Qi Liu

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Education

Wuhan University, Adviser: Prof. Hexiang Deng **Sept 2014 – Jun 2017**
Ph.D of Science in Inorganic Chemistry

Fuzhou University, Adviser: Prof. Yanqiong Sun **Sept 2011 – Jun 2014**
Master of Science in Physical Chemistry

Hubei University, Adviser: Associate Prof. Ganbing Zhang **Sept 2007 – Jun 2011**
Bachelor of Science in Applied Chemistry

Research Experience

Wuhan University, Prof. Hexiang Deng **Jul 2017 – Dec 2018**

Research assistant in Wuhan University, leader of structure construction team

Wuhan University, Prof. Hexiang Deng **May 2016 – Feb 2018**

Graduate Research in the "Inorganic Chemistry Institute"

Topic: *Molecular vise approach to create metal-binding sites in MOFs and detection of biomarker*

Wuhan University, Prof. Hexiang Deng and Prof. Omar Yaghi **Oct 2016 – Apr 2017**

Coordination Research with Prof. Omar Yaghi Group

Topic: *Analysis of construction principles in MTV-ZIFs*

Wuhan University, Prof. Hexiang Deng **Jul 2014 – Oct 2016**

Graduate Research in the "Inorganic Chemistry Institute"

Topic: *Deciphering the spatial arrangement of metals and correlation to reactivity in multivariate metal-organic frameworks*

Fuzhou University, Prof. Yanqiong Sun **Sept 2011 – Jun 2014**

Graduate Research in the "Physical Chemistry Institute"

Topic: *Ln-Cd hetero-metal organic-inorganic hybrid materials and luminescent property*

Hubei University, Associate Prof. Ganbing Zhang **Sept 2010 – Jun 2011**

Undergraduate in the "Physical Chemistry Institute"

Topic: *Theoretical calculation study of poly-phenylene ethers of molecular electronic structure and conductivity*

Awards

National Scholarship for Graduate Students	**2013**	Ministry of Education of China
First Class of Outstanding Academic Scholarship for Graduate Students	**2013**	Fuzhou University
Outstanding Graduate Award	**2014**	Fuzhou University
Outstanding Graduate Graduation Thesis	**2014**	Fuzhou University
Outstanding Graduate Award	**2016**	Wuhan University
Outstanding Academic Scholarship for Graduate Students	**2017**	Wuhan University

Publications

Qi Liu[+], Yinyin Song[+], Yanhang Ma, Yi Zhou, Hengjiang Cong, Chao Wang, Jorryn Wu, Gaoli Hu, Michael O'Keeffe, Hexiang Deng*, Mesoporous cages in chemically robust MOFs created by a large number of vertices with reduced connectivity. *J. Am. Chem. Soc.*, **2018**, DOI: 10.1021/jacs.8b11230. ([+]Co-first author)

Qi Liu, Hengjiang Cong, Hexiang Deng*, Deciphering the spatial arrangement of metals and correlation to reactivity in multivariate metal-organic frameworks. *J. Am. Chem. Soc.*, **2016**, 138, 13822–13825.

Yang Wang[+], **Qi Liu**[+], Qin Zhang, Bosi Peng, Hexiang Deng*, Molecular vise approach to create metal-binding sites in MOFs and detection of biomarker. *Angew. Chem. Int. Ed.*, **2018**, 130, 7238-7243. ([+]Co-first author)

Jinging Yang, Yuebiao Zhang, **Qi Liu**, Christopher A. Trickett, Emrique Gutierrez-Puebla, M. Ángeles Monge, Hengjiang Cong, Abdulrahman Aldossary, Hexiang Deng*, Omar M. Yaghi*, Principles of designing extra-large pore openings and cages in zeolitic imidazolate frameworks, *J. Am. Chem. Soc.*, **2017**, 139, 6448–6455.

Yan-Qiong Sun*, **Qi Liu**, Le-Hui Liu, Ling Ding, Yi-Ping Chen, Two 3D nonlinear optical and luminescent lanthanide-organic frameworks with multidirectional helical intersecting channels, *New J. Chem.*, **2017**, 41, 6736-6741.

Qi Liu, Fang Wan, Li-Xia Qiu, Yan-Qiong Sun*, Yi-Ping Chen, Four 2D Ln–Cd heterometal–organic coordination polymers based on tetranuclear Ln–Cd oxo-cluster with highly selective luminescent sensing of organic molecules and metal cations. *RSC Adv.*, **2014**, 4, 27013-27021.

Yan-Qiong Sun*, **Qi Liu**, Liang-Liang Zhou, Yi-Ping Chen, Ln–Cd heterometal organic–inorganic hybrid materials based on diverse Ln–Cd oxo-cluster chains: syntheses, structures and visible luminescence, *CrystEngComm*, **2014**, 16, 3986-3993.

Qi Liu, Su-Zhi Ge, Jie-Cen Zhong, Yan-Qiong Sun*, Yi-Ping Chen, Two novel 2D lanthanide–cadmium heterometal–organic frameworks based on nanosized heart-like $Ln_6Cd_6O_{12}$ wheel-clusters exhibiting luminescence sensing to the polarization and concentration of cations. *Dalton Trans.*, **2013**, 42, 6314-6317.

Yan-Qiong Sun*, **Qi Liu**, Jie-Cen Zhong, Qun-Feng Pan, Yi-Ping Chen, Unique (3,8)-connected lanthanide arenedisulfonate metal-organic frameworks containing benzimidazole-5,6-dicarboxylic acid co-ligand: syntheses, structures and luminescence, *J. Solid State Chem.*, **2013**, 206, 85-90.

Ning Ma, Cong Lin, Nian Wu, **Qi Liu**, Jia-Le Ma, Wei Meng, Xiao-Shuang Wang, Lu Zhang, Xiaohui Xu, Yifang Zhao, Lin Zhuang, Jun Fan, Junliang Sun*, Ren-Xi Zhuo, Xian-Zheng Zhang*, Stomata-like metal peptide coordination polymer, *J. Mater. Chem. A*, **2017**, 5, 23440-23445.

Su-Zhi Ge, **Qi Liu**, Song Deng, Yan-Qiong Sun*, Yi-Ping Chen, Two new luminescent cadmium thiolato-carboxylates with 2, 2'-bipyridine, *J. Inorg. Organomet. Polym.*, **2013**, 23. 571-578.

Yan-Qiong Sun*, Song Deng, **Qi Liu**, Su-Zhi Ge, Yi-Ping Chen, A green luminescent 1-D helical tubular dipyrazol-bridged cadmium (II) complex: a coordination tube included in a supramolecular tube, *Dalton Trans.*, **2013**, 42, 10503-10509.

Yan-Qiong Sun*, Su-Zhi Ge, **Qi Liu**, Jie-Cen Zhong, Yi-Ping Chen, A novel 3-D chiral bismuth–organic framework with mixed carboxylate, pyridine and thiolate donors exhibiting a semiconductive property, *CrystEngComm*, **2013**, 15, 10188-10192.

Conference Presentations

Oral Presentation, 2017 International Conference on Nanospace Material,
Shanghai Jiaotong University, Shanghai, China, 25-27 Aug **2017**.

Poster Presentation, New Directions in Porous Crystalline Materials Faraday Discussion,
Royal Society, Edinburgh, UK, 5-7 Jun **2017**.

Poster Presentation, The 6th National Conference on Structural Chemistry,
China Chemical Society, Suzhou, China, 22-26 Oct **2012**.

Workshops and Technical Skills

Design, Synthesis and Topological Structure Analysis of Porous Materials,
Speaker: Prof. Michael O'Keeffe and Dr. Charlotte Bonneau,
Fudan University, Shanghai, China, 26-30 May **2014**.

Workshop for the structure determination by powder X-ray diffraction,
Speaker: Prof. Hermann Gies, Prof. Lynne B. MacCusker, Prof. Yingxia Wang and Prof. Junliang Sun,
Peking University, Beijing, China, 1-5 Sep **2014**.

X-ray Diffraction Analysis Technology and Applications,
Speaker: Prof. Jiwu Huang,
Rigaku Corporation, Guangzhou, China, 10-13 Nov, **2014**.

Advanced Workshop on X-ray Crystallography,
Speaker: Dr. Zhenyi Zhang and Dr. Thanh Ha Nguyen,
Bruker Corporation, Shanghai, China, 15-18 Aug, **2017**.

Technical Software:

Good (Shelxtl, Olex2, Mercury, Topos, Systre, 3dt, Crystalmaker, Diamond, APEX2, Adobe Illustrator, Origin, Materials Studio (structure simulation))
Familiar (Jade, Jana, Athena, Artemis, Adobe Photoshop, 3ds Max, MestRenova, ChemDraw)

Technical Skills:

Synthesis of organic compound (reaction under protection, column chromatography, rotary evaporation, NMR),
Synthesis and characterization of crystalline and porous materials (solvent/hydrothermal reaction, activations, supercritical CO_2 drying, gas adsorption, single-crystal X-ray diffraction, powder X-ray diffraction, TGA, IR spectrum, UV-vis spectrum, glass-box, X-ray adsorption spectrum, luminescent spectrum, XPS),
Scientific data collection and analysis, crystalline structure simulation and illustration, paper writing.