CHIH-CHIAO HUNG

chih-chiao.hung@rike.jp phillipandx@gmail.com
Taiwan/Tokyo, JP
Google Scholar
Research Interest: Quantum information science, Superconducting quantum circuits, Quantum microwave amplifier
Skills:

Python | Microwave Simulation | Cleanroom Fabrication | Dilution Refrigerator | COMSOL | Matlab

EDUCATION

University of Maryland, College Park

Aug. 2016 – Aug. 2022 MD,USA

- Ph.D in Physics, supervised by Kevin D. Osborn

National Taiwan University

Sep. 2011 – Jun. 2015 Taipei, Taiwan

- B.S. in Phyiscs, supervised by Ying-Cheng Chen

RESEARCH EXPERIENCE

Postdoctoral

Nov. 2022 – Present RIKEN, Wako, JP

Team leader: Yasunobu Nakamura

- Studying high kinetic inductance nanowire material (NbTiN)

Experimental Graduate Research Assistant

Jan. 2017 – 2022 Laboratory of Physical Science, MD, US

Team leader: Kevin Osborn

- Studied quantum defects in superconductors

Experimental Research Assistant

Aug. 2014 – Mar. 2016 Academia Sinica, Taipei, Taiwan

Team leader: Ying-Cheng Chen

- Built magneto-optical trap for single photon storage and studied high efficiency optical memory in ultracold atoms

PUBLICATIONS

- **Chih-Chiao Hung**, Hiroki Kutsuma, Chung Wai Sandbo Chang, Arjan Ferdinand van Loo, Yasunobu Nakamura. "Broadband Kinetic-Inductance Parametric Amplifiers with Impedance Engineering." arXiv:2504.17145
- CW Chang, Arjan F Van Loo, **Chih-Chiao Hung**, Yu Zhou, Christian Gnandt, Shuhei Tamate, Yasunobu Nakamura. "Josephson traveling-wave parametric amplifier based on low-intrinsic-loss coplanar lumped-element waveguide." arXiv:2503.07559
- **Chih-Chiao Hung**, Tim Kohler, Kevin D Osborn. "Quantum defects from single surface exhibit strong mutual interactions." Phys. Rev. Applied 21, 044021 (2024)
- Liuqi Yu, Shlomi Matityahu, Yaniv J Rosen, **Chih-Chiao Hung**, Andrii Maksymov, Alexander L Burin, Moshe Schechter, Kevin D Osborn. "Evidence for weakly and strongly interacting two-level systems in amorphous silicon." Sci Rep 12, 16960,2022
- **Chih-Chiao Hung**, Liuqi Yu, Neda Foroozani, Stefan Fritz, Dagmar Gerthsen, Kevin D Osborn. "Probing hundreds of individual quantum defects in polycrystalline and amorphous alumina." Phys. Rev. Applied 17 (3), 034025, 2022
- N. Foroozani, C. Hobbs, **Chih-Chiao Hung**, and *et. al.* "Development of transmon qubits solely from optical lithography on 300 mm wafers." Quantum Science and Technology, 4(2), 025012 (2019).
- Ya-Fen Hsiao, Pin-Ju Tsai, Hung-Shiue Chen, Sheng-Xiang Lin, **Chih-Chiao Hung**, Chih-Hsi Lee, Yi-Hsin Chen, Yong-Fan Chen, A Yu Ite, Ying-Cheng Chen. "Highly efficient coherent optical memory based on electromagnetically induced transparency." Physical review letters, 120(18), 183602 (2018).

REWARDS

Monroe H. Martin Graduate Research Fellowship from UMD Department of Physics

Oct. 2021

PRESENTATIONS

Invited talk: "Probing hundreds of individual quantum defects in polycrystalline and amorphous alumina" Session M41.00004, March Meeting 2022 at Chicago