem Cells Differentiation via DNMT1 regulated OCT4/NANOG gene expression. *Stem Cell Research & Therapy*, 11:308 (2020). **Q1**
  8. Ning, Tong; Zhang, Kun; **GE, Zigang**. Diverse Effects of Pulsed Electrical Stimulation on Cells – with a Focus on Chondrocytes and Cartilage Regeneration. *European Cells & Materials*, 38:79-93(2019). **Q2**
  9. Fan, Litong; Chen, Jiaqing, Tao, Yanmeng, Yu, Jiakuo, Yang, Zheng; **GE, Zigang**. Enhancement of the Chondrogenic Differentiation of Mesenchymal Stem Cells and Cartilage Repair by Ghrelin. *Journal of Orthopaedic Research*,37(6):1387-1397(2019) (**F1000: <https://f1000.com/prime/734864919>**) **Q1**
  10. Ning, Tong; Guo, Jinsong; Zhang, Kun; Li, Kejia; Zhang, Jue; Yang, Zheng; **GE, Zigang**. Nanosecond Pulsed Electric Fields Enhanced Chondrogenic Potential of Mesenchymal Stem Cells via JNK/CREB-STAT3 Signaling Pathway. *Stem Cell Research & Therapy*, 10(1):45-56(2019). **Q1**
  11. Chen, J.; Li, Y.; Wang, B.; Yang, J.; Heng, B. C.; Yang, Z.; **Ge, Z.**; Lin, J., TGF- $\beta$ 1 affinity peptides incorporated within a chitosan sponge scaffold can significantly enhance cartilage regeneration. *Journal of Materials Chemistry B*: 6 (4), 675-687(2018). **Q1**

12. Zhang, Jingjing; Wang, Justin; Zhang, Hui; Lin, Jianhao; **Ge, Zigang**; Zou, Xuenong. Macroporous interpenetrating network of polyethylene glycol (PEG) and gelatin for cartilage regeneration. *Biomedical Materials*, 11:035014(2016). **Q2**
13. Jingjing Zhang, Ayeesha Mujeeb, Junxia Feng, Yijiang Li, Yanan Du, Jianhao Lin, **Zigang GE\***. Physically Entrapped Gelatin in Polyethylene glycol Scaffolds for three-dimensional Chondrocyte Culture. *Journal of Bioactive and compatible polymers*, 31(5):513-530 (2016). **Q3**
14. Yijiang Li, Chao Li, Ayeesha Mujeeb, Zhaoxia Jin, Zigang GE. Optimization and characterization of chemically modified polymer microspheres and their effect on cell behavior. *Materials Letters*, 154:68-72(2015) (*Impact Factors: 2.49*) **Q2**
15. Jingjing Zhang, Ayeesha Mujeeb, Yanan Du, Jianhao Lin, **Zigang GE**. Probing Cell-Matrix Interactions in RGD-Decorated Macroporous PEG. *Biomedical Materials*, 10:035016(2015) (*Impact Factors:3.70*) **Q2**
16. Xiaoyan Tang, Litong Fan, Li Zeng, Ming Pei, Zigang GE\*. Evolving History of Chondrogenic Differentiation: History, State-of-art and Future perspectives. *European Cells & Materials*, 30:12-27(2015) (*Impact Factors: 4.89*) **Q2**
17. Qianqian Han, Chao Li, Haifeng Liu, Gang Wu, Boon Chin Heng, **Zigang GE\***. Dynamic Distribution of Cells in Porous Scaffolds during Cell Loading. *Journal of Medical and Biological Engineering*, 34(2):130-136 (2014). **Q4**
18. Jingjing Zhang, Yingnan Wu, Tanushree Thote, Eng Hin Lee, Zigang GE\*, zheng yang\*. The influence of scaffold microstructure on Chondrogenic Differentiation of Mesenchymal Stem Cells. *Biomedical Materials*. 9 (2014) 035011. **Q2**
19. Kun Zhang, Jinsong Guo, Zigang Ge\*, Jue Zhang\*. Effect of Nanosecond Pulsed Electric Fields (nsPEFs) on Phenotype of Chondrocytes and Mechanism Study. *Scientific Report*, 4:5836-5844(2014). **Q1**
20. Ayeesha Mujeeb, Zigang Ge. Biomaterials for Cartilage Regeneration. *Journal of the American Academy of Orthopaedic Surgeons*, 22:674-676(2014). **Q1**
21. Yana Dou, Nan Li, Yufeng Zheng, **Zigang GE\***. Effects of Fluctuant Magnesium Concentration may enhance functionality of Chondrocytes. *Journal of Biomedical Materials Research*, 102 A: 4455-4463 (2014). **Q2**
22. Yana Dou, Ayeesha Mujeeb, Yufeng Zheng, Zigang Ge \*. Optimization of Dual Effects of Mg-1Ca Alloys on the behavior of Chondrocytes and Osteoblasts in vitro. *Progress in Natural Science: Materials International*, 24:433-440(2014). **Q3**
23. Chao Li, Jingjing Zhang, Shamus Moran, **Zigang GE\***. Poly (L-Lactide –co- Caprolactone) scaffolds enhanced with poly ( $\beta$ -hydroxybutyrate-co- $\beta$ - hydroxyvalerate) microspheres as a new system for cartilage tissue engineering. *Biomedical Materials*, 8(2):025005(2013). **Q2** Featured article & Editor's Pick: <http://iopscience.iop.org/1748-605X/page/Interview%20with%20Zigang%20Ge>
24. Junfeng Wang, Zhenpeng Guan\*, **Zigang GE\***. Plasma and synovial fluid programmed cell

- death 5 (PDCD5) levels are inversely associated with TNF- $\alpha$  and disease activity in patients with rheumatoid arthritis. *Biomarkers*, 18(2):155-159(2013). **Q3**
25. Jingjing Zhang, Zheng Yang, Chao Li, Yana Dou, Yijiang Li, Thorte Tanushree, Dong-an Wang, **Zigang Ge\***. Cells Behave Distinctly within Sponges and Hydrogels due to differences of Internal Structure. *Tissue Engineering*, 19 A (19-20):2166-2175(2013). **Q2**
  26. Kun Zhang, Tanushree Thote, Qianqian Han, Robert E. Guldberg, Zigang Ge. Effects of Pregnancy on Initiation and Progress of Osteoarthritis in Rats. *Journal of Medical and Biological Engineering*, 33(5): 449-454 (2013). **Q4**
  27. Kun Zhang, Lili Wang, Qianqian Han, Zheng Yang, **Zigang Ge\***. Relationship of Initial Cell Seeding Number and Cell Function of Primary Chondrocytes *in vitro*. *Biomedical Engineering: Applications, Basis and Communications*, 25(5):1340001 (2013). **Q4**
  28. Zheng Yang,\* Yingnan Wu, Chao Li, Tianting Zhang, Yu Zou, James HP Hui, **Zigang Ge\***, Eng Hin Lee. Improved mesenchymal stem cells attachment and *in vitro* cartilage tissue formation on chitosan-modified poly(L-lactide-co-epsilon-caprolactone) scaffold. *Tissue Engineering Part A*, 18 (3,4):242-251(2012). **Q2**
  29. Chunhong Zheng, Jingwen Wang, Yuhong Pang, Jianbin Wang, **Zigang Ge\***, Wenbin Li, and Yanyi Huang\*. High-throughput Immunoassay through In-channel Microfluidic Patterning. *Lab on a chip*, 12, 2487-2490 (2012). **Q1**
  30. **Zigang Ge\***, Chao Li, Boon Chin Heng, Guoxin Cao, Zheng Yang\*. Functional Biomaterials for cartilage regeneration. *Journal of Biomedical Material Research, part A*, 100A:2526-2536(2012). **Q2**
  31. Lili Wang, Kun Zhang, Chunyang Xiong & **Zigang Ge\***. Cytotoxicity of core-shell polystyrene magnetic beads and related mechanisms. *Molecular & Cellular Toxicology*, 8:217-227(2012). **Q4**
  32. Chao Li, Lili Wang, Zheng Yang\*, Gonhyung Kim, Haifeng Chen, **Zigang Ge\***. A Viscoelastic Chitosan-modified three-dimensional Porous Poly (L-lactide-co- $\epsilon$ -caprolactone) Scaffold for Cartilage Tissue Engineering. *Journal of Biomaterials Science: Polymer Edition* 23:405-424(2012). **Q3**
  33. Jing Yin, Zheng Yang, Yongping Cao\*, **Zigang Ge\***. Characterization of Human Primary Chondrocytes of Osteoarthritic Cartilage at Varying Severity. *Chinese Medical Journal*, 124(24):4245-4253 (2011). **Q2**
  34. Hailong Fan, Lili Wang, Keke Zhao, Nan Li, Zujin Shi, **Zigang Ge\*** and Zhaoxia Jin\*. Fabrication, Mechanical Properties, and Biocompatibility of Graphene-Reinforced Chitosan Composites. *Biomacromolecules*, 11 (9):2345-2351 (2010). **Q1**
  35. Qichao Zhao, Jing Yin, Xunda Feng, Zujin Shi, **Zigang Ge\*** and Zhaoxia Jin\*. A biocompatible chitosan composite containing phosphotungstic acid modified single-walled carbon nanotubes. *Journal of Nanoscience and Nanotechnology* 10:1-4(2010). **Q3**
  36. **Zigang Ge**, **Xianfeng Tian**, **Victor Fan**, **Jin Fei Ye**, **Tong Cao**. Histological Evaluation of osteogenesis of 3D-Printed Poly-Lactic-co-glycolic Acid (PLGA) Scaffolds in Rabbit Model. *Biomedical Materials*, 4(2);421001 (2009). **Q2**

37. **Zigang Ge**, Lishan Wang, Boon Chin Heng, Eunice Phay-Shin Tan, Xian Feng Tian, Kai Lu, Victor Tai-Weng Fan, Jin Fei Yeo, Tong Cao. Proliferation and Differentiation of Human Osteoblasts within 3D printed Poly-Lactic-co-Glycolic Acid (PLGA) Scaffolds, *Journal of Biomaterials Applications*, 23(6): 533-547(2009). Q2
38. **Zigang Ge**, Zhaoxia Jin, Tong Cao. Manufacture of degradable polymeric Scaffolds for bone regeneration. *Biomedical Materials*, 3(2):1-11 (2008). Q2
39. **Zigang Ge**, Fang Yang, James CH Goh, Seeram Ramakrishna, Eng Hin Lee. Biomaterials and Scaffolds for Ligament Tissue Engineering. *Journal of Biomedical Material Research*, 77A:639-652 (2006). Q2
40. **Zigang Ge**, Yang Hu, Boon Chin Heng, Zheng Yang, Hongwei Ouyang, Eng Hin Lee, Tong Cao. Osteoarthritis and Therapy. *Arthritis Care & Research*, 55 (3): 493-500 (2006). Q1
41. **Zigang Ge**, James CH Goh, Eng Hin Lee. Selection of cell sources for ligament tissue engineering. *Cell Transplantation*, 14(8):573-583 (2005). Q2
42. **Zigang Ge**, James CH Goh, Eng Hin Lee. The Effects of Bone Marrow-derived Mesenchymal Stem Cells and Fascia Wrap Application to Anterior Cruciate Ligament Tissue Engineering. *Cell Transplantation*, 14(10):763-773 (2005). Q2
43. **Zigang Ge**, Lishan Wang, Eunice PS Tan, James CH Goh, Eng Hin Lee. Characterization of knitted polymeric scaffolds for potential use in ligament tissue engineering. *Journal of Biomaterials Science-polymer edition*, 16(9):1179-1192 (2005). Q3
44. **Zigang Ge**, Sophie Baguenard, Lee Yong Lim, Aileen Wee, Eugene Khor. Hydroxyapatite-chitin materials as potential tissue engineered bone substitutes. *Biomaterials*, 25(6):1049-1058 (2004). Q1

### Coauthors:

45. Guoxu Zhao<sup>1</sup>, Hongwei Zhou, Guorui Jin, Birui Jin, Songmei Geng, Zhengtang Luo, Zigang Ge, Feng Xu. Rational Design of Electrically Conductive Biomaterials toward Excitable Tissues Regeneration. *Progress in Polymer Science* (2022)
46. Zheng-Zheng Zhang, You-Rong Chen, Shao-Jie Wang, Feng Zhao, Xiao-Gang Wang, Fei Yang, Jin-Jun Shi, **Zi-Gang Ge**, Wen-Yu Ding, Yu-Chen Yang, Tong-Qiang Zou, Ji-Ying Zhang, Jia-Kuo Yu\*, Dong Jiang\*. Orchestrated biomechanical, structural, and biochemical stimuli for engineering anisotropic meniscus. **Science Translational Medicine**, 11:487-501(2019).
47. Yang Zeng, Siyu Feng, Wei Liu, Qinyouen Fu, Yaqian Li, Xiaokang Li, Chun Chen, Chenyu Huang, Zigang Ge, Yanan Du. Preconditioning of mesenchymal stromal cells toward nucleus pulposus-like cells by microcryogels-based 3D cell culture and syringe-based pressure loading system. *J Biomed Mater Res*, 105B:507-520 (2017).
48. Tingting Zhang, Yingnan Wu, Zigang GE, Zheng Yang. Cross-talk between TGF-beta/SMAD and integrin signaling pathways in regulating hypertrophy of mesenchymal stem cell chondrogenesis under deferral dynamic compression. *Biomaterials*, 38: 72-85 (2015).

49. Xinxin Shao, James Goh, Dietmar Huttmacher, Eng Hin Lee, **Zigang Ge**. Repair of large articular osteochondral defects using hybrid scaffolds and bone marrow-derived mesenchymal stem cells in a rabbit model. *Tissue Engineering*, 12(6):1539-1551(2006). Cited 63
50. Boon-Chin Heng, Chao-Peng Ye, Hua Liu, Wei-Seong Toh, Abdul-Jalil Rufaihah, Zheng Yang, Boon-Huat Bay, **Zigang Ge**, Hong-Wei Ouyang, Eng Hin Lee and Tong Cao. Loss of viability during freeze–thaw of intact and adherent human embryonic stem cells with conventional slow-cooling protocols is predominantly due to apoptosis rather than cellular necrosis. *Journal of Biomedical Science*, 23:1-13 (2006).
51. Zhuo Wang, James Goh, Shamal Das De, **Zigang Ge**, Hongwei Ouyang, Eng Hin Lee. Efficacy of Bone Marrow Derived Stem Cells in Strengthening Osteoporotic Bone in a Rabbit Model. *Tissue Engineering*, 12(7): 1753-1761 (2006).cited 28
52. Boon Chin Heng, Kumar Jayaseelan Vinoth, Kai Lu, Xuliang Deng, **Zigang Ge**, Boon Huat Bay, And Tong Cao. Prolonged exposure of human embryonic stem cells to heat shock induces necrotic cell death. *BIOCELL*, 31(3): 405-410 (2007).
53. Haifeng Liu, **Zigang GE**, Yue Wang, Toh-Siew Lok, Vallaya Sutthikhum, James C.H. Goh. Modification of sericin-free silk fibers for ligament tissue engineering application. *Journal of Biomedical Material Research*, 82B (1):129-138(2007).
54. Boon-Chin Heng, Hua LIU, **Zigang GE**, Tong CAO. Mechanical dissociation of human embryonic stem cell colonies by manual scraping after collagenase treatment is much more detrimental to cellular viability compared to trypsinization with gentle pipetting. *Biotechnology and Applied Biochemistry*, 47(1):33-37(2007). Cited 6
55. Tian, X-F; Heng, B-C; **Ge, Z**; Lu, K; Rufaihah, A J; Fan, V T-W; Yeo, J-F; Cao, T. Comparison of osteogenesis of human embryonic stem cells within 2D and 3D culture systems. *Scandavia Journal of Clinical & Lab Investigation*, 68(1):58-67(2008). Cited 11
56. Yi-Ying Cai, Chun Wei Yap, Zhe Wang, Paul C Ho, Sui Yung Chan, Ka-Yun Ng, Zigang GE, Hai-Shu Lin. Solubilization of vorinostat by cyclodextrins. *Journal of Clinical Pharmacy and Therapeutics* 35(5):521-526 (2010).
57. Boon Chin Heng, Mark Richards, **Zigang Ge** and Yimin Shu. Induced adult stem (iAS) cells and induced transit amplifying progenitor (iTAP) cells – a possible alternative to induced pluripotent stem (iPS) cells? *J Tissue Eng Regen Med*, 4(2):159-162 (2010). Cited 1
58. Jinna Son, Yun-Bae Kim, Zigang Ge, Seok-Hwa Choi, Gonhyung Kim. Bone Healing Effects of Diode Laser (808 nm) on a Rat Tibial Fracture Model. *In vivo (Athens, Greece)*, 26(4):703-9 (2012).
59. Bibek Chandra Sutradhar, Gyeongmi Hong, Zigang Ge and Gonhyung Kim\*. Co-culture of bovine chondrocytes with demineralized bone matrix in chitosan-alginate bead enhances chondrogenesis. *Journal of Medical and Biological Engineering* 33(5):518-525(2013).
60. Rui Hao, Jing Yu, Zigang GE, Lingyun Zhao, Fugeng Sheng, Lili Xu, Gongjie Li, Yonglong Hou. Developing Fe<sub>3</sub>O<sub>4</sub> nanoparticles into an efficient multimodality imaging and therapeutic probe. *Nanoscale*, 5(23):11954-11963(2013).

Book Chapter:

11. Xiaoyan Tang,Chao Li,Zheng Yang, **Zigang Ge**. Protocol of Chondrogenesis of BMSC to Chondrocyte Using Chitosan-Modified Poly(L-Lactide-*co*- $\epsilon$ -Caprolactone) Scaffolds, in “A Manual for Differentiation of Bone Marrow-Derived Stem Cells to Specific Cell Types” (*edited By: Gilson Khang , Tatsuya Shimizu, Kee Woei Ng*). *World Scientific Publishing Co., London, 2014.*