Curriculum Vitae

PERSONAL

Name: Sheng Zhou (周胜)
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Research Areas

► Gas separations, including CO_2 capture, natural gas purification, hydrocarbon separations
► Membrane-based separation technology
► Metal-organic frameworks and porous materials

Education

Ph.D., Chemical Science, King Abdullah University of Science and Technology (KAUST), 2018/8 to 2022/6
Advisor: Prof. Mohamed Eddaoudi

M.S., Chemical Engineering, South China University of Technology, 2016/9 to 2018/6
Advisor: Prof. Haihui Wang

B.S., Chemistry (Elite Class), South China University of Technology, 2012/9 to 2016/6
Advisor: Prof. Haihui Wang

Professional Experience

Since 2023 Assistant Professor, Thrust of Sustainable Energy and Environment, HKUST (GZ)
2022-2023 Postdoctoral fellow**,** Johns Hopkins University Advisor: Prof. Michael Tsapatsis

Publications:

1. **Sheng Zhou**, Osama Shekhah, Adrian Ramírez, Pengbo Lyu, Edy Abou-Hamad, Jiangtao Jia, Jiantang Li, Prashant M. Bhatt, Zhiyuan Huang, Hao Jiang, Tian Jin, Guillaume Maurin, Jorge Gascon, Mohamed Eddaoudi*, *Asymmetric pore windows in MOF membranes for natural gas valorization*. ***Nature*** 2022, 606, 706-712.
2. **Sheng Zhou**, Osama Shekhah, Jiangtao Jia, Justyna Czaban-Jóźwiak, Prashant M. Bhatt, Adrian Ramírez, Jorge Gascon, Mohamed Eddaoudi*, *Electrochemical synthesis of continuous metal–organic framework membranes for separation of hydrocarbons*. ***Nature Energy*** 2021, 6, 882–891.
3. **Sheng Zhou**, Osama Shekhah, Tian Jin, Jiangtao Jia, Shuvo Jit Datta, Prashant M. Bhatt, Mohamed Eddaoudi*, *A CO_2-recognition metal-organic framework membrane for continuous carbon capture*. ***Chem***, 2023, 9, 1182–1194.
4. **Sheng Zhou**, Yanying Wei, Libo Li, Yifan Duan, Qianqian Hou, Lili Zhang, Liang-Xin Ding, Jian Xue, Haihui Wang*, Jürgen Caro, *Paralyzed membrane: Current-driven synthesis of a metal-organic framework with sharpened propene/propane separation*. ***Science Advances*** 2018, 4, eaau1393.
5. Qianqian Hou, **Sheng Zhou (co-first author)**, Yanying Wei, Jürgen Caro*, Haihui Wang*, *Balancing the Grain Boundary Structure and the Framework Flexibility through Bimetallic Metal–Organic Framework (MOF) Membranes for Gas Separation*. ***J. Am. Chem. Soc***. 2020, 142, 21, 9582–9586.
6. **Sheng Zhou**, Yanying Wei, Liang-Xin Ding, Haihui Wang*, *Self-Sacrificial Template Strategy Coupled with Smart in Situ Seeding for Highly Oriented Metal–Organic Framework Layers: From Films to Membranes*, ***Chem. Mater.*** 2017, 29, 17, 7103–7107.
7. **Sheng Zhou**, Yanying Wei, Libin Zhuang, Liang-Xin Ding, Haihui Wang*, *Introduction of metal precursors by electrodeposition for the in situ growth of metal–organic framework membranes on porous metal substrates*, ***J. Mater. Chem. A.*** 2017, 5, 5, 1948-1951.

8. **Sheng Zhou**, Qianqian Hou, Yanying Wei, Haihui Wang*, Recent progress on the preparation and applications of metal organic framework membranes, ***Chemical Industry and Engineering Progress***, 2019, 38, 467-484.
9. Youdong Cheng, Shuvo Jit Datta, **Sheng Zhou**, Jiangtao Jia, Osama Shekhah, Mohamed Eddaoudi*, *Advances in metal–organic framework-based membranes,* ***Chem. Soc. Rev***., 2022, 51, 8300-8350.
10. Qianqian Hou, Ying Wu, **Sheng Zhou**, Yanying Wei, Jürgen Caro*, Haihui Wang*, *Ultra-Tuning of the Aperture Size in Stiffened ZIF-8_Cm Frameworks with Mixed-Linker Strategy for Enhanced CO_2/CH_4 Separation*, ***Angew. Chem. Int. Ed***, 2019, 58, 1, 327-331.
11. Sharath Kandambeth, Vinayak S Kale, Dong Fan, Jeremy A Bau, Prashant M Bhatt, **Sheng Zhou**, Aleksander Shkurenko, Magnus Rueping, Guillaume Maurin, Osama Shekhah, Mohamed Eddaoudi*, *Unveiling Chemically Robust Bimetallic Squarate-Based Metal–Organic Frameworks for Electrocatalytic Oxygen Evolution Reaction*, ***Advanced Energy Materials***, 2022: 2202964.
12. Jiangtao Jia, Luis Gutiérrez-Arzaluz, Osama Shekhah, Norah Alsadun, Justyna Czaban-Jóźwiak, **Sheng Zhou**, Osman M. Bakr, Omar F. Mohammed*, Mohamed Eddaoudi*, *Access to Highly Efficient Energy Transfer in Metal–Organic Frameworks via Mixed Linkers Approach*. ***J. Am. Chem. Soc***. 2020, 142, 8580–8584.
13. Sharath Kandambeth, Jiangtao Jia, Hao Wu, Vinayak S. Kale, Prakash T. Parvatkar, Justyna Czaban-Jóźwiak, **Sheng Zhou**, Xiangming Xu, Zied Ouled Ameur, Edy Abou-Hamad, Abdul-Hamid Emwas, Osama Shekhah, Husam N. Alshareef*, Mohamed Eddaoudi*, *Covalent Organic Frameworks as Negative Electrodes for High-Performance Asymmetric Supercapacitors*. ***Advanced Energy Materials***, 2020, 10: 2001673.
14. Jiamin Hou, Xilu Hong, **Sheng Zhou**, Yanying Wei, Haihui Wang*, *Solvent-free route for metal–organic framework membranes growth aiming for efficient gas separation*. ***AIChE Journal***, 2019, 65, 2, 712-722.
15. Jiamin Hou, Yanying Wei, **Sheng Zhou**, Yanjie Wang, HaihuiWang*, *Highly efficient H_2/CO_2 separation via an ultrathin metal-organic framework membrane*. ***Chemical Engineering Science***, 2018, 182, 180-188.

Patents:

1. *ELECTRICAL SYNTHESIS OF CONTINUOUS METAL-ORGANIC FRAMEWORK MEMRANES*, **WO 2023/285995 A1**
2. *MIXED LINKER MOF-BASED MEMBRANES FOR GAS SEPARATION,* **PCT/IB2023/053587**
3. *A method for modifying the stainless-steel nets by electrodeposition for the preparation of metal-organic framework membranes*, **CN106669432B** (***Granted)***
4. *A high-performance metal-organic framework membrane and its application in efficient separation of propylene and propane*, **CN107469643B** (***Granted***)
5. *The method for in-situ repairing defects of ZIF-67 film and the prepared film*, **CN109797416B** (***Granted***)
6. *An ultra-thin g-C_3N_4/MOF hybrid film and its preparation method,* **CN107126848B** (***Granted***)
7. *A membrane formation method by using electrodeposited cobalt hydroxide nanosheets,* **CN109772179B** (***Granted***)
8. *A device for domestic direct drinking water purification,* **CN205616688U** (***Granted***)