



CURRICULUM VITAE

Name: Yan Wei

Present Appointment: Professor

Clinical Professor

Contact Information:

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Education and Working Experience:

- 1997---2002 Bachelor, School of Stomatology, Peking University
- 2002---2004 MD candidate, School of Stomatology, Peking University
- 2009---2012 PhD candidate, School of Stomatology, Peking University
- 2004---2008 Resident, School of Stomatology, Peking University
- 2008---2014 Doctor in charge, School of Stomatology, Peking University
- 2014---2019 Associate Professor, School of Stomatology, Peking University
- 2015---2016 Visiting Scientist, University of Texas at San Antonio, USA
- 2019----- Professor, School of Stomatology, Peking University

Professional Memberships

- . Committee Member of Oral biology, Chinese Stomatological Association, since 2014
- . Member of Geriatric Dentistry, Chinese Stomatological Association, since 2014
- . Specialized Committee Member of Geriatric Dentistry, Beijing Stomatological Association, since 2015

Awards

the National Natural Science Foundation of China Youth Fund, 2019



"Ten thousand plan" National high-level Young talents, 2018

Second prize, Technological Invention Award, the Ministry of Education, 2013

Outstanding Paper Award, the 14th Biomaterials Conference, 2014

First prize, Outstanding Case Award, the 9th Annual Conference of Chinese Geriatric Dentistry, 2014

Research Focus:

Prof. Wei has been engaged in directing stem cell fate commitment via bioinspired artificial extracellular environments. In recent 5 years, the applicant has published more than 36 articles in the peer-reviewed journals, such as *Adv. Mater.* (2019), *ACS Nano* (2013, 2017), *Adv. Funct. Mater.* (2017, 2019). Her major scientific contributions encompass: 1. Firstly elucidated the spatiotemporal behavior rhythm of Mesenchymal stem cells (MSCs) in response to nanotopography and illustrated the molecular mechanism underlying behind mechanotransduction. 2. Invented a new strategy of stem cell fate control by designing a smart nanosurface, which was able to dynamically activate mechanotransduction signaling and significantly accelerate MSCs osteogenic differentiation. 3. Firstly developed a strategy of dramatically promoting implant osteointegration with built-in electric field, which was established between electropositive nanofilms and electronegative bone defect walls to trigger electric sensitive stem cell signaling and biological healing. 4. Proposed a new design philosophy of guiding stem cell programming with biomimetic electroactivity, whereby the destroyed electricity-integrity of periosteum were reconstructed by artificial electric membrane, the migration and differentiation of stem cells were synchronized to prominently guide bone tissue regeneration.

Research Funding

1. Research of the influence of miRNAs-YAP/TAZ signals in nanotopography mediated stem cell lineage diversification. National Natural Science Foundation of China, ¥ 640,000, 01/01/2016-31/12/2019, No. 34570990.
2. Research of the molecular mechanism of stem cell fate commitment manipulated by nanoscale stimuli. Fok Ying Tung Young Teachers Fund, ¥ 180,000, 01/03/2016-31/3/2019, No. 151034.



3. Research of bioactive glass modified graphene in regenerative medicine. National Natural Science Foundation of China, ¥ 250,000, 01/01/2014-31/12/2016, No. 51302005.
4. Regulation of the response of BMSCs to bioactive glass modified graphene. the Doctoral Scientific Fund Project of the Ministry of Education of China, ¥ 40,000, 01/01/2014-31/12/2016, No. 20130001120112.
5. The interaction on the biointerface of nanomaterials and tissue. Beijing Natural Science Foundation of China, ¥ 80,000, 01/01/2014-31/12/2016, No. 7144256.
6. the Beijing Nova Program ¥ 100,000, 01/01/2014-31/12/2016, No. Z14111000180000.
7. The biological research of nanometer materials in bone and tooth regeneration. National Basic Research Program of China, ¥ 460,000, 01/01/2012-31/12/2016, No. 2012CB933901-C

Representative Publications

- 1) **Yan Wei**[#], Shengjie Jiang[#], Mengting Si[#], Xuehui Zhang[#], Jinying Liu, Zheng Wang, Cen Cao, Jianyong Huang, Houbing Huang, Lili Chen, Shutao Wang, Chuanliang Feng^{*}, Xuliang Deng^{*}, Lei Jiang. Chirality controls stem cell lineage diversification through mechanoresponses. *Advanced materials*. 2019, 31(10): 1900582
- 2) Kai Wu, Xiang - Yu Kong, Kai Xiao, **Yan Wei**^{*}, Congcong Zhu, Ru Zhou, Mengting Si, Jijiang Wang, Yuqi Zhang^{*}, Liping Wen^{*}. Engineered Smart Gating Nanochannels for High Performance in Formaldehyde Detection and Removal. *Adv. Funct. Mater.*, 2019, 29(8): 1807953
- 3) **Yan Wei**[#], Xiaojun Mo[#], Pengchao Zhang, Yingying Li, Jinwen Liao, Yongjun Li, Jinxing Zhang, Chenyun Ning, Shutao Wang^{*}, Xuliang Deng^{*}, Lei Jiang. Directing Stem Cell Differentiation via Electrochemical Reversible Switching between Nanotubes and Nanotips of Polypyrrole Array. *ACS Nano*. 2017, 11(6): 5915-5924
- 4) Yun Liu, Xuehui Zhang, Cen Cao, Yuelin Zhang, Jinqi Wei, Yongjun Li, Weiwei Liang, Zhewen Hu, Jinxing Zhang,^{*} **Yan Wei**,^{*} Xuliang Deng^{*}. Built-in Electric Fields Dramatically Induce Enhancement of Osseointegration. *Adv. Funct. Mater.*, 2017, 27(47): 1703771.
- 5) Liu Wentao[#]; **Wei Yan**[#]; Zhang Xuehui; Xu Mingming; Yang Xiaoping; Deng Xuliang^{*}. Lower Extent but Similar Rhythm of Osteogenic Behavior in hBMSCs Cultured on Nanofibrous Scaffolds Versus Induced with Osteogenic Supplement. *ACS Nano*. 2013, 27: 6928.



- 6) Wang Ying[#]; **Wei Yan[#]**; Zhang Xuehui; Xu Mingming; Liu Feng; Ma Qi; Cai Qing*; **Deng Xuliang***. PLGA/PDLLA Core-Shell Submicron Spheres Sequential Release System: Preparation, Characterization and Promotion of Bone Regeneration *in Vitro* and *in Vivo*. *Chemical Engineering Journal*. 2015, 273: 490.(**IF:6.735**)
- 7) Li Yingying[#]; **Wei Yan[#]**; Liao Jing wen; Hao Yuwei; Ning Chengyun*; Jiang Lei; Wang Shutao*. Surface Wettability Switched Cell Adhesion and Detachment on Conducting Polymer Nanoarray. *Advanced Materials Interfaces*. 2016, 3: 1600598.(**IF:6.834**)
- 8) Zhang Xuehui; Meng Song; Huang Ying; Xu Mingming; He Ying; Lin Hong; Han Jianmin; Chai Yuan; **Wei Yan***; Deng Xuliang*. Electrospun Gelatin/beta-TCP Composite Nanofibers Enhance Osteogenic Differentiation of BMSCs and *in Vivo* Bone Formation by Activating Ca²⁺-sensing Receptor Signaling. *Stem Cells International*. 2015, ID507154.(**IF:3.989**)
- 9) Wei Jinqi; Xu Mingming; Zhang Xuehui; Meng Song; Wang Yixiang; Zhou Tuanfeng; Ma Qi; Han Bing; **Wei Yan***; Deng Xuliang*. Enhanced Osteogenic Behavior of ADSCs Produced by Deproteinized Antler Cancellous Bone and Evidence for Involvement of ERK Signaling Pathway. *Tissue Engineering Part A*. 2015, 21: 1810. (**IF:3.508**)
- 10) Meng Song; Zhang Xuehui; Xu Mingming; Heng Boon Chin; Dai Xiaohan; Mo Xiaoju; Wei Jinqi; **Wei Yan***; Deng Xuliang*. Effects of Deer Age on the Physicochemical Properties of Deproteinized Antler Cancellous Bone: an Approach to Optimize Osteoconductivity of Bone Graft. *Biomedical Materials*. 2015, 10: 035006. (**IF:2.897**)
- 11) Dai Xiaohan; Zhang Xuehui; Xu Mingming; Huang Ying; Heng Boon Chin; Mo Xiaoju; Liu Yun; Wei Daqing; Zhou Yu; **Wei Yan***; Deng Xuming*; **Deng Xuliang**. Synergistic Effects of Elastic Modulus and Surface Topology of Ti-Based Implants on Early Osseointegration. *RSC Advances*. 2016, 6: 43685. (**IF:2.936**)
- 12) **Wei Yan**; Song Yu; Deng Xuliang; Han Bing; Zhang Xuehui; Shen Yang; Lin Yuanhua. Dielectric and Ferroelectric Properties of BaTiO₃ Nanofibers Prepared via Electrospinning. *Journal of Materials Science & Technology*. 2014, 30: 743. (**IF:3.609**)
- 13) **Yan Wei**; Jing Li; Wei Zi; Bing Han; Xuliang Deng*. Preparation of CePO₄ Modified ZrO₂ Ceramics with Different Particle Sizes and Their Mechanical Behaviors. *Advances in Materials Science and Engineering*. 2013, ID: 586123. (**IF:1.372**)
- 14) Han Bing; Zhang Xuehui; Liu Haiyang; Deng Xuliang; Cai Qing; Jia Xiaolong; Yang Xiaoping; **Wei Yan***; Li Gang*. Improved Bioactivity of PAN-Based Carbon Nanofibers Decorated with Bioglass Nanoparticles. *Journal of Biomaterials Science-polymer Edition*. 2014, 25: 341. (**IF:1.911**)
- 15) Li Qing; Zhou Gang; Wang Tong; Hou Yongzhao; Deng Xuliang; **Wei Yan***. Investigations into the Biocompatibility of Nanohydroxyapatite Coated Magnetic Nanoparticles under Magnetic Situation. *Journal of Nanomaterials*. 2015, ID: 835604. (**IF:2.207**)
- 16) Zhang Ziang; Liu Haiyang; Lin Yuanhua*; **Wei Yan***; Nan Ce-Wen; Deng Xuliang. Influence



- of La Doping on Magnetic and Optical Properties of Bismuth Ferrite Nanofibers. *Journal of Nanomaterials*. 2012, ID: 238605. (IF:2.207)
- 17) Yongjun Li; Jianjun Wang; Jianchao Ye; Xiaoxing Ke; Gaoyang Gou; **Yan Wei**; Fei Xue; Jing Wang; Chuanshou Wang; Renci Peng; Xuliang Deng; Yong Yang; Xiaobing Ren; Longqing Chen; Cewen Nan; Jinxing Zhang; Mechanical Switching of Nanoscale Multiferroic Phase Boundaries. *Advanced Functional Materials*. 2015, 25, 3405. (IF:13.325)
- 18) Xiaoju Mo; **Yan Wei**; Xuehui Zhang; Qing Cai; Yang Shen; Xiaohan Dai; Song Meng; Xing Liu; Yun Liu; Zhewen Hu; Xuliang Deng*. Enhanced Stem Cell Osteogenic Differentiation by Bioactive Glass Functionalized Graphene Oxide Substrates. *Journal of Nanomaterials*. 2016, ID: 5613980. (IF:2.207)
- 19) Qianqian Wang; Shize Liu; Xuejun Gao; **Yan Wei**; Xuliang Deng; Haifeng Chen; Xuehui Zhang. Remineralizing Efficacy of Fluorohydroxyapatite Gel on Artificial Dentinal Caries Lesion. *Journal of Nanomaterials*. 2015, DOI: 380326. (IF:2.207)
- 20) Wentao Liu; Qing Cai; Feng Zhang; **Yan Wei**; Xuehui Zhang; Ying Wang; Xuming Deng; Xuliang Deng*. Dose-Dependent Enhancement of Bone Marrow Stromal Cells Adhesion, Spreading and Osteogenic Differentiation on Atmospheric Plasma-Treated Poly(l-lactic acid) Nanofibers. *Journal of Bioactive and Compatible Polymers*. 2013, 28: 453. (IF:1.598)
- 21) Xuehui Zhang; Mingming Xu; Lin Song; **Yan Wei**; Yuanhua Lin; Wentao Liu; Boon C. Henge; Hui Peng; Ying Wang; Xuliang Deng*. Effects of Compatibility of Deproteinized Antler Cancellous Bone with Various Bioactive Factors on Their Osteogenic Potential. *Biomaterials*. 2013, 34: 9103. (IF:8.806)
- 22) Zhang Xuehui; Cai Qing; Liu Haiyang; Zhang Shen; **Wei Yan**; Yang Xiaoping; Lin Yuanhua; Yang Zhenguo*; Deng Xuliang*. Calcium Ion Release and Osteoblastic Behavior of Gelatin/beta-Tricalcium Phosphate Composite Nanofibers Fabricated by Electrospinning. *Materials Letters*. 2012, 73, 172.(IF:2.687)
- 23) Peng Hui; Zhang Xuehui; **Wei Yan**; Liu Wentao; Li Shenglin; Yu Guangyan; Fu Xin; Cao Tong; Deng Xuliang*. Cytotoxicity of Silver Nanoparticles in Human Embryonic Stem Cell-Derived Fibroblasts and an L-929 Cell Line. *Journal of Nanomaterials*. 2012, DOI: 160145. (IF:2.207)
- 24) **Yan Wei**; Zhang Xuehui; Song Yu; Han Bing; Hu Xiaoyang; Wang Xinzhi; Lin Yuanhua; Deng Xuliang*. Magnetic Biodegradable Fe₃O₄/CS/PVA Nanofibrous Membranes for Bone Regeneration. *Biomedical Materials*. 2011, ID: 055008. (IF:2.897)
- 25) Sun Wei; Cai Qing; Li Peng; Deng Xuliang*; **Wei Yan**; Xu MingMing; Yang Xiaoping*. Post-Draw PAN-PMMA Nanofiber Reinforced and Toughened Bis-GMA Dental Restorative Composite, *Dental Material*. 2010, 26: 873.(IF:4.039)
- 26) Lin Song; Cai Qing; Ji Jianying; Sui Gang; Yu Yunhua; Yang Xiaoping*; Ma Qi; **Wei Yan**;



- Deng Xuliang*. Electrospun Nanofiber Reinforced and Toughened Composites Through *in Situ* Nano-Interface Formation. *Composites Science and Technology*. 2008, 68: 3322.(IF:5.160)
- 27) Wang Xinzhi; Fan Bing; Liu Xingang; Hu Xiaoyang; **Wei Yan**; Wan Zhi; *Deng xuliang; *In Vitro* Inhibition of Oral Candida Albicans by Chicken Egg Yolk Antibody (IgY), *Mycopathologia*. 2008, 165: 381 .(IF:1.476)