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个人自述

我本科受训于南京大学基础学科强化部(注重数学、物理与计算机基础)、博士为厦门大学物理化学背景，**这使得我同时具备实验化学与理论化学两种工具**，在研究上更侧重于原理揭示、实验与数理模型的结合，以及交叉学科工具的引入。我的研究经历围绕可控化学自组装这一大方向，关键词包括：超分子/高分子化学、半导体物理、理论计算与模拟、人工智能数据分析、原位液相透射电镜、晶体学、光谱电化学、纳米化学、手性化学等。以上跨领域关键词往往同时出现于同一研究，体现交叉科学研究方法的应用。

目前已在国际主流期刊杂志上发表论文21篇。其中以第一/共同第一或通讯作者发表论文12篇，包括3篇Nature Communications, Science Advances, Chem. Soc. Rev., JACS, Chem. Sci., Electrochem. Acta., Chem. Commun.等。

我于2021年加入华南理工大学分子科学与工程学院，**成立Emergent Materials and Intelligent TEM (EMIT) Lab，基于物理化学研究思维和交叉科学研究手段探索多尺度组装材料的理性构筑与智能表征。**研究方向主要包括：

1) 可控自组装杂化材料：面向量子与能源应用的新结构设计与精准构筑；

2) 原位透射电镜表征技术：发展原位液相透射电镜与计算机视觉等智能分析技术，揭示界面物理化学本质；

3) 材料化学中的人工智能：研发表征数据自动化分析的行业软件；智能分析与预测组装条件、组装结构及材料性质的关联。

工作经历

2021.08–至今　华南理工大学 分子科学与工程学院 教授、博导

2017.08–2021.05　美国加州大学伯克利分校 材料科学与工程系 博士后
美国劳伦斯伯克利国家实验室 材料部 博士后
合作导师: Haimei Zheng 教授

2016.05–2017.08　美国阿克伦大学高分子科学系 博士后
合作导师: 程正迪(Stephen Z. D. Cheng) 教授(院士)

教育背景

2009.09–2016.05　厦门大学化学系
导师: 田中群 教授(院士), 曹晓宇 教授

2005.09–2009.05　南京大学匡亚明学院理科强化班
导师: 燕红 教授

教学课程

1. Structural characterization of materials (全英课程)
2. Scientific writing and illustration (全英课程)

发表论文

A graphic-enriched online version can be found on my website: Link.

[1] **Y. Wang**,† X. Peng,† A. Abelson, P. Xiao, C. Qian, L. Yu, C. Ophus, P. Ercius, L-W. Wang, M. Law, and H. Zheng*. Dynamic deformability of individual PbSe nanocrystals during superlattice phase transitions.
Sci. Adv., **2019**, 5, eaaw5623 (†Equal contribution)
Highlighted by Molecular Foundry, Lawrence Berkeley National Lab.

[2] H. L. Zhang,† **Y. Wang**,† H. Zhang,† X. Liu,† A. Lee, Q. Huang, F. Wang J. Chao, H. Liu, J. Li, J. Shi, X. Zuo, L. Wang, L. Wang, X. Y. Cao, C. Bustamante, Z. Q. Tian*, and C. H. Fan*. Programming chain-growth co-polymerization of DNA hairpin tiles for in-vitro hierarchical supramolecular organization.
Nat. Commun., **2019**, 10, 1006 (†**Equal contribution**)

[3] **Y. Wang**,† Y. Sun,† P. Shi, X. Lin, P. Zhang, H. Fang, P. Peng, Z. Q. Tian, and X. Cao*. Chaperone-like chiral cages for catalyzing enantioselective supramolecular polymerization.
Chem. Sci., **2019**, 10, 8076 (†Equal contribution)
Selected as Front Cover, Editor's Pick of the Week, and 2019 Chemical Science HOT Article Collection. Highlighted by RSC news as "Coaching catalysis".

[4] **Y. Wang**, X. Peng, A. Abelson, B. Zhang, P. Ercius, L-W. Wang, M. Law, and H. Zheng*. Atomic-resolution in situ observation of the necking phenomenon during oriented attachment of PbSe nanocrystals
Nano Res., **2019**, 12, 2549

[5] **Y. Wang**,† H. X. Fang,† I. Tranca, H. Qu, X. C. Wang, A. J. Markvoort*, Z. Q. Tian, and X. Y. Cao*. Elucidation of the origin of chiral amplification in discrete molecular polyhedra.
Nat. Commun., **2018**, 9, 488 (†Equal contribution)

[6] Z. A. Nan, **Y. Wang***, Z. X. Chen, S. F. Yuan, Z. Q. Tian, and Q. M. Wang*. Catalyzed assembly of hollow silver-sulfide cluster through self-releasable anion template.
Commun. Chem. **2018**, 1, 99. (***Corresponding author**)

[7] H. Qu, **Y. Wang***, Z. H. Li, X. C. Wang, H. X. Fang, Z. Q. Tian, and X. Y. Cao*. Molecular face-rotating cube with emergent chiral and fluorescence properties.
J. Am. Chem. Soc., **2017**, 139, 18142. (***Corresponding author**) (**Cover paper**)

[8] **Y. Wang**, H. X. Fang, W. Zhang, Y. B. Zhuang, Z. Q. Tian, and X. Y. Cao*. Interconversion of molecular face-rotating polyhedra through turning inside out.
Chem. Commun., **2017**, 53, 8956 (**Cover paper**)

[9] **Y. Wang***, Y. B. Sun, X. B. Ding, J. H. Liang, X. Y. Cao, and Z. Q. Tian*. A combined electro- and photo-chemical approach to repeatedly fabricate 2D molecular assemblies.
Electrochim. Acta., **2017**, 246, 823. (***Corresponding author**)

[10] X. C. Wang,† **Y. Wang**,† H. Y. Yang, H. X. Fang, R. X. Chen, Y. B. Sun, N. F. Zheng, K. Tan, X. Lu, Z. Q. Tian, and X. Y. Cao*. Assembled molecular face-rotating polyhedra to transfer chirality from two to three dimensions.
Nat. Commun., **2016**, 7, 12469. (†**Equal contribution**)

[11] **Y. Wang**, H. X. Lin, L. Chen, S. Y. Ding, Z. C. Lei, D. Y. Liu, X. Y. Cao*, H. J. Liang, Y. B. Jiang, and Z. Q. Tian*. What molecular assembly can learn from catalytic chemistry.
Chem. Soc. Rev., **2014**, 43, 399.

[12] **Y. Wang**, H. X. Lin, S. Y. Ding, D. Y. Liu, L. Chen, Z. C. Lei, F. R. Fan, and Z. Q. Tian*. Some thoughts about controllable assembly (I) — From catalysis to catassembly.
Sci. Sin. Chim., **2012**, 4, 525.

[13] J. Jiang, **Y. Wang**, L. Jin, C-H Hsu, S. Zhang, J. Mao, W. Yin, T. Li, B. Ni, Z. Su, J. Huang, C. Wesdemiotis, K. Yue, W. Zhang*, and S. Z. D. Cheng*. Modularly constructed polyhedral oligomeric silsesquioxane-based giant molecules for unconventional nanostructure fabrication. *ACS Appl. Nano Mater.*, **2020**, 10.1021/acsanm.0c00231.

[14] Z. Su, C. Hsu, Z. Gong, X. Feng, J. Huang, R. Zhang, **Y. Wang**, J. Mao, C. Wesdemiotis, T. Li, S. Seifert, W. Zhang, T. Aida, M. Huang*, and S. Z.D. Cheng*. Identification of a Frank–Kasper Z phase from shape amphiphile self-assembly.
Nat. Chem., **2019**, 11, 899.

[15] R. Lu, X. Yan, L. Zhu, L. Yang, H. Qu, X. Wang, M. Luo, **Y. Wang**, R. Chen, X. Wang*, Y. Lan*, J. Pei, W. Weng, H. Xia, and X. Cao*. Unveiling how intramolecular stacking modes of covalently linked dimers dictate photoswitching properties.
Nat. Commun., **2019**, 10, 5480.

[16] Q. Zhang, G. Gao, Y. Shen, X. Peng, J. Shangguan, **Y. Wang**, H. Dong, K. Bustillo, L. Wang, L. Sun, and H. Zheng*. Anomalous shape evolution of Ag2O2 nanocrystals modulated by surface adsorbates during electron beam etching.
Nano Lett., **2019**, 19, 591.

[17] X. X. Peng, A. Abelson, **Y. Wang**, C. Qian, J. Shangguan, Q. Zhang, L. Yu, Z. W. Yin, W. Zheng, K. C. Bustillo, X. Guo, H. G. Liao*, S. G. Sun, M. Law, and H. M. Zheng*. In situ TEM study of the degradation of PbSe nanocrystals in air.
Chem. Mater., **2019**, 31, 190.

[18] X. C. Wang, P. X. Peng, W. Xuan, **Y. Wang**, Y. B. Zhuang, Z. Q. Tian, and X. C. Cao*. Narcissistic chiral self-sorting of molecular face-rotating polyhedra.
Org. Biomol. Chem., **2018**, 16, 34.

[19] Z. W. Lin, J. Sun, Y.B. Zhou, **Y. Wang**, H. Xu, X. Yang, H. Su, H.G. Cui, T. Aida, W. Zhang*, and S. Z.D. Cheng*. A noncrystallization approach toward uniform thylakoids-like 2D “nano-coins” and their grana-like 3D suprastructures.
J. Am. Soc. Chem., **2017**, 139, 5883.

[20] L. Q. Xie, T. Y. Zhang, L. Chen, N. Guo, **Y. Wang**, G. K. Liu, J. R. Wang, J. Z. Zhou, J. W. Yan, Y. X. Zhao*, B. W. Mao*, and Z. Q. Tian. Organic–inorganic interactions of single crystalline organolead halide perovskites studied by Raman spectroscopy.
Phys. Chem. Chem. Phys., **2016**, 18, 18112.

[21] H. X. Lin, L. Chen, D. Y. Liu, Z. C. Lei, **Y. Wang**, X. S. Zheng, B. Ren, Z. X. Xie, Galen D. Stucky*, and Z. Q. Tian*. Constructing two-dimensional nanoparticle arrays on layered materials inspired by atomic epitaxial growth.
J. Am. Soc. Chem., **2015**, 137, 2828.

[22] Y. Liu, Tong Liu, X. Yan, Q. Guo, H. Lei, Z. Huang, R. Zhang, **Y. Wang**, J. Wang, F. Liu, F. Bian, E.W. Meijer, T. Aida, M. Huang*, and Stephen Z.D. Cheng*. Expanding quasiperiodicity in soft matter: Supramolecular decagonal quasicrystals by binary giant molecule blends.
Proc. Natl. Acad. Sci. USA, **2022**, 119, e2115304119.