Mengqiao Li

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Education

- The George Washington University (GWU) *2019.01-present*

Department of Civil and Environmental Engineering
Expected degree: Ph.D. in Environmental Engineering

- University of Science and Technology of China (USTC) *2015.09-2018.11*

Hefei National Laboratory for Physical Sciences at the Microscale (HFNL)
Master of Natural Science in Chemistry

- University of Science and Technology of China (USTC) *2011.09-2015.06*

Special Class for the Gifted Young (SCGY)
Bachelor of Science in Material Physics

Publications & Patents

- **M. Li**, H. Huang, J. Low, C. Gao, R. Long*, Y. Xiong*, Small Methods, 2018, 1800388 DOI: 10.1002/smtd.201800388
- **M. Li**, N. Zhang, R. Long, * W. Ye, C. Wang, and Y. Xiong*, *Small*, **2017,** 13: 1604173
- N. Zhang, X. Li, Y. Liu, R. Long, **M. Li**, S. Chen, Z. Qi, C. Wang, L. Song, J. Jiang, and Y. Xiong*, *Small*, **2017**, 13: 1701354
- Y.J. Xiong, **M. Li**, N. Zhang, R. Long, "Transferring reduced hydrogen from water for the hydrogenation of alkynes to alkenes", *China Patent*, Publication Number CN106905113A (2017)

Research Experience

Graduate Research Assistant

Supervisor: Prof. Yujie Xiong *2015.9-2018.11*

Photocatalytic CO_2 conversion by controlled hierarchical nanostructures

-Independent Research

- Improved carbon dioxide photoreduction efficiency and realized selective formation of methane through engineering surface and interface of hybrid nanostructures
- Explored the impact of carbon dioxide adsorption mode on the photocatalytic pathways

Photocatalytic hydrogen transfer from water for selective alkyne semihydrogenation with the TiO_2-Pd_xPt_{1-x} hybrid structures

-Independent Research

- Realized the efficient utilization of water hydrogen in photocatalytic hydrogen-transfer hydrogenation thus avoiding the use of explosive molecular hydrogen
- Improved the activity and selectivity in water-donating alkyne semihydrogenation by tuning the rates for H_{ad} diffusion and desorption
- Provided a green approach to efficient and selective alkyne semihydrogenation

Catalytic properties of defective $WO_3 \cdot H_2O$ nanosheets for aerobic couplings reactions

- Assisted Dr. Ning Zhang to synthesize $WO_3 \cdot H_2O$ nanosheets with various surface defect concentrations
- Assisted Dr. Ning Zhang in catalytic measurements for aerobic couplings of amines and DRIFTS spectroscopy characterizations

Undergraduate Research Assistant

Advisor: Prof. Yi Xie; Prof. Xiaodong Zhang *2013.9-2015.06*

Photocatalytic water splitting through ultrathin two-dimensional nanosheets of $GaSe_{1-x}S_x$

-Independent Research

- Synthesized a series of $GaSe_{1-x}S_x$ ultrathin nanosheets with different compositions and various thickness
- Optimized the photocatalytic performance of these samples by tuning the rate of photo-excited electron-hole recombination

National Training Program of Innovation and Entrepreneurship for Undergraduates: Photothermal properties of ultrathin two-dimensional nanosheets of transition metal chalcogenides

Teammates: Mengqiao Li (Leader), Zhuohui Li, Piao Ma

- Led a group to explore the photothermal properties of two dimensional nanosheets of transition metal chalcogenides
- Composed a simplified test system, the feasibility of which was confirmed by traditional photothermal agent

Skills

TEM; SEM; Gas Chromatography (GC); Gas Chromatography-Mass Spectrometer (GC-MS); UV-vis Spectroscopy, Electrochemical Station; 3D MAX; Jade

Standardized Examinations

- TOEFL: 106(R: 29; L: 28; S: 20; W: 29)
- GRE: 327(V: 154; Q: 170; AW: 3)

Honors & Awards

National Scholarship for Graduate Students (top 5%) *2017*

First-class Academic Scholarship *2015-2017*

HFNL Fellowship *2015-2017*

Second Prize in The host Contest of USTC *2012.11*

2011 Excellent New Student Award *2011.10*

Activities

- Volunteered to teach needy high school students
- Volunteered for the 2nd Graduate Symposium on Chemistry and Materials Science at USTC
- Captain of the Volunteers Team for Alumni Affairs in 2014