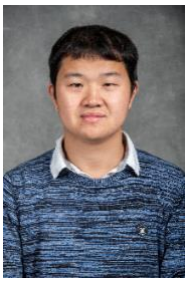
Chemistry Faculty

Xinle Li, Ph.D.



Title: Assistant Professor

Department and specialty

Chemistry (Organic and Porous Materials)

Contact Us
Chemistry Department
515 520-0460

Thomas W. Cole
Science Research Center,

Faculty member since 2020
CAU Address
223 James P. Brawley Drive
Atlanta, Georgia 30314
Email: xli1@cau.edu
Phone: 515-520-0460
Office Location: Thomas W. Cole Jr. Research Center for Science and Technology
Group webpage: https://lxl644.wixsite.com/xinlel

EDUCATION

Post Doctoral Lawrence Berkeley National Laboratory
Ph.D. Iowa State University
B.S. University of Science and Technology of China

BIOGRAPHY

Research

Our research group is focused on the development of crystalline porous materials including metal-organic frameworks (MOFs) and covalent organic frameworks (COFs) and their derived composites for energy and environmental applications such as heterogeneous catalysis, water remediation as well as green synthesis of crystalline porous materials.

Publications (selected)

1. **Li. X**. "sp^2 Carbon-Conjugated Covalent Organic Frameworks: Synthesis, Properties, and Applications". Mater. Chem. Front., 2021. 10.1039

2. **Li. X**.; Yang, C.; Sun, B.; Cai, S.; Chen, Z.; Lv, Y.; Zhang, J.; Liu, Y. "Expeditious Synthesis of Covalent Organic Frameworks: A Review", Journal of Materials Chemistry A, 2020, 8, 16045-16060.

3. **Li, X**.; Cai, S.; Sun, B.; Yang, C.; Zhang, J.; Liu, Y. "Chemically Robust Covalent Organic Frameworks: Progress and Perspective". Matter, 2020, 5, 1507-1540.

4. **Li, X**.; Wang, H.; Chen, H.; Zheng, Q.; Zhang, Q.; Mao, H.; Cai, S.; Sun, B.; Urban, J., Ciston, J.; Chan, E.; Zheng, H.; Zhang, J.; Liu, Y. "Dynamic Covalent Synthesis of Crystalline Porous Graphitic Frameworks". Chem, 2020, 6, 933-944.

5. **Li, X**.; Zhang, C.; Cai, S.; Lei, X.; Hong, F.; Urban, J.; Ciston J.; Chan, E.; Liu, Y. "Facile Transformation of Imine Covalent Organic Frameworks into Ultra-Stable Crystalline Porous Aromatic Frameworks", Nature Communications, 2018, 9, 2998. (Highlighted in Berkeley Lab News, 1 August 2018)

6. Zhang, G.[#]; Ji, Y.[#], **Li, X**.[#] ([#]Co-first author); Wang, X.; Song, M.; Gou, H.; Gao, S.; Jia, X. "Polymer-Covalent Organic Frameworks Composites for Glucose and pH Dual-responsive Insulin Delivery in Mice". Advanced Healthcare Materials, 2020, 9, 2000221.

7. Ma, C.[#]; **Li, X**.[#] ([#]Co-first author); Zhang, J.; Liu, Y.; Urban, J. "Pyrazine-fused Porous Graphitic Frameworks-based Mixed Matrix Membranes for Enhanced Gas Separations". ACS Applied Materials & Interfaces, 2020, 2, 16922-16929.

8. He, Z.; Gong, S.; Cai, S.;* Yan, Y.; Chen, G.; **Li, X**.; *(*Corresponding author); Zheng, S.; Fan, J.; and Zhang, W. "Benzimidazole-Containing Covalent Organic Framework-Based QCM Sensor for Exceptional Detection of CEES". Crystal Growth & Design, 2019, 19, 3543-3550.

9. **Li, X**.; Zhang, B.; Tang, L.; Goh, T.W.; Qi, S.; Volkov, A.; Pei, Y.; Qi, Z.; Tsung, C.-K.; Stanley, L.; Huang, W. "Cooperative Multifunctional Catalysts for Nitrone Synthesis: Platinum Nanoclusters in Amine-Functionalized Metal-Organic Frameworks", Angewandte Chemie International Edition, 2017, 56, 1-6.

10. **Li, X.;** Van Zeeland, R.; Maligal-Ganesh, R.V.; Pei, Y.; Power, G.; Stanley, L.; Huang, W. "Impact of Linker Engineering on the Catalytic Activity of Metal-Organic Frameworks Containing Pd(II)-Bipyridine Complexes", ACS Catalysis, 2016, 6, 6324-6328.

11. **Li, X**.; Goh, T.W.; Li, L.; Xiao, C.; Guo, Z.; Zeng, X.C.; Huang, W. "Controlling Catalytic Properties of Pd Nanoclusters through their Chemical Environment at the Atomic Level Using Isoreticular Metal-Organic Frameworks", ACS Catalysis, 2016, 6, 3461-3468.

12. **Li, X**.; Guo, Z.; Xiao, C.; Goh, T.W.; Tesfagaber, D.; Huang, W. "Tandem Catalysis by Palladium Nanoclusters Encapsulated in Metal-Organic Frameworks". ACS Catalysis, 2014, 4, 3490-3497.

13. **Li, X**.; Zhang, B.; Fang, Y.; Sun, W.; Qi, S.; Qi, Z.; Pei, Y.; Yuan, P.; Huang, W. "Metal-Organic Frameworks Derived Carbons: Applications as Solid Base Catalysts and Support for Pd Nanoparticles in Tandem Catalysis", Chemistry-A European Journal, 2017, 23,4266-4270. (Highlighted in Synfacts 2017; 13(07): 0773)

14. **Li, X**.; Goh, T.W.; Xiao, C.; Stanton, A.L.; Pei, Y.; Jain, P. K; Huang, W. "Synthesis of Monodisperse Palladium Nanoclusters Using Metal-Organic Frameworks as Sacrificial Template", ChemNanoMat, 2016, 2, 810-815. (Very Important Paper). (Highlighted in Chemistry Views, 30 June 2016)

15. **Li, X**.; Zhang, B.; Van Zeeland, R.; Tang, L.; Pei, Y.; Qi, Z.; Goh, T.W.; Stanley, L.; Huang, W. "Unveiling the Effects of Linker Substitution in Suzuki Coupling Reaction with Palladium Nanoparticles in Metal-Organic Frameworks", Catalysis Letters, 2018, 148, 940-945.

16. Van Zeeland, R.[#]; **Li, X**.[#] ([#]Co-first author); Huang, W.; Stanley, L. "MOF-253-Pd(OAc)2: A Recyclable MOF for Transition-Metal Catalysis in Water", RSC Advances, 2016, 6, 56330-56334.

17. Cai, S. #; Sun, B.# (#Co-first author); **Li, X**.; Yan, Y.; Fan, J., Mao, H.; Zhang W.; Liu, Y. "Reversible Interlayer Sliding and Conductivity Changes in Adaptive Tetrathiafulvalene-Based Covalent Organic Frameworks", ACS Applied Materials & Interfaces, 2020, 12, 19054-19061.

18. Cai, S.; He, Z.; **Li, X**.; Zhang, K.; Fan, J., Liu, Y.; Zhang, W. "An unprecedented 2D covalent organic framework with an htb net topology", Chemical Communications, 2019, 55, 13454-13457.

19. Zhang, G.; **Li, X**.; Liao, Q.; Liu, Y.; Xi, K.; Huang, W.; Jia, X. "Water-Dispersible PEG-Curcumin/Covalent Organic Framework Nanocomposites as Smart Carriers for In Vivo Drug Delivery", Nature Communications, 2018, 9, 2785.

20. Pei, Y.[#]; Qi, Z.[#] ([#]Co-first author); **Li, X**.; Maligal-Ganesh, R.V.; Goh, T.W.; Huang, W. "Morphology Inherence from Hollow MOF to Hollow Carbon Polyhedron in Preparing Carbon-Based Electrocatalysts", Journal of Materials Chemistry A, 2017, 5, 6186-6192.

Activities & Awards

–Iowa State University's Research Excellence Award (2016)

–Paul R. Sharp Presentation Award in Inorganic Chemistry at the 50th ACS Midwest Regional Meeting (2015)