

# Curriculum Vitae

## Ho-Chun Lin

Department of Electrical and Computer Engineering (ECE), University of Southern California (USC)  
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### EDUCATION

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- **University of Southern California, Los Angeles, California, United States** *Aug./2019 - Present*
  - Doctor of Science in Electrical Engineering
    - **Advisor** : [Dr. Chia Wei \(Wade\) Hsu](#)
- **National Taiwan University, Taipei, Taiwan** *Sept./2015 - Jun./2017*
  - Master of Science in Physics
- **National Chiao Tung University, Hsinchu, Taiwan** *Sept./2011 - Jun./2015*
  - Bachelor of Science in Electrophysics

### RESEARCH EXPERIENCE

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- **Hsu Group ([link](#)), ECE, USC**
  - **Advisor** : **Dr. Chia Wei (Wade) Hsu** ([cwhsu@usc.edu](mailto:cwhsu@usc.edu)) *Aug./2019 - present*
    - Project I : Scattering matrix for complex optical systems
    - Implementing a multi-response solver for two-dimensional Maxwell's equations with finite difference.
    - Reformulating the computational problem and developing algorithms to compute only the needed information in scattering problems.
    - Benchmark tests of the proposed and existing methods for solving the scattering matrix.
    - Implementing different types of perfectly matched layer to deal with outgoing boundary.
    - Performing and optimizing the parabolic metasurface.
    - Extending the two-dimensional scalar Fisher-Lee relations to three-dimensional vectorial formalism.
    - Project II : Reflectionless discrete perfectly matched layer
    - Supervising undergraduate student Zhuoyang Yu in his undergraduate project.
    - Implementing multiple discrete perfectly matched layers in the scattering matrix calculations.
    - Optimizing a couple terms to pursue high performance in multiple discrete perfectly matched layer.

### CONFERENCE PRESENTATION

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- **2021 Frontiers in Optics (FiO); Laser Science (LS)** *Virtual, Nov./2021*
  - **Topic** : [Ultra-Fast Scattering Matrix Solver for Disordered Media](#)
- **2022 CLEO** *San Jose, CA, USA May./2022*
  - **Topic** : [Ultra-Fast Scattering Matrix Solver for Disordered Media](#)

### POSTER PRESENTATION

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- **10th Ming Hsieh ECE Department's Annual Research Festival** *Nov./2019*
  - **Topic**: Efficient single-shot computation of the entire scattering matrix for complex optical systems
- **11th Ming Hsieh ECE Department's Annual Research Festival** *Oct./2021*
  - **Topic** : Schur-complement-based scattering matrix computation for complex media

## HONORS AND AWARDS

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- **USC Taiwan Global Fellowship** *Aug./2019*
  - Awarded to the promising PhD students in academic research
- **Dean's Award** *Jun./2017*
  - Awarded to the top 10 % graduate students outstanding in academic research
- **Presidential Award (4 times)** *Sept./2011 - Jun./2015*
  - Awarded to the top 5% of the students in terms of final GPA for that semester
- **Chau-Ting Chang Summer Research Scholarship** *Aug./2014*
  - Awarded to the top 10 % of summer-research students outstanding in academic presentation
- **Hsiao-Yuan Li Scholarship** *Oct./2013*
  - Awarded to top 5 % of outstanding students in the Electrodynamics course

## PUBLICATIONS

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- [1] Yung-Chang Lin, Chao-Hui Yeh, **Ho-Chun Lin**, Ming-Deng Siao, Zheng Liu, Hideaki Nakajima, Toshiya Okazaki, Mei-Yin Chou, Kazu Suenaga, and Po-Wen Chiu, *Stable 1T tungsten disulfide monolayer and its junctions : growth and atomic structures*, ACS Nano, **12**, 12080 (2018).
- [2] Chao-Hui Yeh, Hsiang-Chieh Chen, **Ho-Chun Lin**, Yung-Chang Lin, Mei-Yin Chou, Zheng-Yong Liang, Kazu Suenaga, and Po-Wen Chiu, *Ultrafast monolayer WS<sub>2</sub> hybrid phototransistors with high gain*, ACS Nano, **13**, 3269 (2019).
- [3] Chun-Hao Chu, **Ho-Chun Lin**, Chao-Hui Yeh, Zheng-Yong Liang, Mei-Yin Chou, and Po-Wen Chiu, *End-bonded Metal Contacts on WSe<sub>2</sub> Field-Effect Transistors*, ACS Nano, **13**, 8146 (2019).
- [4] Mamoon Safadi, Ohad Lib, **Ho-Chun Lin**, Chia Wei Hsu, Arthur Goetschy, and Yaron Bromberg, *Coherent Backscattering of Entangled Photon Pairs*, arXiv: 2203.09650 (2022)
- [5] **Ho-Chun Lin**, Zeyu Wang, and Chia Wei Hsu, *Fast multi-source nanophotonic simulations using augmented partial factorization optics using Schur complement*, arXiv: 2205.07887 (2022)

## MENTORING

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- **Undergraduate student Zhuoyang Yu** *July/2020 - present*
  - Senior research project in USC-Tsinghua Program
- **High school student Jiahaun (Henry) Zheng** *June/2021 - July/2021*
  - Summer research project in 2021 SHINE Program

## SOFTWARE

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- [1] Chia Wei Hsu, **Ho-Chun Lin**, and Zeyu Wang. [MESTL.m](#)