

Chun-Wei Wang, Ph.D.

A biophysicist with expertise in biosensor design, immunoassay, and optical platform design

1524 16th St. S. Apt. H, Birmingham, AL, 35205
hviolin@gmail.com; hviolin@uab.edu | (205) 382-2473

EDUCATION

- ◆ **Ph.D. in Physics** 2008~2012
University of Alabama at Birmingham, Birmingham, AL; 3.7 GPA
Dissertation title: *Fiber Optic Sensors for detection of Biomarkers*
Concentration: Biophotonics, Nanobiotechnology, Immunoassay Technology, Biosensor
- ◆ **Master of Science in Physics** 2007~2008
University of Alabama at Birmingham, Birmingham, AL; 3.7 GPA
Thesis title: *Quantitative Protein Detection in Serum Samples Using Fiber-Optic Biosensors*
Concentration: Biophotonics, Immunoassay Technology
- ◆ **Bachelor of Science in Physics** 2000~2004
National Dong Hwa University, Hualian, Taiwan; 3.04 GPA
Concentration: Optics

PROFESSIONAL EXPERIENCE

- ◆ **Biophotonics Laboratory**, University of Alabama at Birmingham, Birmingham, AL. 2007~2012
Research Assistant
 - Conducted dissertation research entitled, “*Fiber optic sensors for detection of biomarkers*”
 - Created a novel HF etching method to easily fabricate combination tapered optical fibers
 - Fabricated the dye-doped-silica nanoparticle and measured sizes using TEM and AFM
 - Designed portable CCD-based Laser detection setup for fiber optic biosensors
 - Wrote MATLAB program to efficiently process mass data analysis and statistical analysis
 - Optimized dye to protein ratio to enhance efficiency of antibodies to fluorescent dyes and nanoparticles conjugation
 - Optimize the efficiency of immobilized antibodies on optical fiber
 - Completed training in Institutional Review Board to operate human subject
 - Modeled 2D and 3D CAD design of the experimental setup using AutoCAD
 - Experience in PCR and RT-PCR for genotyping mice
- ◆ **Workshop**, University of Alabama at Birmingham, Birmingham, AL. 2009~2012
Trainee
 - Completed training to work in the workshop
 - Created a multi-detection and alignment setup to efficiently and precisely operate fiber optic biosensors simultaneously
- ◆ **Fu Chun Shin Machinery Manufacture Co., Ltd. (FCS)**, Tainan, Taiwan. 06/2000~09/2000
Quality Control
 - Uncovered and reported the defects from plastic product and fixed them

PRESENTATIONS

- ◆ **SPIE Photonics West (2010)**
The Moscone Center, San Francisco, CA
 - Oral Presentation: “Quantitative Estimation of IL-6 in Serum/Plasma Samples Using a Rapid and Cost-Effective Fiber-Optic dip-probe.”
- ◆ **SPIE Photonics West (2010)**
The Moscone Center, San Francisco, CA
 - Oral Presentation: “Dissociation constant measurement using combination tapered fiber-optic biosensor (CTFOB) dip-probes.”
- ◆ **Alabama Academy of Science (2009)**
University of West Alabama, Livingston, AL
 - Oral Presentation: “Detection of human interleukin-8 (IL-8) using a combination tapered fiber-optic biosensor probe.”

PUBLICATIONS

- ◆ R. Kapoor and Chun-Wei Wang. "Highly specific detection of interleukin-6 (IL-6) protein using combination tapered fiber-optic biosensor dip-probe." *Biosensors & Bioelectronics* 24(8), 2696-2701 (Feb 10, 2009)
- ◆ Chun Wei Wang, Upender Manne, Vishnu B. Reddy, Denise K. Oelschlager, Venkat R. Katkoori, William E. Grizzle and Rakesh Kapoor. "Development of combination tapered fiber-optic biosensor dip probe for quantitative estimation of interleukin-6 in serum samples." *Journal of Biomedical Optics* 15 (Dec 17, 2010).
- ◆ The previous article also been selected for January 1, 2011, issue for of *Virtual Journal of Biological Physics Research*.
- ◆ Chun-Wei Wang, Rakesh Kapoor. "Dissociation constant measurement using combination tapered fiber-optic biosensor (CTFOB) dip-probes", *Proceedings of SPIE 7559, 75590A* (Feb 24, 2010).
- ◆ Chun-Wei Wang, Upender Manne, Vishnu B. Reddy and Rakesh Kapoor. "Quantitative Estimation of IL-6 in Serum/Plasma Samples Using a Rapid and Cost-Effective Fiber-Optic dip-probe." *Proceedings of SPIE 7559, 75590G* (Feb 24, 2010).
- ◆ Chun-Wei Wang, Rakesh Kapoor. "Highly specific detection of IL-8 protein using combination tapered fiber-optic biosensor dip-probe." *Proceedings of SPIE 7559, 75590V* (Feb 24, 2010).
- ◆ Boris Simmonds, Chun-Wei Wang and Rakesh Kapoor. "Real-time association rate constant measurement using combination tapered fiber-optic biosensor (CTFOB) dip-probes." *Proceedings of SPIE 7559, 75590Q* (Feb 24, 2010).

SKILLS

Computer

- Experienced with **MATLAB 2011** for programing mass data analysis
- Experienced with **AutoCAD 2012** and **Adobe Photoshop CS2** for 2D and 3D CAD design of lab setups
- Mastery of **OriginPro 8.0** and **MS Excel** for data analysis

Language

- Proficient in Mandarin (first language)
- Fluent in reading, writing, and speaking English

AFFILIATIONS & ACCOMPLISHMENTS

- ◆ Awarded **Outstanding Physics Ph.D. Student** within the UAB department of Physics 2012
- ◆ Taiwanese Scholar and Student Association (TSSA) of University of Alabama at Birmingham (UAB), **President** (2009), **Vice President** (2007) and **Member** 2007~present
 - Built and enhanced the relationship between Taiwanese students and scholars
 - Directed new students and scholars to adapt to new environment
 - Participated international events to introduce Taiwan culture to the world
- ◆ Society of Photo-Optical Instrumentation Engineers (SPIE), **Member** 2009~2010
 - Gave two academic presentations
- ◆ Alabama Academy of Science (AAS), **Member** 2009~2010
 - Gave an academic presentation
- ◆ World Year of Physics (WYP), **Volunteer Assistant** 09/2005
- ◆ Hualian Symphony Orchestra, **Principal of 2nd Violin** 2003~2004
 - Participated two performances
- ◆ String Orchestra Exhibition held by String Club of National Dong Hwa University (NDHU) and Tzu-Chi University, **Event Coordinator** 05/2002
 - Represented NDHU to coordinate the cooperation performance
- ◆ String Club of NDHU, **Conductor and President** (2001-2002) 09/2000~06/2004
 - Awarded the champion in the club evaluation 2002
 - Enhanced the relationship with the community by planning charity performances
 - Raised the funding for the string club
 - Developed and assessed the lesson plans for all level of members

REFERENCES

Will be furnished upon request