Curriculum Vitae

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Biographical Sketch

Chia-Her Lin was a student of Chemistry at National Chung Hsing University in Taichung during 1992-1998 for his Bachelor of Science (B.S.) and Master of Science (M.S.) degrees. He joined the Department of Chemistry at National Tsing Hua University in Hsinchu, where he received his Ph.D. degree in 2002 under Prof. Sue-Lein Wang's group. The research field is relative to porous and photo-luminescent metal phosphates.

After graduation, he finished his military duty in 2004. He re-joined Prof. Sue-Lein Wang's group as a postdoctoral scholar. After bottom 2005, he continued his postdoctoral scholar at Michigan State University under Prof. Mercouri G. Kanzatzidis and learned Solid State Chemistry.

In 2006, he was appointed Assistant Professor of Chemistry at Chung Yuan Christian University. In 2010, he was named Associate Professor, and in 2013 promoted to full professor. Professor Lin has educated more than 30 M.S. degrees students, 6 PhD degrees students and 4 postdoctoral fellows. He is the author of more than 238 scientific papers in the fields of inorganic chemistry, metal phosphates, and metal-organic frameworks.

In 2019 August, he joined Department of Chemistry, National Taiwan Normal University.

Education Experience

Ph.D. in Chemistry 1998–2002
Department of Chemistry, National Tsing Hua University
M.S. in Chemistry 1996–1998
Department of Chemistry, National Chung Hsing University
B.S. in Chemistry 1992–1996
Department of Chemistry, National Chung Hsing University

Professional Experience

Post-Doctoral Studies
Department of Chemistry, Michigan State University 2005–2006
Advisor: Prof. Mercouri G. Kanzatzidis
Department of Chemistry, National Tsing Hua University 2004–2005
Advisor: Prof. Sue-Lein Wang
The Commission on Metal Organic Frameworks under the International Zeolite Association (2013~2018)

Research Interests

1. Synthesis and Structural Characterization of New MOFs

The synthesis and characterization of metal-organic frameworks (MOFs) is one of the most rapidly growing areas of inorganic chemical research. Porous MOFs are a new kind of high-crystalline inorganic–organic complexes constructed by assembling metal ions or metal-containing clusters known as secondary building units (SBUs) with multi-dentate organic ligands via coordination bonds

into a three-dimension. These porous materials, undoubtedly, are having great potential for many practical applications, including the field of application of the conventional porous materials, gas storage, separation, and catalytic, mainly using the size and shape of the pore of the porous material.

2. MOFs for Selective Gas Adsorption and Separation (CO_2 capture, H_2 and CH_4 storage)

Adsorptive separation in the industry is very important. Generally, this process uses a porous solid material, such as zeolite, activated carbon, and silica gel as the adsorbent. Efficient, energy-saving, environmentally friendly growing of gas separation process needs and provide tailored structure and surface properties must be adjustable adsorbent developed. Because of the high surface area MOFs, the pore size can be regulated, can function to adjust the characteristics and thermal stability, MOFs is a promising candidate material for adsorption or membrane separation filtration material.

3. MOFs for Enzyme Immobilization

MOFs can act as the platforms for functional application when form composites with other different materials. In recently studies, we demonstrate some new functional applications of MOFs (especially the Al-MOFs) with trypsin-immobilized metal–organic framework as a biocatalyst in proteomics analysis. The use of MOFs as supports is a versatile tool for the stabilization and reusability of immobilized enzymes for functional applications. The pore size, morphology and the surface of MOFs can be efficiently modified to every protein. After detailed investigations of systematic studies of protein immobilized MOF materials reveled the advances were made in activity, stability and reusability experiments. However, the application of designed MOFs in biocatalysis is still in the early stages of the development.

4. MOFs for membrane separation

The flux of Mixed Matrix Membranes (MMMs) with microporous fillers is usually low, however, due to the large mass transfer resistance from the pore size of micropores in the inorganic fillers. In contrast, MMMs that incorporate mesoporous fillers can increase the flux, but their corresponding separation factors would decrease due to the large pore sizes in the fillers. Our study represents an innovation aimed towards the rational design of nanoporous Al-MOFs as potential fillers for membrane applications.

Awards

2014 Outstanding Research Award, Chung Yuan Christian University

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Metrics overview

238
Documents by author

4765
Citations by **3754 documents**

34
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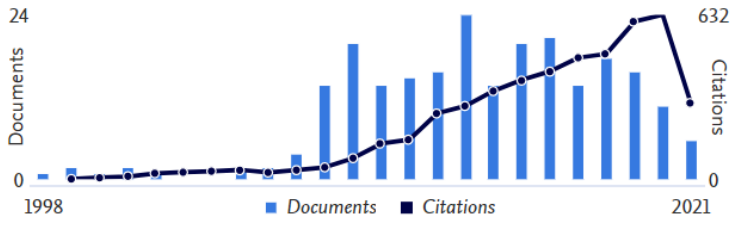
Document & citation trends



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238 Documents Cited by 3754 Documents 1 Preprints New

Selected Publications

(2013~2020; Impact Factor>5)

1. Liang Feng, Sheng-Han Lo, Kui Tan, Bing-Han Li, Shuai Yuan, Yi-Feng Lin, Chia-Her Lin*, Sue-Lein Wang*, Kuang-Lieh Lu*, Hong-Cai Zhou* (2020, Apr). An Encapsulation-Rearrangement Strategy to Integrate Superhydrophobicity into Mesoporous Metal-Organic Frameworks, *Matter* 2, 988–999.
2. Sheng-Han Lo, Liang Feng, Kui Tan, Zhehao Huang, Shuai Yuan, Kun-Yu Wang, Bing-Han Li, Wan-Ling Liu, Gregory S. Day, Songsheng Tao, Chun-Chuen Yang, Tzuoo-Tsair Luo, **Chia-Her Lin***, Sue-Lein Wang*, Simon J. L. Billinge, Kuang-Lieh Lu*, Yves J. Chabal*, Xiaodong Zou and Hong-Cai Zhou* (2020, Jan). Rapid desolvation-triggered domino lattice rearrangement in a metal–organic framework. *Nature Chemistry*, volume 12, pages90–97.
3. Stephen Lirio, Yung-Han Shih, Shu-Ying Hsiao, Jian-Hong Chen, Hsin-Tsung Chen, Wan-Ling Liu,* **Chia-Her Lin**,* Hsi-Ya Huang (2018, Sep). Monitoring the Effect of Different Metal Centers in Metal–Organic Frameworks and Their Adsorption of Aromatic Molecules using Experimental and Simulation Studies. *Chem. Eur. J*. 24(53), pp. 14044-14047.
4. Yu-Tzu Chang, Sheng-Han Lo, **Chia-Her Lin**,* Ling-I Hung,* Sue-Lein Wang* (2018, Aug). Indium Phosphite-Based Porous Solids Exhibiting Organic Sensing and a Facile Route to Superhydrophobicity. *Chem. Eur. J*. 24(48), pp. 12474-12479.
5. Chung-Wei Fu, Stephen Lirio, Yung-Han Shih, Wan-Ling Liu,* **Chia-Her Lin**,* Hsi-Ya Huang (2018, Jul). The Cooperativity of Fe3O4 and Metal-Organic Framework as Multifunctional Nanocomposites for Laser Desorption Ionization Process. *Chem. Eur. J*. 24(38), pp. 9598-9605.
6. Ming-Jhe Sie, **Chia-Her Lin***, Sue-Lein Wang*, Polyamine-Cladded 18-Ring-Channel Gallium Phosphites with High- Capacity Hydrogen Adsorption and Carbon Dioxide Capture. *J. Am. Chem. Soc.*, **2016**, *138*, 6719–6722.
7. Yung-Han Shih, Chien-Ping Fu, Wan-Ling Liu, **Chia-Her Lin***, Hsi-Ya Huang* and Shengqian Ma*, Nanoporous Carbons Derived from Metal-Organic Frameworks as Novel Matrices for Surface-Assisted Laser Desorption/Ionization Mass Spectrometry. *Small*, **2016**, 12, 2057–2066.
8. Wan-Ling Liu, Ni-Shin Yang, Ya-Ting Chen, Stephen Lirio, Cheng-You Wu, **Chia-Her Lin*** and Hsi-Ya Huang*. Lipase supported metal-organic framework bioreactor catalyzes warfarin synthesis. *Chem. Eur. J.*, **2015**, *21*, 115–119.
9. Wan-Ling Liu, Cheng-You Wu, Chien-Yu Chen, Brenda Singco, **Chia-Her Lin***, and Hsi-Ya Huang*. Fast Multipoint Immobilized MOF Bioreactor. *Chem. Eur. J.*, **2014**, *20*, 8923–8928.
10. Chen-Lan Lin, Stephen Lirio, Ya-Ting Chen, **Chia-Her Lin*** and Hsi-Ya Huang*. A novel hybrid metal-organic framework-polymeric monoliths for Solid-Phase Microextraction. *Chem. Eur. J.*, **2014**, *20*, 3317–3321.
11. Hsin-Yau Lin, Hui-Lin Huang, Chih-Yuan Chin, Xianhu Bu, Kwang-Hwa Lii, Li-Hsun Huang, **Chia-Her Lin**, Sue-Lein Wang* (2013). Crystalline Inorganic Frameworks with 56-Ring, 64-Ring and 72-Ring Channels. *Science*, **2013**, *339*, 811–813.
12. Sheng-Han Lo, Ching-Hsuan Chien, Yu-Lun Lai, Chun-Chuen Yang, Jey Jau Lee, Duraisamy Senthil Raja, and **Chia-Her Lin***, "A mesoporous aluminium metal–organic framework with 3 nm open pores", *J. Mater. Chem. A*, **2013**, *1*, 324–329.