Pingting Zhang

Tel: 15010708109 **Email :** pingtingzhang@mail.nwpu.edu.cn

EDUCATION

Institution	Major	Degree	Supervisor	Year
Northwestern Polytechnical University (985)	Material Characterization	Research Assistant		05/2023 - 08/2024
Northwestern Polytechnical University (985)	Micro-/Nano-Devices	M.S.	Prof. Cao Guan	09/2020 - 04/2023
Beijing University of Chemical Technology (211)	Polymer Materials and Engineering	B.Eng.	Prof.Hongyang Ma	09/2015 - 06/2019

PUBLICATIONS AND PATENTS

- XY Liu, **PT Zhang**, FQ Huang, C Guan* et al.. High intrinsic phase stability of ultrathin 2M WS_2. [J]. ***Nat. Commun.***, 2024, 15:1263. (co-first authors, XY Liu and C Guan are supervisors)

(I am responsible for experiment design and operations, all tests, data analysis, illustration drawing, and the entire submission and revision process of the paper)

- XY Liu, JP Chen, C Guan, **PT Zhang,** NT Yang. A preparation method and application of single-layer MoS_2 and WS_2. CN116657246A [p]. 2023-08-29.
- C Guan, **PT Zhang**, XY Liu, JP Chen. In-situ multi-field analysis and testing device, method and application of on-chip microelectrochemical cel. CN114384142A [p]. 2022-04-22.
- XY Liu, JP Chen, C Guan, **PT Zhang.** Nanomaterial single crystal stress field coupling electrochemical testing device and method. CN114354726A [p]. 2022-04-15.

SKILLS

- Equipment: CVD, Plasma, Optical microscope, Glove box, Lithography equipment, Evaporation equipment, Electrochemical workstation.
- Technology: 3D printing, clean room micro-/nano- device fabrication technology (micro-transfer, lithography, evaporation, electronic packaging).
- Characterization: (In-situ) Raman, (In-situ) electrochemistry, (In-situ) Electrochemical Raman, PL, TEM, SEM, XRD, AFM, FTIR, UV-Vis, DSC, TGA.
- Softwares: Modeling softwares (Autodesk Inventor, 3Dmax, CAD, Solidworks), PS, C++, Jade, GMS, Diamond, Origin, Endnote, Office.
- Language: Mandarin Chinese and English (CET-4 and CET-6, IELTS-6)

SCHOLARSHIPS/HONOURS

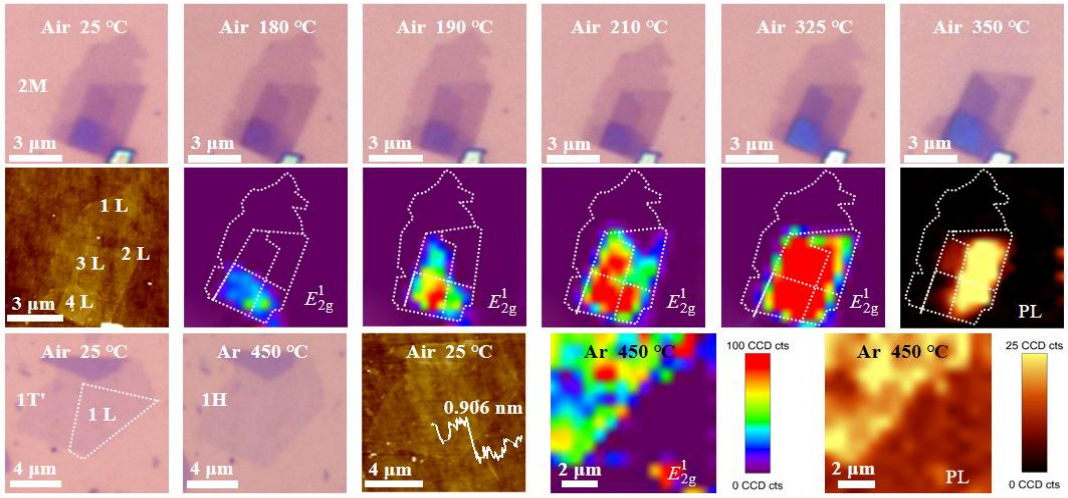
- National Encouragement Scholarship (GPA ranked top 6%)
- University-level Scholarship (3 times, NWPU)
- Outstanding Student (2 times, BUCT)
- University-level Scholarship (4 times, BUCT)

RESEARCH EXPERIENCES

✧ High Intrinsic Phase Stability of Ultrathin 2M WS_2

- **Research Focus**: Prepared high-quality WS_2 single crystals and explored the influence of physical factors (oxygen, temperature, laser intensity, substrate, etc.) on the stability of layered 2M WS_2, and explored the mechanism via TEM, AFM, In-situ Raman, PL, XRD and theoretical simulations.

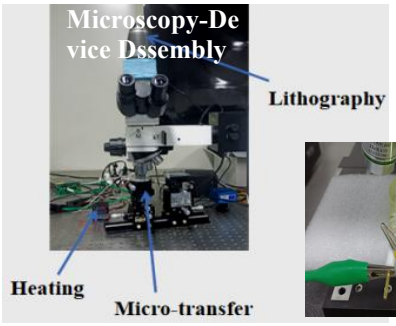
- **Core Skills:** Proficient in the operation of CVD (growth raw materials), AFM (material roughness, layer thickness), Raman/in-situ variable temperature Raman (phase, crystal structure), TEM, XRD and other instruments, data analysis, principle mastery and softwares such as diamond, jade, and GMS.



✧ In-situ Multi-Field Testing Cell and Microscopy-Device Dssembly to Dssemble Microdevices

- Independently developed and manufactured a platform for modular microdevice assembly and in-situ testing of single-crystal samples, utilizing 3D printing technology for electronic packaging.

- Designed and constructed an integrated microdevice fabrication platform based on an optical microscope, enabling photolithography, heating, and material transfer processes in one system.

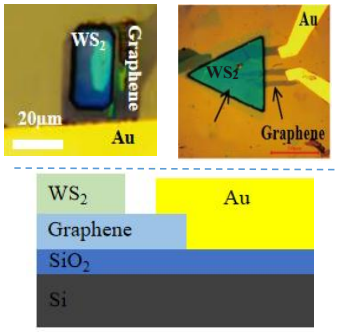


In-situ Electrochemical Raman

✧ Energy Storage Mechanism Study of Layered 2M WS_2 (Microdevices)

- **Research Focus**: Designed micro-batteries, involving the selection of various photoresists, microcircuit design, and transfer techniques. Explored mechanisms through in-situ electrochemical Raman and in-situ electrochemical/optical microscopy.

- **Core Skills:** Expertise in evaluating the properties of various photoresists, fabricating masks, and preparing microelectrodes, including photolithography parameters, structural design, deposition parameters, and material selection. Proficient in in-situ characterization of micro/nano devices (AFM, Raman, electrical, and electrochemical testing).



WS_2 micro battery

- As the first cohort of students under my supervisor, I have demonstrated the capability to independently establish and set up laboratory facilities.

- In the stage of research assistant, I mainly served as test characterization, SOP writing, instrument maintenance, among which I also mastered the operation of instruments such as four probe tester, ellipsometer, vacuum evaporation, AFM, FTIR, UV-Vis and other instruments.