Yu Zhang

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RESEARCH INTERESTS

Experimental Condensed Matter Physics

PROFILE

- An enthusiastic undergraduate student majoring in Physics from Fudan University (5th best in Physics in China).
- Gained considerably plenty of fundamental knowledge in physics and handling experimental problems through laboratory works (platform's building, programming for automation and data processing).
- Took courses for solid state physics and apply these knowledge in different projects in labs.
- Strong interest in Experimental Physics.

ACADEMIC QUALIFICATIONS

Sep. 2012 – Present **B.S. in Physics, Fudan University**
Overall GPA: 3.67 /4.0 Ranking: 12/114

Jun. 2014 – Nov. 2014 **Extension Program in University of California Berkeley**
GPA: 4.0/4.0

RESEARCH EXPERIENCES

Jul. 2014 - Aug. 2014 **Laboratory experiences in Fudan University**

- Systemically 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

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

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

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

- 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 – Present **Development of a system to measure angle-resolved spectrum**

- 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.

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

- Reviewed papers on strain engineering in two-dimensional materials
- Developed a device to band 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

TEACHING EXPERIENCES

Jun. 2012 – Sep. 2013 **Teaching Assistant in Shanghai Kong Jiang Senior High School**
Coached high school students weekly for Olympic Physics Competition

Jun. 2013– Sep. 2014 **Academic Minister in Students' Federation of Physics Department in Fudan University**
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
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