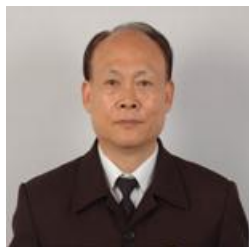


## Curriculum Vitae of Ji-Ye Cai

Professor, PhD

State Key Laboratory for Quality Research in Chinese Medicine

Macau University of Science and Technology



Professor Jiye Cai, man, PhD, supervisor of doctoral students. 1962-1968 studied and graduated from Beijing University, Department of Physics; 1983-1985, visiting scholar at Columbia University, Columbia Radiation laboratory; He finished his PhD degree from Chinese Academy of Sciences, supervised by professor George W Flynn and Songhao Liu; 1992-1994 was senior visiting scholar at Stanford University, Department of Chemistry. He was a major contributor for high resolution, high speed and high sensitivity diode laser probe, and by using this new method, for the first time, obtained vibrationally and rotationally resolved dynamic spectrum of three atom molecule. He sical chemistry----impact parameter dependence of chemical reaction. He and his collaborator had published more than 100 SCI papers, and 6 patents and a book. He was invited to give talks at more than 10 universities and his papers were quoted more than 500 times by other researchers. He had finished 6 Chinese National Natural Science Foundations and Special Foundations by Chinese Department of Science and Technology. He has trained over 60 graduate students and many of them own Yilida Prize, Daheng Prize, Excellent Graduated Students of University of Science and Technology of China and South China Excellent Student Prize. Part of his research results have obtained First Grade Prize of Natural Science of Guangdong Province

(1996), First Grade Prize of Guangdong High Education Bureau (1996) and First Grade Prize of Science and Technology Progress Award (2011).

The research fields of professor Jiye Cai include bionanotechnology, single molecule in situ detection on cell membrane and cell ultrastructures, Quantum Dots marked bio-molecule distribution, and the effect and mechanism of Chinese medicine against cell ultrastructures, etc.

### **Education:**

1962.8-1968.7, Studied at Beijing University, Department of Physics

1983.8-1987.7, PhD, Chinese academy of Science

### **Professional Chronology**

- |                |   |
|----------------|---|
| 1979.1-1998.6  | Chinese Academy of Sciences, Anhui Institute of Optics and Fine Mechanics, research associate, associate professor, professor, advisor of doctoral students |
| 1983.9-1985.10 | Columbia University, Columbia Radiation laboratory; Visiting Scholar  |
| 1992.9-1994.1  | Stanford University, Department of Chemistry, Senior Visiting Scholar   |
| 1994.2-1994.12 | UWO University, Chemical Physics Center, Visiting Professor   |
| 1998.7-now     | Jinan University, Department of Chemistry, Professor, Vice Dean of College of Life Science and Technology   |
| 2013-now       | State Key Laboratory for Quality Research in Chinese Medicine, Macau University of Science and Technology, Distinguished Professor                          |

### **Teaching Subjects:**

- (1) Bionanotechnology (For PhD students)

- (2) Nanoscience and technology (For graduated students)

**Research Field:**

- (1) Bionanotechnology
- (2) Single molecule in situ detection on cell membrane
- (3) Cell ultrastructures

**Awards:**

- (1) First Grade Prize of Natural Science of Guangdong Province (1996)
- (2) First Grade Prize of Guangdong High Education Bureau (1996)
- (3) First Grade Prize of Science and Technology Progress Award (2011)

**Selected Publications and Patents:**

- 1) Huai-Hong Cai, Pei-Hui Yang, HuiWang, Lian-XiHuang, Shi-Xian Wu, Jiye Cai. Label-free oligonucleotide detection method based on a new L-cysteine-dihydroartemisinin complex electroactive indicator. **Electrochemistry Communications**. 2010, 12 10 :1294-1297.
- 2) MuWang, YuxiaRuan, XiaoboXing, QianChen, YuanPeng, JiyeCai. Curcumin induced nanoscale CD44 molecular redistribution and antigen antibody interaction on HepG2 cell surface. **Analytica Chimica Acta** 2011, 697:83-89
- 3) Xiaofang Cai, Xiaoxi Yang, Jiye Cai, ShixianWu, Qian Chen. Atomic Force Microscope-Related Study Membrane-Associated Cytotoxicity in Human Pterygium Fibroblasts Induced by Mitomycin C. **The Journal of Physical Chemistry**. 2010, 114(11):3833-3839.
- 4) Jiang Pi, Hua Jin, Jiye Cai, et al. Pathway of cytotoxicity induced by folic acid modified selenium nanoparticles in MCF-7 cells. **Appl Microbiol Biotechnol** (2013) 97:1051-1062
- 5) Hua Jin, Jiang Pi, Jiye Cai, et al. BMP2 promotes migration and invasion of breast

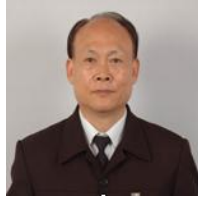
- cancer cells via cytoskeletal reorganization and adhesion decrease: an AFM investigation **Appl Microbiol Biotechnol** (2012) 93:1715–1723
- 6) Hua Jin, Jiang Pi, Xun Huang, Feicheng Huang, Wenxiang Shao, Shengpu Li, Yong Chen, Jiye Cai. BMP2 promotes migration and invasion of breast cancer cells via cytoskeletal reorganization and adhesion decrease: an AFM investigation. **Appl Microbiol Biotechnol** (2012) 93:1715–1723
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  - 8) Yueqin Qiu, Jianbo Chen, Hongying Liao, Yan Zhang, Hua Wang, Shaoyuan Li, Yanfen Luo, Danyun Fang, Guobao Li, Boping Zhou, Ling Shen, Crystal Y. Chen, Dan Huang, Jiye Cai, Kaiyuan Cao, Lifang Jiang, Gucheng Zeng, Zheng W Chen. Tim-3-expressing CD4<sup>+</sup> and CD8<sup>+</sup> T Cells in human tuberculosis (TB) exhibit polarized effector memory phenotypes and stronger anti-TB effector functions. **PLoS Pathogens** 8(11): e1002984.
  - 9) Hua Jin, Peihui Yang, Jiye Cai, Jinhui Wang, Mei Liu. Photothermal effects of folate-conjugated Au nanorods on HepG2 cells. **Appl Microbiol Biotechnol** (2012) 94:1199–1208
  - 10) Hua Jin, Xun Huang, Yong Chen, Hongxia Zhao, Hongyan Ye, Feicheng Huang, Xiaobo Xing, Jiye Cai. Photoinactivation effects of hematoporphyrin monomethyl ether on Gram-positive and -negative bacteria detected by atomic force microscopy. **Appl Microbiol Biotechnol** (2010) 88:761–770
  - 11) Hua Jin, Xing Zhong, Zhiyong Wang, Xun Huang, Hongyan Ye, Shuyuan Ma, Yong Chen, Jiye Cai. Sonodynamic Effects of Hematoporphyrin Monomethyl Ether on CNE-2 Cells Detected by Atomic Force Microscopy. **Journal of Cellular Biochemistry** 112:169–178 (2011)
  - 12) H Zhao, H Jin, J Cai, S Ding. The process of collagen biomineralization observed by

- AFM in a model dual membrane diffusion system. **Ultramicroscopy** 110 (2010) 1306-1311
- 13) HuaJin, XingZhong, ZhiyongWang, XunHuang, HongyanYe, ShuyuanMa, YongChen, JiyeCai. Sonodynamic Effects of Hematoporphyrin Monomethyl Ether on CNE-2 Cells Detected by Atomic Force Microscopy. *Journal of Cellular Biochemistry*. 2011, 112:169-178.
  - 14) Xiaofang Cai, Pengtao You, Jiye Cai, Xiaoxi Yang, QianChen, Feicheng Huang. ART-induced biophysical and biochemical alterations of Jurkat cell membrane. *Micron*. 2011,4:217-228.
  - 15) JiananChen, Yin Pei, Zhengwei Chen, Jiye Cai. Quantum dot labeling based on near-field scanning optical microscopy. *Micron*. 2010, 41(3):198-202
  - 16) MuWang, YuxiaRuan, QianChen, ShengpuLi, QiulanWang, JiyeCai. Curcumin induced HepG2 cell apoptosis-associated mitochondrial membrane potential and intracellular free Ca<sup>2+</sup> concentration. *European Journal of Pharmacology*. 2011, 650:41-47.
  - 17) Wu, Yangzhe, Hu, Yi, Chen, Jianan, Cai, Jiye, He, Xianhui. Activation-induced Reorganization in Membrane Nanostructures and Alteration in Adhesion of CD4<sup>+</sup> T Lymphocytes Exploited by AFM/LFM. *CurrentNanoscience*. 2011, 7(3):420-426.
  - 18) Huai-Hong Cai, XingZhong, Pei-Hui Yang, WeiWei, Jianan Chen, Jiye Cai, Probing site-selective binding of rhodamine B to bovine serum albumin. *Colloids and Surfaces A: Physicochem. Eng. Aspects*. 2010, 372:35-40.
  - 19) Hua Jin, Xiaobo Xing, Hongxia Zhao, Yong Chen, Xun Huang, Shuyuan Ma, Hongyan Ye, Jiye Cai. Detection of erythrocytes influenced by aging and type 2 diabetes using atomic force microscope. *Biochemical and Biophysical Research Communications*. 2010,391:1698-1702
  - 20) Hu M, Chen J, Wang J, Wang X, Ma S, Cai J, Chen CY, Chen ZW. AFM- and NSOM-based Force Spectroscopy and Distribution Analysis of CD69 Molecules on Human CD4<sup>+</sup> T Cell Membrane. *Journal of Molecular Recognition*. 2009,

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- 21) Hua Jin, Hongxia Zhao, Xianxian Chen, Lina Ma, XunHuang, HongyanYe, JiyeCai.  
An easy method to detect the kinetics of CD44 antibody and its receptors on B16 cells using atomic force microscopy. *Mol Biol Rep.* 2010 1.875
- 22) Hua Jin, Shuyuan Ma, Bing Song, Lina Ma, Jiang Pi, Xianxian Chen, Yong Chen, AND Jiye Cai. Liposome Impaired the Adhesion and Spreading of HEK293 Cells: An AFM Study. *Scanning.* 2011, 33:1-6
- 23) XIE WeiLing, YANG PeiHui, ZENG Jin, WANG Hui, CAI HuaiHon, CAI JiYe.  
Visual characterization of targeted effect of holo- transferrin-tagged dihydroartemisinin on human breast cancer cells. . 2010, 55(22):2390-2395.
- 24) Mou C, Chen L. Battle for Pluripotency: Derivation of Induced Pluripotent Stem Cells. *Recent Patents on Regenerative Medicine.* 2011, 1:123-130
- 25) Zhang Y, Ouyang D, Xu L, Ji Y, Zha Q, Cai J, He X. Cucurbitacin B induces rapid depletion of the G-actin pool through reactive oxygen species-dependent actin aggregation in melanoma cells. *Acta Biochim Biophys Sin.* 2011,43(7)

	<b>Inventor</b>	<b>Patent Number</b>	<b>Patent Name</b>
1		ZL01127891.9	
2		ZL01114802.0	
3		ZL91101750.X	





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5		ZL200710032481.8	
6		ZL03139762.X	
7		ZL200510101264.7	5- /
8		ZL200510086599.6	
9		ZL91108839.3	
10		ZL200610165456.9	
11		98225813.5	Q
12		ZL200510033977.4	
13		ZL200510033976.X	-
14		ZL200810220081	
15		ZL200810220084	