

# Jing Tian

## Professor, Doctoral supervisor.

School of Biological Engineering,  
Dalian Polytechnic University,  
1 Qinggongyuan, Dalian 116034,  
P. R. China

Tel:(+86) 411 86324485 (Office)

E-mail: tianjing@dlpu.edu.cn



### Education

**Ph.D. College of Chemical Engineering, Dalian University of Technology 1997-2001**

Thesis: Extraction, separation and enzymatic hydrolysis of soyasaponins.

**M.S. College of Chemical Engineering, Dalian University of Technology 1992-1995**

Thesis: Prediction of programmed temperature retention indices of gas chromatography.

**B.S. Department of Chemistry, Jilin University 1983-1987**

Thesis: Determination of chloride and bromide by vapour molecular absorption spectrometry.

### Work and Research Experience

**Professor 2003- Present**

**School of Biological Engineering, Dalian Polytechnic University**

Topic: Investigation of metabolic pathway of microorganisms via HPLC-MS/MS and GC-MS;

Separation and analysis of biologic samples;

Biocatalysis and bioconversion

**Visiting scholar 2014-2015**

**Department of BIOE, George R. Brown School of Engineering, Rice University**

Topic: metabolic pathway of microorganisms via GC-MS and HPLC-MS based on metabolomics

**Visiting scholar 2008**

**Department of Chemistry, Graduate School of Science, University of Tohoku**

Topic: Enhancement in fluorescence response by a quencher for amiloride upon binding to thymine opposite an abasic site in a DNA duplex

**Post-doctor 2002-2005**

**Dalian Institute of Chemical physics, Chinese Academy of Sciences**

Topic: Screen and identification of strains for biocatalysis

**Associated Professor** **1998-2003**

**Testing and Analytical Center, Dalian Polytechnic University**

Topic: Investigation of biotransformation of soybean saponins and tea saponins

Teaching the course of instrumental analysis for postgraduates

**Lecturer** **1993- 1998**

**Testing and Analytical Center, Dalian Polytechnic University**

Topic: Enhanced physiological activity of soybean saponins via enzyme hydrolysis

**Teaching Assistant** **1987-1993**

**Testing and Analytical Center, Dalian Polytechnic University**

Teaching the course of instrumental analysis

### **Honors and Awards**

- Scientific and Technological Award of Liaoning Province(2013)
- Scientific and Technological Award of Dalian City (2012)
- Outstanding Experts in Dalian City (2010)
- Awarded the State Council special allowance (2008)
- Scientific and Technological Award of Liaoning Province (2007)
- Scientific and Technological Award for young scientists, Dalian City (2006)
- Outstanding Post-doctor of Dalian Institute of Chemical physics, Chinese Academy of Sciences (2003)

### **Projects**

- (1) Design and catalytic mechanism of immobilized lipase based on organic-inorganic hybrid nanoflowers, National Natural Science Foundation of China, 31771914 (Leader and principal investigator)
- (2) Study of the metabolic pathway of microorganisms with UPLC-Q-TOF-MS/MS and GC-MS, National Natural Science Foundation of China, 20776029 (Leader and principal investigator)
- (3) The theory and method of biocatalysis, National Basic Research Program of China, 2003CB716003 (Leader and principal investigator)
- (4) The preparation of new nanoscale immobilized lipase and its catalytic performance, Natural Science Foundation of Liaoning Province of China, 20170540076 (Leader and principal investigator)
- (5) Study of the mechanism of microbial metabolic regulation for the utilization of fructose-based biomass, Natural Science Foundation of Liaoning Province, 2013020167 (Leader and principal investigator)
- (6) Preparation of tea saponins with superior activities by biocatalysis and biotransformation, Key Laboratory Project of Liaoning Province, LS2010012 (Leader and principal investigator)
- (7) Separation and biocatalysis of bioactive substances in biological samples and natural products, Talents Support Program in Universities of Liaoning Province, 2008RC07 (Leader and principal investigator)
- (8) Investigation of enzyme hydrolysis of soybean saponins, Young Scientific Foundation of Dalian City, 0011101 (Leader and principal investigator)

## **Selected Recent Publications**

### **Books**

- (1) **Jing Tian** (One of the chief editors), Chapter 12“ Basic Theory of Chromatography”, Chapter 13 “Gas Chromatography” and Chapter 14 “High Performance Liquid Chromatography”, Modern Instrumental Analysis, Chemical Industry Press, Beijing, 2012.10.
- (2) **Jing Tian**, Chapter 12 “Biotransformation of Soybean Saponins and Tea Saponins”, Biotransformation of Natural Products, Chemical Industry Press, Beijing, 2009.3.
- (3) **Jing Tian**, Chapter 6 “NMR-based Metabonomics”, Metabonomics-Method and Application, Science Press, Beijing, 2008.8.
- (4) **Jing Tian**, Chapter 1 “Basic Theory of Gas Chromatography”, Modern Practical Gas Chromatography, Chemical Industry Press, Beijing, 2004.7.

### **Papers**

- (1) Muzi Jing, Yang Fu, Xu Fei\*, **Jing Tian\***, Hui Zhi, Haiyang Zhang, Longquan Xu, Xiuying Wang, Yi Wang, A novel high-strength polymer hydrogel with identifiability prepared via a one-pot method, *Polymer Chemistry*, 2017, 8, 3553-3559.
- (2) Hui Zhi, Xu Fei\*, **Jing Tian\***, Muzi Jing, Longquan Xu, Xiuying Wang, Dongmei Liu, Yi Wang, Jingyun Liu, A novel transparent luminous hydrogel with self-healing property, *Journal of Materials Chemistry B*, 2017,5, 5681-5900.
- (3) Muzi Jing, Xu Fei\*, Weifan Ren, **Jing Tian\***, Hui Zhi, Longquan Xu, Xiuying Wang, Yi Wang, Self-assembled hybrid nanomaterials with alkaline protease and a variety of metal ions, *RSC Advances*, 2017, 7, 48360-48367.
- (4) Miao Wang, Dongyu Gu\*, Haoquan Li, Qi Wang, Jie Kang, Tingting Chu, Hong Guo, Yi Yang\*, **Jing Tian\***, Rapid prediction and identification of lipase inhibitors in volatile oil from *Pinus massoniana* L. needles, *Phytochemistry*, 2017, 141, 114-120.
- (5) Haiyang Wang, Dongyu Gu\*, Miao Wang, Hong Guo, Huijuan Wu, Guangliang Tian, Qian Li, Yi Yang\*, **Jing Tian\***, A strategy based on gas chromatography–mass spectrometry and virtual molecular docking for analysis and prediction of bioactive composition in natural product essential oil, *Journal of Chromatography A*, 2017, 1501, 128-133.
- (6) Jie Kang, Dongyu Gu, Tao Wu, Miao Wang, Huan Zhang, Hong Guo, Yuxin Yin, Yi Yang\*, **Jing Tian\***, An approach based upon the consecutive separation and the economical two-phase solvent system preparation using UNIFAC mathematical model for increasing the yield of high-speed counter-current chromatography, *Separation and Purification Technology*, 2016, 162, 142-147.
- (7) Miao Wang, Dongyu Gu\*, Xinfeng Guo, Haoquan Li, Yi Wang, Hong Guo, Yi Yang, **Jing Tian\***, Bioassay-guided isolation of an active compound with protein tyrosine phosphatase 1B inhibitory

activity from *Sargassum fusiforme* by high-speed counter-current chromatography, *Journal of Separation Science*, 2016, 39 (22), 4408-4414.

(8) Yue Li, Xu Fei\*, Liwen Liang, **Jing Tian\***, Longquan Xu, Xiuying Wang, Yi Wang, The influence of synthesis conditions on enzymatic activity of enzyme-inorganic hybrid nanoflowers, *Journal of Molecular Catalysis B: Enzymatic*, 2016, 133, 92-97.

(9) Dongfeng Fan, Xu Fei\*, **Jing Tian**, Hui Zhi, Longquan Xu, Xiuying Wang, Yi Wang, Synthesis and investigation of a novel luminous hydrogel, *Polymer Chemistry*, 2016, 6, 5430-5436.

(10) Yi Yu, Xu Fei\*, **Jing Tian\***, Longquan Xu, Xiuying Wang, Yi Wang, Self-assembled enzyme-inorganic hybrid nanoflowers and their application to enzyme purification, *Colloids and Surfaces B: Biointerfaces*, 2015, 130, 299-304.

(11) Liwen Liang, Xu Fei\*, Yue Li, **Jing Tian\***, Longquan Xu, Xiuying Wang, Yi Wang, Hierarchical Assembly of Enzyme-Inorganic Composite Materials with Extremely High Enzyme Activity, *RSC Advances*, 2015, 5, 96997-97002.

(12) Yuansheng Zhang, Yongtao Liu, Xupeng Cao\*, Peng Gao\*, Xinyu Liu, Xiyue Wang, Junjie Zhang, Jiannan Zhou, Song Xue\*, Guowang Xu, **Jing Tian\***, Free amino acids and small molecular acids profiling of marine microalga *Isochrysis zhangjiangensis* under nitrogen deficiency, *Algal Research*, 2015, 13, 207-217.

(13) Xiyue Wang, Fengxu Yang, Yuansheng Zhang, Guowang Xu, Yang Liu\*, **Jing Tian\***, Peng Gao\*, Evaluation and optimization of sample preparation methods for metabolic profiling analysis of *Escherichia coli*, *Electrophoresis*, 2015, 36, 2140-2147.

(14) Dongfeng Fan, Xu Fei\*, **Jing Tian**, Longquan Xu, Xiuying Wang, Shuqi Fan, Yi Wang, Synthesis and investigation of an erbium-containing photosensitive polymer, *Polymer Chemistry*, 2015, 6, 5430-5436.

(15) Xue Yu<sup>#</sup>, **Jing Tian<sup>#</sup>**, Haibo Xie\*, Hongwei Shen, Qian Wang, The integrated production of microbial lipids and bio-SiO<sub>2</sub> from rice husks by an organic electrolytes pretreatment technology, *Bioresource Technology*, 2014, 153, 403-407.

(16) Xiyue Wang, Yuping Xie, Peng Gao\*, Sufang Zhang, Haidong Tan, Fengxu Yang, Rongwei Lian, **Jing Tian\***, Guowang Xu, A metabolomics-based method for studying the effect of *yfcC* gene in *Escherichia coli* on metabolism, *Analytical Biochemistry*, 2014, 451, 48-55.

(17) Shuqi Fan, Xu Fei\*, Xiuying Wang, **Jing Tian**, Longquan Xu, Peng Yang, Yi Wang, Synthesis and investigation of a photosensitive, europium-containing polymer, *Reactive & Functional Polymers*, 2014, 76, 19-25.

(18) Jing Li, **Jing Tian\***, Xu Fei\*, Xiuying Wang, Longquan Xu, Yi Wang, Enzymatic nitration of the oleic acid derivatives: Synthesis, isolation and characterization, *Journal of Molecular Catalysis*

*B: Enzymatic*, 2013, 98, 87-91.

(19) **Jing Tian**, Ping Sang, Peng Gao, Ruiyan Fu, Dawei Yang, Lei Zhang, Jing Zhou, Si Wu, Xin Lu, Yin Li, Guowang Xu\*, Optimization of a GC-MS metabolic fingerprint method and its application in characterizing engineered bacterial metabolic shift. *Journal of Separation Science*, 2009, 32(13), 2281-2288.

(20) **Jing Tian**, Chunyun Shi, Peng Gao, Kailong Yuan, Dawei Yang, Xin Lu, Guowang Xu\*, Phenotype differentiation of three E-coli strains by GC-FID and GC-MS based metabolomics. *Journal of Chromatography B*, 2008, 871(2), 220-226.

### **Patents**

(1) Authorized patent “A method of preparation of oat beta glucan” (ZL 2011 10052851.7)

(2) Authorized patent “A synthesis method of photoluminescent europium-containing hydrogel materials” (ZL 2015 10713329.7)

(3) Authorized patent “A synthesis method of s fluorine-containing polymer for waveguide amplifier” (ZL 2014 10668827.X)

(4) Authorized patent “A method of preparing the interpenetrating network polyvinyl alcohol/silica composite coatings” (ZL 2013 10012729.6)