Yongxin Lyu

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Google Scholar ORCID GitHub

Education

Ph.D., Materials Science and Engineering June 2021 – Present
University of New South Wales, Sydney

M.Phil., Applied Physics Sep 2017 – May 2020
The Hong Kong Polytechnic University, Hong Kong SAR
GPA: 4.0/4.0

B.Sc. (Hons), Engineering Physics Sep 2013 – May 2017
The Hong Kong Polytechnic University, Hong Kong SAR
GPA: 3.73/4.0

Research Interests

- 2D perovskite solar cells
- First principles simulation
- Making Academic Memes

Research Experience

Ph.D. Researcher June 2021 - Present
Prof. Tom Wu's Group
School of Materials Science and Engineering, University of New South Wales

- Atomic scale simulation of 2D perovskites
- Machine learning, high throughput DFT

M.Phil. Researcher Sep 2017 – June 2021
Prof. Jianhua Hao's Group
Department of Applied Physics, The Hong Kong Polytechnic University

- First principles simulation of the luminescence mechanism of lanthanide dopant in 2D transition metal dichalcogenides.
- Molecular dynamics simulations of the growth mechanism of black phosphorus in pulsed laser deposition under different laser influence.

Publications

1. Yongxin Lyu, Zehan Wu, Weng Fu Io, and Jianhua Hao*, "Observation and theoretical analysis of near-infrared luminescence from CVD grown lanthanide Er doped monolayer MoS_2 triangles", ***Appl. Phys. Lett***, 2019, 115, 153105.

2. Zehan Wu, Yongxin Lyu, Yi Zhang, Ran Ding, Beining Zheng, Zhibin Yang, Shu Ping Lau, Xianhui Chen*, and Jianhua Hao*, "Large-scale growth of few-layer two-dimensional black phosphorus", ***Nat. Mater.***, 2021, 20 (9), 1203-1209.
3. Ran Ding, Yongxin Lyu, Zehan Wu, Feng Guo, Weng Fu Io, Sin-Yi Pang, Yuqian Zhao, Jianfeng Mao, Man-Chung Wong, Jianhua Hao*, "Effective piezo-phototronic enhancement of flexible photodetectors based on 2D hybrid perovskite ferroelectric single-crystalline thin-films", ***Adv. Mater***., 2021, 33, 2101263.

Outreach Activities

Fantastic perovskites and where to find them
Speaker at Pint of Science Australia May 2023

Awards and Honors

UNSW Women in Maths and Science Champions Program 2023
Faculty of Science, University of New South Wales Feb 2023 – Jan 2024

- Selected as one of 20 PhD students from Faculty of science to participate in an exclusive program designed to promote and support women in STEM fields.
- Engaged in a series of workshops, seminars, and networking events to develop leadership skills and enhance professional development.
- Organized and contributed to outreach efforts to promote STEM education and encourage diversity in the field.

Third Place in 2022 APAC HPC-AI Competition
HPC-AI Advisory Council, NSCC Singapore, NCI Australia March – Nov 2022

Australian Government Research Training Program (RTP) Scholarship
Faculty of Science, University of New South Wales June 2021 – Dec 2024

Dean's Honours List 2016
Faculty of Applied Sciences and Textiles, The Hong Kong Polytechnic University

References

Prof. Tom Wu
School of Materials Science and Engineering
University of New South Wales
(02) 9385 6559, tom.wu@unsw.edu.au

Prof. Jianhua Hao
Department of Applied Physics
The Hong Kong Polytechnic University
(852) 2766 4098, jh.hao@polyu.edu.hk

Skills

- Proficiency in simulation software such as VASP, Quantum Espresso, Gaussian, LAMMPS
- Proficiency in programming languages such as Python, Bash
- Familiar with simulation result analysis tools such as numpy, pandas, matplotlib, rdkit, pymatgen, scikit-learn
- Experience with high-performance computing (HPC) and command line environment

Mentoring experience

Graduate Mentor, Personalised English Language Enhancement Program

Faculty of Arts, Design and Architecture, University of New South Wales. 2022 - 2023

- Assisted students in improving their English language skills by providing support during lectures and tutorials.
- Developed communication and interpersonal skills through collaborative peer mentoring with students from diverse cultural and linguistic backgrounds.
- Received positive feedback from students and faculty for providing valuable support and enhancing the learning experience.