



# SIYU YANG (Sidney)

Ph.D. of The Hong Kong University of Science and Technology

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香港科技大學  
THE HONG KONG  
UNIVERSITY OF SCIENCE  
AND TECHNOLOGY

## EDUCATION

- Sep. 2019 - Jul. 2023 (expected)**

Ph.D. in Advanced Materials of The Hong Kong University of Science and Technology (HKUST)

**Research topic:** Advanced Materials, Individualized Interdisciplinary Programs, New Material Design, Biological Testing, and Nano-Manufacturing, etc.

- Sep. 2015 – Jul. 2019**

B.Sc. in Applied Chemistry of Northwest A&F University (NWAUFU)

**Research topic:** Organic total synthesis and natural product.

## Profile

Since 2016, I have been the leader of a national scientific research project for three years, during which time gained a basic understanding of scientific thinking. To broaden my research scope, I chose interdisciplinary research projects for the majority of my Ph.D. projects. These highly collaborative Ph.D. projects allowed me to excel at interdisciplinary study, technique practice, and teamwork. **I am skilled at combining academic theory and practice with creative ability and enthusiasm for applying technology to actual production.** With my enthusiastic, cheerful and friendly personality, as well as my leadership and communication skills, I served in the Student Union at two universities for 6 years, devoting appropriate attention to all responsibilities. Throughout my Ph.D. studies, I also worked as a teaching assistant in a variety of undergraduate courses. When the COVID-19 pandemic was raging around the world, I volunteered at Customs for the Covid-19 PCR test. The nucleic acid detection chips and test materials I helped design have been used in a large number of tests internationally. I am also skilled in the operation of a variety of scientific instruments.

## SKILLS

**Languages:** English, Mandarin, Cantonese.

**Office software:** Microsoft Office, Adobe Photoshop, FinalCut Pro, Pages, Keynote, Numbers.

**Professional software:** OriginLab (data analysis), Chemical Office (chemical drawing), AutoCAD (graphic illustration), Illustrator (graphic illustration), Solidwork (3D drawing), Python basics, etc.

**Research and analysis instrument skills:**

Skilled in the use of Scanning Electron Microscopy (SEM), Polymerase Chain Reaction (PCR), Fourier Transform Infrared Spectroscopy (FTIR), Nuclear Magnetic Resonance (NMR), Thermodynamic Analysis (TGA, DTA, DSC), X-ray Photoelectron Spectroscopy (XPS), X-ray Diffraction (XRD), etc.

## PUBLICATIONS

**Publications:**

- Lyophilized Ready-to-Use Mix for the Real-Time Polymerase Chain Reaction Diagnosis. **Siyu Yang** and Weijia Wen. *ACS Applied Bio Materials*, **2021**, 4 (5), 4354-4360.
- Highly Enantioselective Tandem Michael Addition of Tryptamine-Derived Oxindoles to Alkynones: Concise Synthesis of Strychnos Alkaloids. Weigang He, Jiadong Hu, Pengyan Wang, Le Chen, Kai Ji, **Siyu Yang**, Yin Li, Zhilong Xie, and Weiqing Xie. *Angew Chem Int Ed Engl*, **2018**, 57 (14): 3806-3809.
- National invention patent: *A real-time PCR detection solid-state reagent and its preparation method.* (202110353270.0) Weijia Wen, Siyu Yang.

## RESEARCH EXPERIENCE

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*Sep. 2019 – present*

### **Ph.D. program in Advanced Materials at HKUST**

- Modify materials by adjusting formulas and changing chemical compositions.
- Optimize bio-test materials to realize more outstanding performance and efficiency.
- Design microfluidic chips to integrate with the material and manufacture them by photolithography, etching, and CNC.
- Develop an all-in-one system of detection material and detection carrier. These topics are all highly interdisciplinary projects.

### **Personal Honor:**

From 2019 to 2022, I was awarded of the HKUST full scholarship four times, the highest level of postgraduate scholarship in Hong Kong.

*Sep. 2018 – Sep. 2019*

### **University Science and Technology Innovation Project “Asymmetric total synthesis of 6-demethoxyspirotryprostatin A”**

- Conducted synthetic route verification, synthesis experiments, and product characterization.
- Asymmetric total synthesis of the antifungal drug 6-demethoxyspirotryprostatin A was achieved, which was confirmed by chromatography and nuclear magnetic resonance to have 99% enantiomeric excess.

*Jul. 2017 - Sep. 2018*

### **Project Leader of the National Undergraduate Science and Technology Innovation Project “The First Asymmetric Total Synthesis of (-)-Herbertenolide”**

- Complete control over the project plan.
- Responsible for the design and verification of synthesis routes, product characterization, and data reporting.
- Asymmetric total synthesis of the anti-phytopathogenic fungal drug (-)-Herbertenolide was realized for the first time, based on our original methodology, with 99% enantiomeric excess.

### **Personal Honor:**

- Won first-class scholarships 1 time and 3 times for second-class scholarships at NWAUFU.
- Won the outstanding B.Sc. graduates at NWAUFU, and “NWAUFU One-hundred Outstanding Graduation Thesis”.

## INTERNSHIP EXPERIENCE

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*Jun. 2018*

### **Haibin Pharmaceutical Co. Ltd., Xinxiang, Henan Province**

- Participated in the synthesis of meropenem intermediates.
- Translated laboratory results into actual production.
- Learned production facilities design principles.

*Jul. 2018*

### **Taibai Distillery, Baoji City, Shaanxi Province**

- Worked in the wine cellar, brewing, fermentation, and packaging rooms.
- Learned about the brewing process of wine from a chemistry perspective.

## CAMPUS EXPERIENCE

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*2021-present*

### **Vice-president of the First Graduate student and Alumni Association at HKUST**

- In charge of the liaising with alumni from various fields and offering career advice to graduate students.

*Jun. 2017 – Jun. 2018*

### **President of the Student Union at NWAUFU**

- Held large-scale scientific and cultural-related activities on or off-campus.
- Led the daily work of the departments of the Student Union.