

Curriculum Vitae

Huacheng Ye

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Education

- University of Science and Technology of China** **Hefei, Anhui, P.R.C.**
Bachelor of Science (Applied Physics) Sep. 2012—July 2016
GPA: 3.49/4.3
- University of Pennsylvania** **Philadelphia, PA, USA**
Master of Science in Engineering (Nanotechnology) Aug. 2016—May 2018
GPA: 3.81/4.0
Thesis: Label-Free Biosensor Based on Functionalized Graphene FET
Advisor: A.T. Charlie Johnson
- University of Notre Dame** **Notre Dame, IN, USA**
Doctor of Philosophy (Electrical Engineering) Aug. 2018—Present

Research Experiences

**Manipulation of Electronic Structures on Defective Oxide Semiconductor
Nanosheets and Their Application in Photocatalysis** Dec. 2014—May 2016
Advisor: Prof. Yujie Xiong Department of Chemistry, USTC
Project supported by Natural Science Foundation of China (NSFC)

- Synthesize semiconductor nanosheets with well-controlled surface defects
- Investigate the catalytic activity in photo-driven organic reaction and the reaction mechanism
- Test methods: GC-MS, SEM, TEM, XRD, SAED, HRTEM, XPS, EELS, ESR

Graphene-based Multiplexing Biosensor for Lyme Disease Detection

Advisor: Prof. A.T. Charlie Johnson Department of Physics, UPenn

- Perform high quality graphene growth by low pressure chemical vapor deposition.
- Fabricate graphene field-effect transistors (GFET) and functionalize them with single-chain variable fragment (scFv)
- Test the functionalized GFETs' response to different concentrations of antigen
- Test methods: Raman spectroscopy, AFM

Novel BEOL Thin-Film Transistor

Advisor: Prof. Suman Datta

Department of Electrical Engineering, University of Notre Dame

- Fabricate high-performance amorphous-oxide-semiconductor thin-film transistor (AOS TFT) at low temperature.
- Explore its application prospect in 3D stacking.

Work Experiences

- Graphene Frontiers** **Philadelphia, PA, USA**
Semiconductor Engineer May 2017- Aug. 2017
- University of Pennsylvania** **Philadelphia, PA, USA**
Teaching Assistant Sep. 2017- Dec. 2017

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Publication

- [1] Zhang, Ning, Xiyu Li, Huacheng Ye, Shuangming Chen, Huanxin Ju, Daobin Liu, Yue Lin et al. "Oxide Defect Engineering Enables to Couple Solar Energy into Oxygen Activation." *Journal of the American Chemical Society* 138, no. 28 (2016): 8928-8935.
- [2] Gao, Zhaoli, Han Xia, Jonathan Zauberman, Maurizio Tomaiuolo, Jinglei Ping, Qicheng Zhang, Pedro Ducos et al. "Detection of Sub-fM DNA with Target Recycling and Self-Assembly Amplification on Graphene Field Effect Biosensors." *Nano letters* (2018).

Skills

- Programming Language: C, Python
- Software: OriginPro, Matlab, Mathematica, Cadence
- Technical Skills: SEM, AFM, CVD, E-beam lithography, Microfabrication