

# Yu Zhang

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## RESEARCH INTERESTS

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Experimental Condensed Matter Physics

## PROFILE

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- An enthusiastic undergraduate student majoring in Physics from Fudan University (5<sup>th</sup> 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

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Sep. 2012 – Jun. 2016

**B.S. in Physics, Fudan University**

Overall GPA: 3.67 /4.0      Ranking: 11/114

Jul. 2014 – Nov. 2014

**Extension Program in University of California Berkeley**

GPA: 4.0/4.0

## RESEARCH EXPERIENCE

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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.

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- 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

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## 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

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## AWARDS

- 2013,2014 Second Class Scholarship  
2012 Freshman Scholarship  
2013,2014 Honored Student Scholarship  
2013 Second in China Undergraduate Physics Tournament

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## REFERENCES

Yuanbo Zhang, Professor  
Physics Department, Fudan University  
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faculty page: <http://www.physics.fudan.edu.cn/tps/people/ybzhang/>

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