

Pengfei Hu

Curriculum Vitae

hupengfei@westlake.edu.cn

Professional Experience

Current Appointment: Westlake University
School of Science, Department of Chemistry
600 Dunyu Road, Xihu District
Hangzhou, Zhejiang Province, 310012, China

Assistant Professor of Chemistry, April 2021 – present

Education and Work Experience

Sep 2019 – Mar 2021 Postdoc Fellow
Advisor: Professor Phil S. Baran
The Scripps Research Institute, La Jolla, California

Aug 2014 – Aug 2019 Ph.D. in Chemistry
Advisor: Professor Scott A. Snyder
The University of Chicago, Chicago, Illinois
The Scripps Research Institute, Jupiter, Florida

Aug 2011 – Jun 2014 M.S. in Organic Chemistry
Advisor: Professor Xiaofeng Tong
East China University of Science and Technology, Shanghai

Sep 2007 – Jun 2011 B.E. in Applied Chemistry
Advisor: Professor Meixin Zhao
East China University of Science and Technology, Shanghai

Research Experiences

Postdoc Associate, The Scripps Research Institute

- Developed an intermolecular electrochemical reductive coupling between unactivated ketones and olefins, which were considered highly challenging due to the unmatched electronic effect.

Ph.D. in Organic Chemistry, The University of Chicago

- Designed and completed the first enantiospecific total synthesis of (–)-presilphiperfolan-8-ol, featuring a highly strained trans-5-5 fused ring system. Key to the success is the development of a tandem Heck reaction to construct cyclopentane rings with a common 1,3-*trans* stereochemical relationship;

- Designed and completed total syntheses of six conidiogenone family natural products by strategically exploiting the unique reactivity and selectivity enabled by quaternary centers, which were typically considered only as a grand challenge.
- Developed a Pd-catalyzed cyclization, C–O bond formation cascade, which provides a simple synthetic solution to the botrydial family natural products.

Master of Science Research, East China University of Science and Technology

- Developed a phosphine-catalyzed addition/cycloaddition cascade to the stereoselective synthesis polycyclic compounds.
- Developed a [4+2] cycloaddition reaction to the enantioselective synthesis tetrahydropyridines via a new push-pull dienamine intermediate.

Undergraduate Research, East China University of Science and Technology

- Participated in the development of the first [3+2] cycloaddition reaction of α -isocyanoesters and isatins.

Awards

- Hewitt Foundation Fellowship for Medical Research (2020)
- Chinese Government Award for Outstanding Self-financed Students Abroad (2020)
- Elizabeth R. Norton Prize for Excellence in Research in Chemistry (2019)
- Bristol-Myers Squibb Graduate Fellowship in Synthetic Organic Chemistry (2018)
- William Rainey Harper Dissertation Fellowship (one of UChicago's highest honors) (2018)
- Morris Selig Kharasch Lecture Graduate Fellowship (2018)
- Chancellor Siwei Cheng's Award, ECUST (one of ECUST's highest honors) (2014)
- National Scholarship for Outstanding Graduate Students of China (2013)
- First Prize in the Annual Research Symposium, ECUST (2013)
- Outstanding Student in the First National Summer School on Chirality (2012)
- East China University of Science and Technology scholarship (2011)

Publications

1. **Pengfei Hu**, Byron Peters, Christian A. Malapit, Julien C. Vantourout, Pan Wang, Jinjun Li, Lucas Mele, Pierre-Georges Echeverria, Shelley D. Minter, Phil S. Baran. Electroreductive Olefin Ketone Coupling. *J. Am. Chem. Soc.* **2020**, *142*, 20979.
2. Hyung Min Chi, Charles Cole, **Pengfei Hu**, Cooper A. Taylor, Scott A. Snyder. Total synthesis of Spiroviolene and Spirograterpene A: a Structural Reassignment with Biosynthetic Implications. *Chem. Sci.* **2020**, *11*, 10939.
3. **Pengfei Hu**, Hyung Min Chi, Kenneth C. DeBacker, Xu Gong, Jonathan H. Keim, Ian Tingyung Hsu, Scott A. Snyder. Quaternary Center-Guided Synthesis: Concise Preparations of Complex Polycyclic Terpenes. *Nature* **2019**, *569*, 703.
4. Heng Yi, **Pengfei Hu**, Scott A. Snyder. Development and Elucidation of a Pd-based Cyclization/Oxygenation Sequence for Natural Product Synthesis. *Angew. Chem. Int. Ed.* **2020**, *59*, 2674.
5. **Pengfei Hu**, Scott A. Snyder. Enantiospecific Total Synthesis of the Highly Strained (–)-

- Presilphiperfolan-8-ol via a Pd-Catalyzed Tandem Cyclization. *J. Am. Chem. Soc.* **2017**, *139*, 5007.
6. Yiting Gu, **Pengfei Hu**, Chunjie Ni, Xiaofeng Tong. Phosphine-Catalyzed Addition/Cycloaddition Domino Reactions of β' -Acetoxy Allenolate: Highly Stereoselective Access to 2-Oxabicyclo[3.3.1]nonane and Cyclopenta[a]pyrrolizine. *J. Am. Chem. Soc.* **2015**, *137*, 6400.
 7. Yiting Gu, Falin Li, **Pengfei Hu**, Daohua Liao, Xiaofeng Tong. Tertiary Amine-Catalyzed (4 + 2) Annulations of δ -Acetoxy Allenolates: Synthesis of Multisubstituted 4*H*-Pyran and 4*H*-Chromene. *Org. Lett.* **2015**, *17*, 1106.
 8. **Pengfei Hu**, Jian Hu, Jiajun Jiao, Xiaofeng Tong. Amine-Promoted Asymmetric (4 + 2) Annulations for the Enantioselective Synthesis of Tetrahydropyridines: A Traceless and Recoverable Auxiliary Strategy. *Angew. Chem. Int. Ed.* **2013**, *52*, 5319.
 9. Wei Dong, **Pengfei Hu**, Jian Hu, Xiaofeng Tong. Lewis Base-Catalyzed Divergent Isomerizations of 5-Hydroxy-2,3-dienoate. *Tetrahedron Lett.* **2014**, *55*, 1682.

Posters Presentations

1. **Pengfei Hu**, Hyung Min Chi, Kenneth DeBacker, Xu Gong, Jonathan Keim, Ian Tingyung Hsu and Scott A. Snyder. Quaternary Center-Guided Synthesis. *National Organic Symposium*, Bloomington, IN (June 2019).
2. **Pengfei Hu**, Hyung Min Chi, Kenneth DeBacker, Jonathan Keim, Xu Gong, and Scott A. Snyder. Quaternary centers as an opportunity for invention in total syntheses of natural products. *Gordon Research Conference Stereochemistry*, Newport, RI (July 2018).
3. **Pengfei Hu**, Scott A. Snyder. Enantiospecific synthesis of Highly Strained (–)-Presilphiperfolan-8-ol via a Pd-catalyzed Tandem Cyclization. *National Organic Symposium*, Davis, CA (June 2017).

Oral Presentations

1. **Pengfei Hu**. Quaternary Center-Guided Synthesis. *ACS National Meeting*, San Diego, CA (August 2019)