LIN,YUCHEN

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EDUCATION

The Hong Kong University of Science and Technology (HKUST) *September 2019 - Present*
Undergraduate *CGA:4.073/4.300*
Major in Computer Science and additional majors in Physics and Mathematics (**triple major**)
Relavent Coursework: Advanced Quantum Mechanics, Thermodynamics and Statistical Physics, Electricity and Megnetism, Computational Methods in Physics, Methods of Experimental Physics, Partial Differential Equations, Linear and Abstract Algebra, Object-Oriented Programming and Data Structure, Design and Analysis of Algorithms.

Swiss Federal Institute of Technology in Zürich (ETH Zürich) *2022 Spring*
Semester Exchange Student *GPA:5.8/6.0*
Department of Physics
Relavent Coursework: Optics, Quantum information and algorithms.

RESEARCH INTEREST

My research interest lies in ultrafast time-resolved spectroscopy and using pump-probe techniques to study properties of quantum materials.

PUBLICATIONS

[1] "Coherent control and generation of tunable narrowband terahertz radiation from air-plasma filament driven by two-color pulse sequence", Xiaoyue Zhou[1] and **Yuchen Lin**[1], Fu Deng, Jingdi Zhang, arXiv:2212.03160.

RESEARCH EXPERIENCE

Terahertz Lab, HKUST (Supervisor: Prof. Jingdi Zhang) *June 2020 - Present*
Undergraduate Research Opportunities Program Participant *Clear Water Bay, Hong Kong*

1. Femtosecond laser pulse induced air-plasma filament for generating THz radiation

- Collaborated with a PhD student to develop a FDTD numerical model simulating the far-field propagation of the terahertz radiation generated from the two-color induced air-plasma.
- An unconventional phase that emerges in the chirped ultra-fast pulse with its connection to the Gouy phase in real space was discovered. The work is currently in preparation for publication.
- Participated in the initial construction of the Terahertz lab and involved in the process of optical system design, alignment and implementation.

2. Tunable narrow-band Terahertz (THz) generation from two-color laser induced air-plasma

- Implemented the table-top optical system generating tunable narrow-band terahertz radiation from two-color laser induced air-plasma by applying chirped-pulse beating method in collaboration with a PhD student. Numerical calculations were also performed to validate the experimental result.
- We provided a new approach to generating the CEP controllable tunable narrowband THz radiation by using two-color plasma mixing scheme.

HONORS AND AWARDS

HKSAR Government Scholarship Award (top 2%), *HKSAR Government* *2020-2023*

Dean's list (top 10%), *School of Engineering, HKUST* *All active semesters*

The 17th Epsilon Fund Award, *Department of Mathematics, HKUST* *May 2022*

Lee Hysan Foundation Exchange Scholarship, *Lee Hysan Foundation* *April 2022*

SKILLS

Language: Mandarin (Native), English (TOEFL 110), Japanese (JLPT N1)
Programming Language: C++, Python, Matlab, LaTeX

[1]The authors contributed equally to this work