

# Yuan Cao | Curriculum Vitae

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China

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## Personal Information

**Birth Date:** Apr 02 1996

**Sex:** Male

**Major:** Condense Matter Physics

## Education

**University of Science and Technology of China(USTC)**

**Hefei**

*B.Sc, Senior year*

*2010–Now*

## Academic Performance

**Overall GPA:** 4.06/4.3

**Core courses GPA:** 4.24/4.3

**Rank:**

- 1/40 in Special Class for Gifted Young
- 1/27 in Jici Yan Special Class for Physics
- 2/54 in students of Applied Physics

## Standard Tests

**GRE General Test:** 161(Verbal) + 170(Quantitative) + 4.5(Analytical Writing)

**TOEFL:** 29(Reading) + 25(Listening) + 26(Speaking) + 30(Writing) = 110

**IETLS:** 8.0(Listening) + 9.0(Reading) + 6.5(Writing) + 6.0(Speaking) = 7.5(Overall)

**GRE Chemistry Subject Test:** 910 (97% percentage)

**GRE Physics Subject Test:** 990 (94% percentage)

## Computer Skills

- C/C++/Java
- Perl/Python/PHP
- MATLAB, Labview
- L<sup>A</sup>T<sub>E</sub>X
- Simple web design

## Publications

- *Formation of Hexagonal Pattern of Ferrofluid in Magnetic Field*, Journal of Magnetism and Magnetic Materials (1<sup>st</sup> author, accepted on Nov 18, 2013)

## Honors

### Scholarships

- 2010 Outstanding Freshmen's Scholarship
- 2011 National Scholarship

◦ 2012 National Scholarship

◦ 2013 Guo Moruo Scholarship (Highest honor for a USTC student)

## Research Experience

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In University of Science and Technology of China.....

### Group of Prof. Zeng

*Changgan Zeng's group*

*Mar 2012–Now*

Joined the group of Prof. Zeng as undergraduate. Learning a lot about the frontier of graphene and manganese oxide research.

### Fabrication of simple graphene device

*Project*

*Oct-Dec, 2012*

This is a class project led by me and finished with four other students. In this work we successfully fabricate some simple graphene-based devices such as FETs and photodiodes, with limited lab equipments provided by Department of physics experiment education in USTC.

### Numerical simulation of ferrofluid topology in magnetic field

*Under the supervision of Prof. Zejun Ding*

*Mar 2013–Now*

This work is a continuation of a project in Computing Physics class by Prof. Ding. The purpose is to use finite element method to compute the formation of patterns in ferrofluid under magnetic field. A paper on this work has been accepted by Journal of Magnetism and Magnetic Materials.

### Fabrication of super-capacitor and circuits using photoreduction of graphene oxide

*Under the supervision of Prof. Aidi Zhao*

*Sep 2013–Now*

This project is funded by National Innovation Fund. The purpose is to print super-capacitor, batteries and electronic circuit based on photoreduced graphene oxide.

Visit and Exchange Programs.....

### Research Experience for Undergraduates(REU) Program

**Ann Arbor, Michigan, US**

*Shawn McKee's group*

*Jun–Aug, 2012*

Managing networking for US-ATLAS (Computation grid for ATLAS detector in LHC of CERN), developing alerting system for the network. Part of the work was later integrated into a new version of perfSONAR-PS network monitoring system.

### Summer program in Oxford University

**Oxford, UK**

*Yulin Chen's group*

*Jul–Sep, 2013*

Two months' work experience in Diamond synchrotron facility beamline. Developing control, data analysis and data visualization software for beamline. Participated in several ARPES(Angle-Resolved Photoemission Spectroscopy) experiments together with Dr. Chen's group.

## Competitions

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- ACM International Collegiate Programming Contest, Regional. 3×Silver + 1×Bronze medal
- Robogame competition of USTC. 3<sup>rd</sup> place

## Research Interest

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- Graphene and similar 2-D electronic systems
- Nanotechnology and nanomaterials
- Topological insulator

## Interests besides physics

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- Electronics
- Chemistry
- Computer programming