

# JI-ANG LIU

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**OBJECTIVE:** A research or R&D position for method development, metabolism analysis, peptide or DNA sequencing, instrumentation, fundamental study, etc.

## EDUCATION

Ph.D. in analytical chemistry, May 2005  
Purdue University, West Lafayette, IN  
Thesis: Reactivity of Phenyl Radicals toward DNA Components  
GPA: 3.7/4.0

M.S. in Chemical Engineering, August, 1992  
Chinese Institute of Atomic Energy, Beijing, China  
Thesis: Extraction Mechanism of Tritium in 30%TBP/Kerosene-HNO<sub>3</sub> System  
GPA: 3.9/4.0

B.S. in Applied Chemistry, July, 1989  
Peking University, Beijing, China  
GPA: 3.5/4.0

**HIGHLIGHTS:**

- Designed, developed, and directed research projects for investigation of the presence of pesticides in fruit and vegetables in Beijing, original sources of phosphine, and transportation of phosphorus
- Developed analysis methods for polymers by using novel desorption method and chemical ionization reagent
- Trained co-workers in research and quality control/quality assurance methods
- Trained users to use instruments (GC, HPLC, GC/MS, electrophoresis, UV-VIS spectroscopy, fourier transform ion cyclotron resonance FT-ICR mass spectrometry)
- Developed analysis methods for specific analytes (phosphine, atrazine, clophenA50, 2,4,6-TCP, etc.)
- Demonstrated by using FT-ICR that phenyl radicals with different electron affinities display different reactivity toward oligonucleotides
- Broadened the application of the laser-induced acoustic desorption method and FT-ICR mass spectrometry for study of oligonucleotides

## SKILLS

- 7+ years experience for operation, maintenance and trouble shooting for GC, HPLC, GC/MS, UV-VIS, capillary electrophoresis, ESI as well as HPLC/MS, MALDI/MS and MS/MS
- MO calculations using Gaussian 03
- Familiar with EPA methods for the analysis of volatile and semi-volatile pollutants

## RESEARCH EXPERIENCE

Graduate student, Purdue University, West Lafayette, IN, 2000-present  
Studied the reactivities of phenyl radicals with different electron affinities toward oligonucleotides and ployer analysis by using FT-ICR coupled with laser-induced acoustic desorption; Developed peptide sequencing polymer analysis methods by using novel chemical ionization reagent

Visiting scholar, Environmental Research Institute, University of Connecticut, Storrs, Connecticut, 1999-2000

Developed analytical methods for specific target compounds; Analyzed environmental samples by EPA methods; Wrote reports for sample analysis

Research scientist, State Key Laboratory for Environmental Aquatic Chemistry

(SKLEAC), Research Center for Eco-Environment of Chinese Academy of Sciences, Beijing, China, 1992-1999  
Supervised an environmental analytical lab; Studied the global transportation of phosphorus; Developed environmental sampling and analysis methods for small labs; Analyzed environmental water, air and soil samples

Visiting scholar, Department of Ecology and Ecotoxicology, Lund University, Lund, Sweden  
Developed passive sampling and sample cleanup methods for environmental analysis; Performed analyses for PCBs and organochlorine pesticides for environmental samples; Commercialized passive sampling device

## INDUSTRIAL EXPERIENCE

MITKEM Corporation, Warwick, RI, 1999-2000  
Processed and analyzed environmental samples by using EPA methods and customer requested methods

**HONOR** Distinguished young graduate leader (Graduate School, China National Nuclear Corporation (CNNC), 1990)

## PUBLICATIONS

Wang, Yizhong; Liu, Ji-ang; Hu, Chun and Tang, Hongxiao. **Analysis of organic contaminants in the water of Baiyangdian lake.** *Huanjing Huaxue* (J. Environ. Chem., in Chinese) **1995**, 14(5), 448-452

Wang, Yizhong; Liu, Ji-ang; Hu, Chun and Tang, Hongxiao. **Analysis of organic contaminants in downstream of Fu-He River.** Study on water pollutants control for Baiyangdian Lake area: Environmental Characteristics and Management of Land/Water Ecotone; Editor: Zhang, Shen. Science Press, Beijing, 1995, 57-62

Liu, Ji-ang; Wang, Yizhong and Tang, Hongxiao. **Absorption of organic pollutants on the particles of land/inland ecotones in Baiyangdian area.** *Huanjing Kexue* (J. Environ. Sic., in Chinese) **1996**, 17(3), 19-22

Liu, Ji-ang and Hu, Huaizhong. **Extraction Mechanism of Tritium in 30%TBP-HNO<sub>3</sub> System.** *He Huaxue Yu Fangshe Huaxue* (J. Nuclear Chem. & Radio Chem., in Chinese) **1997**, 19(2), 16-21

Liu, Ji-ang; Wang, Wenhua and Wang, Zijian. **Types and contents of persistent pollutants in the sediment samples of the Second Songhua River.** *Zhongguo Huanjing Kexue* **1998**, 18(6), 518-520

Zhu, Xinru; Liu, Ji-ang and Sodergren, Anders. **Occurrence and distribution of organochlorine residues and metals in sediment, water and fish in the catchment area of Lake Baiyangdian, China.** *Toxicological and Environmental Chemistry* **1999**, 68(3-4), 287-296

Shi, Hanchang; Wang, Yingzhe; Han, Yingjian and Liu, Ji-ang. **Effect of supplement of carbon source on anaerobic biological treatment of 2,4,6-TCP.** *Huanjing Kexue* (J. Environ. Sic., in Chinese) **1999**, 20(5), 11-15

Wang, Shuhu; Shi, Xiangyang; Ma, Wanyun; Chen, Dieyan and Liu, Ji-ang. **Determination of benzene homologues in marine sediment by micellar electrokinetic capillary chromatography.** *Fenxi Ceshi Xuebao* **1999**, 18(5), 5-8

Gong, Ai-jun; Ye, Chang-ming; Lei, Zhi-fang and Liu, Ji-ang. **Pre-column derivatization reaction coupled with ultrasonic wave extraction for the trace analysis of atrazine and simazine in soil and crops by liquid chromatography, ultraviolet detection.** *Journal of Liquid Chromatography & Related Technologies* **1999**, 22(16), 2535-2545

Liu, Ji-ang; Cao, Haifeng; Zhuang, Yahui; Kuschik, Peter; Eismann, Frank and Glindemann, Dietmar. **Phosphine in the urban air of Beijing and its possible sources.** *Water, Air, and Soil Pollution* **1999**, 116(3-4), 597-604

Wang, Wenhua; Yu, Zhiyong; Liu, Dingfang; Liu, Ji-ang and Zhang, Baohua. **Analysis of organic substances in water samples from every treatment step in a tap water company.** *Shuichuli Jishu* (Technology for water processing, in Chinese) **1999**, 25(1), 22-26

Wang, Yi; Wang, Zi-jian; Liu, Ji-ang; Ma, Mei and Wang, Chun-xia. **Monitoring toxic organic pollutants in Huaihe River waters using SPE and triolein-SPMD.** *Zhongguo Huanjing Kexue* (Chin. J. Environ. Sic., in Chinese) **2000**, *20*(2), 168-172

Cao, Haifeng; Liu, Ji-ang; Zhuang, Yahui and Glindemann, Dietmar. **Emission sources of atmospheric phosphine and simulation of phosphine formation.** *Science in China, Series B: Chemistry* **2000**, *43*(2), 162-168

Wang, Shu-hu; Shi, Xiang-yang; Ma, Wan-yun; Chen, Die-yan and Liu, Ji-ang. **Determination of benzene, toluene and xylene in marine sediment samples by micellar electrokinetic capillary chromatography.** *Sepu* (Chinese journal of chromatography / Zhongguo hua xue hui) **2000**, *18*(1), 77-79

Han, Sheng-hui; Zhuang, Ya-hui; Liu, Ji-ang and Glindemann, Dietmar. **Phosphorus cycling through phosphine in paddy fields.** *Science of the Total Environment* **2000**, *258*(3), 195-203

Glindemann, Dietmar; Edwards, Marc; Liu, Ji-ang and Kusch, Peter **Phosphine (PH<sub>3</sub>) occurrence in soils, sediments, biogases and in the atmosphere - a review.** *Ecological Engineering*, **2005**, accepted

Petzold, Christopher J.; Price, Jason M.; Stumpf, Chris L.; Ramirez-Arizmendi, Luis E.; Liu, Ji-ang; Crawford, Kenroy; Gilbert, Jared and Kenttämäa, Hilikka I. **Intrinsic Chemical Properties of Nucleobase Radical Cations**, in preparation

Liu, Ji-ang; Huang, Yiqun; Petzold, Christopher; Ramirez-Arizmendi, Luis E.; Perez, James and Kenttämäa, Hilikka I. **A gas-phase study of the reactivity of phenyl radicals toward DNA components**, in preparation

## PRESENTATION

Oral presentation at the 42<sup>nd</sup> American Society for Mass Spectrometry (ASMS) conference at Nashville, TN, May 23-27, 2004

## REFERENCES

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