

Yu Zhang

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RESEARCH INTERESTS

Experimental Condensed Matter Physics

ACADEMIC QUALIFICATIONS

Sep. 2012 – Jun. 2016

B.S. in Physics, Fudan University

Overall GPA: 3.67 /4.0 Ranking: 12/114

Jul. 2014 – Nov. 2014

Extension Program in University of California Berkeley

GPA: 4.0/4.0

RESEARCH EXPERIENCE

Jun. 2015 – **Tension Sensor Based On Black Phosphorus**

Present

- Reviewed papers on strain engineering in two-dimensional materials
- Developed a device to bend the substrate in a controlled manner to exert strain on the nano-device onside.
- Fabricated many black phosphorus devices ,and used the method of angle-resolved Raman spectrum to identify their crystal axis
- Explored the electrical properties of black phosphorus under different strain roughly

Jan. 2015 – **Properties of Two Dimensional Materials under High Pressure**

Present

- Reviewed the literature on Diamond anvil cell (DAC) – a standard method to produce high pressure
- Designed a fiber Raman system for the DAC to make *in situ* Raman spectrum and fluorescence signal measurement.
- Helped in testing the transportation properties of several bucked and layered materials under ultrahigh pressure and ultralow temperature

May. 2015 - **Development of a system to measure angle-resolved spectrum**

Jul. 2015

- Established the a whole set of programs including the control program of Newport rotation stage to rotate the halfwave plate (LabVIEW), data collecting program by spectrograph (C based script) and data analysis program (MATLAB)
- Realized the function of measuring the relation between the Raman spectrum and the direction of incidental beam's polarization
- Used the system to measure the angle dependent Raman of silicon, graphite and black phosphorus. The result of BP is slightly different from the theoretical prediction.

Sep. 2014 - **Laboratory experiences in University of California, Berkeley**

Dec. 2014

- Learned the techniques of DAQ and LabVIEW programming and accomplished the design of a virtual phase-locked amplifier
- Learned the theories and operations of AFM
- Learned to exfoliate graphene and practiced some elementary techniques of nanofabrication

Jun. 2014 - **Laboratory experiences in Fudan University**

Aug. 2014

- Investigated the theory and establishment of Raman spectrum, as well as the calibrating

techniques and maintenance of optical systems

- Being in charge of setting up a new Raman spectrum in the laboratory of prof. Xiu.
Purchased all the instruments and setup the shielding curtain around the optical table

TEACHING EXPERIENCES

Jun. 2012 – **Teaching Assistant in Shanghai Kong Jiang Senior High School**

Sep. 2013 Coached high school students weekly for Olympic Physics Competition

Jun. 2013– **Academic Minister in Students' Federation of Physics Department in Fudan University**

Sep. 2014 Organized speeches and seminars, collected lab academic resources and provided the guidance of participating in researches for junior students

AWARDS

2013,2014 Second Class Scholarship

2012 Freshman Scholarship

2013,2014 Honored Student Scholarship

2013 Second in China Undergraduate Physics Tournament

REFERENCES

Yuanbo Zhang, Professor

Physics Department, Fudan University

Email: zhyb@fudan.edu.cn,

faculty page: <http://www.physics.fudan.edu.cn/tps/people/ybzhang/>

Feng Wang, Associate Professor

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Faxian Xiu, Professor

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