

- Microfabrication of microfluidic device for whole column detection capillary isoelectric focusing (CIEF).
- Fundamental study of pH gradient formation, stability in natural pH gradient isoelectric focusing (IEF).
- Investigation of CIEF of proteins without carrier ampholytes.
- Development of an axially illuminated laser induced fluorescence (LIF) detection method for whole column detection CIEF system.
- Development of a method to couple solid phase microextraction (SPME) with capillary electrophoresis (CE).

1998-2003 University of Waterloo, Waterloo, Canada

Teacher Assistant

- Conducted HPLC and GC demonstration and marked student's laboratory report for Analytical chemistry course (about 30 students every term).
- Instructed students of general chemistry experiments (about 40 students every term).

1989-1997 Environmental Monitoring Center, Beijing, China

Analytical Chemist

- Development of analytical methods (HPLC, GC, polarography, UV-Vis, and fluorescence) for water and air monitoring.
- Quality assurance on routine monitoring methods.

Education

2003 University of Waterloo, Waterloo, Canada

Ph.D. in Analytical Chemistry

2000 University of Waterloo, Waterloo, Canada

M.Sc. in Analytical Chemistry

1989 Academy of Military Medical Sciences, Beijing, China

M. Med. in Pharmaceutical Analysis

1986 Peking University Health Science Center, Beijing, China

B. Sc. in Medicinal Chemistry

Patents and publications

Patent:

1. United States Patent 2001054554(2001)

Measurement of fluorescence using capillary isoelectric focusing

Inventors: Janusz Pawliszyn, Xing-Zheng Wu, Tiemin Huang.

2. Canadian patent **CA 2657317**

Method and apparatus for precise selection and extraction of a focused component in isoelectric focusing performed in micro-channels.

Inventors Tiemin Huang, Arthur Watson, Jiaqi Wu

3. Canadian patent **CA 2712213**

Method and apparatus to perform limited two dimensional separation of proteins and other biologicals

Inventors: Tiemin Huang, Jiaqi Wu

Book Chapters

1. Jiaqi Wu, Tiemin Huang, Janusz Pawliszyn, Isoelectric Focusing in Capillary Systems, CRC Hand Book of Capillary and Microchip Electrophoresis and Associated Microtechniques. 2008, 563-580.

2. Jiaqi Wu, Xing-Zheng Wu, Tiemin Huang, Janusz Pawliszyn Analysis of Proteins by CE, CIEF, and Microfluidic Devices With Whole-Column-Imaging Detection, Methods in Molecular Biology 2004 (276) 229-252.

3. Jiaqi wu, Tiemin Huang, Capillary Isoelectric Focusing Methods for Charge-based Analysis of Biotech Pharmaceutical Samples, Bioseparation and Bioprocessing: A Handbook, 2007, 735-758.

Papers published in peer-reviewed scientific journals:

1. Jiaqi wu, Tiemin Huang Peak identification in capillary isoelectric focusing using the concept of relative peak position as determined by two isoelectric point markers, Electrophoresis, 2006, 3584-3590.

2. Xing-Zheng Wu, Tiemin Huang, Zhen Liu and Janusz Pawliszyn, Whole-column imaging-detection techniques and their analytical applications TrAC Trends in Analytical Chemistry, 2005 (24), 369-382.

3. Tiemin Huang, Zhen Liu, Janusz Pawliszyn The transitional isoelectric focusing process, Analytical and Bioanalytical Chemistry, 2005 (382), 783-788.

4. Tiemin Huang, Janusz Pawliszyn, Microfabrication of a tapered channel for IEF with thermally generated pH gradient, Electrophoresis, 2002,23, 3504-3510.

5. Tiemin Huang, Peter Ertl, Xing-Zheng Wu, Susan Mikkelsen, Janusz Pawliszyn; Microfabrication of microfluidic cartridge for isoelectric focusing by screen printing, Sensor and Materials, 2002, 14, 141-149.

6. Tiemin Huang, Xing-Zheng Wu, Janusz Pawliszyn, Capillary isoelectric focusing without carrier ampholytes, Analytical Chemistry, 2000, 72, 4758-4761.

7. Tiemin Huang, Janusz Pawliszyn, Axially illuminated fluorescence imaging

detection for capillary isoelectric focusing on Teflon capillary, *Analyst*, 2000, 125, 1231-1233.