Lizhong Zhang

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EDUCATION

Master of Engineering in Electronic Information September 2021 - June 2024
Working on Biomedical Engineering Program, Shenzhen International Graduate School
Tsinghua University GPA: 3.80/4

Bachelor of Science in Electronical Information Science and Technology September 2016 - June 2020
College of Electronic Science & Engineering
Jilin University (National Key University, 211 & 985 Projects) GPA: 3.30/4

RESEARCH EXPERIENCE

Ultra-precise weak measurement-based interfacial biosensors June 2022 - December 2022
Principal Proponent and Finisher

- An ultra-precise interfacial biosensing solution based on weak measurement.
- High performance sensor on a common glass 'chip'.
- Improves sensor stability using self-referencing and pixel point averaging methods.
- Enables label-free detection of biomolecules with an IgG detection limit of 2.71 ng/mL.

Ultra-sensitive refractive index sensor with surface plasmon resonance and weak value amplification April 2022 - May 2023
Responsible for the principal completion of the experiments and part of the theoretical simulation work

- A surface plasmon resonance (SPR) sensor with enhanced sensitivity is proposed based on weak value amplification. With principles of weak value amplification, a phase compensator is used to modulate the coupling strength and enhance the refractive index sensitivity of the system.
- This sensor illustrates a high sensitivity of 4.737×104 nm/RIU along with a resolution of 6.333× 10-8 RIU on a simple Au-coated prism-coupled SPR structure.
- This sensor is utilized to detect IgG with a limit of detection of 5.3 ng/mL.

SARS-COV-2 Spike Protein Precise Detection based on weak measurement-based interfacial biosensor
June 2023 - August 2023
Principal Proponent and Finisher

- Detection

RESEARCH PUBLICATION

Zhang, L., Huang, Q., Zhang, X., Zeng, Z., Zhang, H., Guan, T., ... & He, Y. (2023). *Ultra-precise weak measurement-based interfacial biosensors.* **Talanta**, 257, 124217. May 2023

Zhou, C., **Zhang, L.**, Xu, Y., et al (2023). *Ultra-sensitive refractive index sensor with surface plasmon resonance and weak value amplification.* **Optics Express** (Co-first Author) **In peer review**

SKILLS AND INTERESTS

Interests Biomedical Photonics, Nanobiophotonics, Nanoscopy, Molecular Interaction Analysis
Software MATLAB, Labview, COMSOL, Solidworks
Skills Programming Languages: Python/ C
Hands-on Experimental Ablity including:

- Construction of discrete structure and cage structure optical system
- Molecular Biology Experiments in the Wet Lab

ACHIEVEMENTS

Tsinghua University Shenzhen International Graduate School 16th Annual Academic New Talent Nomination
(One of 11 out of 5290 masters and PhDs) *Spring 2023*

Oral Presentation of the 1st Medical and Health Engineering Cup Graduate Student Academic Forum
(One of 15 out of 63 selected) *Winter 2022*

Jilin University Third Class Scholarship *2019 - 2020*

College Students' Innovative Training Plan Program (Evaluated as National project)
Name: High-precision RF frequency measurement system based on excited Brillouin scattering *2018-2019*

Second Prize of Jilin Provincial Undergraduate Mathematical Contest on Modeling *Summer 2019*

Provincial First Prize of China Undergraduate Mathematical Contest on Modeling *Fall 2018*

DECLARATION

I hereby declare that all the details furnished above are true to the best of my knowledge and belief.