Jun Hu

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Profile

- Combining experimental investigation with computational calculation, I endeavor to provide microscopic insights into macroscopic properties. Subsequently, to assist the rational design of novel porous materials, and to explore the applications in environment, such as CO2 capture and conversion, deep-desulfurization of gasoline and diesel, removal heavy metals from water, degradation of antibiotics, and VOC separation.
- More than 120 research papers in international academic journals have been published, and 15 national invention patents have been applied for and authorized.
- As the PI, I have been in charge of five projects supported by the National Natural Science Foundation of China, one 973 project by MOST, and one international collaboration project by 7th Framework of EU, and also some projects by the companies.

Research Field

Surface and Interface of porous materials, Adsorption, Membrane separation, Catalytic degradation

Research results and selected published papers

（Recent five years' publication）

1. Chenhui Wang, Fangyuan Guo, He Li, Jian Xu, Jun Hu*, Honglai Liu, Meihong Wang. A porous ionic polymer bionic carrier in a mixed matrix membrane for facilitating selective CO2permeability. J. Membr. Sci. 2020(598):117677.

2. Zhang, S., Wang, Y., Cao, Z., Xu, J., Jun Hu*, Huang, Y., Cui, C., Liu, H., Wang, H. Simultaneous enhancements of light-harvesting and charge transfer in UiO-67/CdS/rGO composites toward ofloxacin photo-degradation. Chem. Eng. J., 2020, 381: 122771.

3. Wenjie Lv, Kaiqing Zhao, Shihao Ma, Lingkai Kong, Zhihong Dang, Jianqi Chen, Yanhong Zhang, Jun Hu* Process of removing heavy metal ions and solids suspended in microscale intensified by hydrocyclone. Journal of Cleaner Production, 2020, 263: 121533.

4. Kaiqing Zhao, Lingkai Kong, Weiwei Yang, Yuan Huang, He Li, Shihao Ma, Wenjie Lv, Jun Hu*, Hualin Wang and Honglai Liu. Hooped Amino-Group Chains in Porous Organic Polymers for Enhancing Heavy Metal Ion Removal. ACS Appl. Mater. Interfaces, 2019, (11): 44751-44757.

5. Li, H., Guo, F., Jun Hu*, Peng, C., Wang, H., Liu, H., & Li, J. "Induced-Fit Suction" effect: A Booster for Biofuel Storage and Separation. J. Mater. Chem. A., 2019, 7(39): 22353-22358.

6. Li, Y., He, Y., Guo, F., Zhang, S., Liu, Y., Lustig, W. P., Bi, S., Lawrence J. Williams, Jun Hu*, Li, J. NanoPOP: Solution-Processable Fluorescent Porous Organic Polymer for Highly Sensitive, Selective, and Fast Naked Eye Detection of Mercury. ACS Appl. Mater. Interfaces, 2019, 11(30): 27394−27401.

7. Wang, C., Zhang, S., Guo, F., Ge, Y., Wang, Y., Li, H., Jun Hu*, Liu, H. Local Environment Structure in Positively Charged Porous Ionic Polymers for Ultrafast Removal of Sulfonamide Antibiotics. Ind. Eng. Chem. Res., 2019, 58(36): 16629-16635.

8. Xu, T., Zhou, L., He, Y., An, S., Peng, C., Jun Hu*, Liu, H. Covalent Organic Framework with Triazine and Hydroxyl Bifunctional Groups for Efficient Removal of Lead (II) Ions. Ind. Eng. Chem. Res., 2019, 58(42): 19642-19648.

9. Ran Xia, Wenjie Lv, Kaiqing Zhao, Shihao Ma, Jun Hu*, Hualin Wang, Honglai Liu. Catalyst, Emulsion Stabilizer, and Adsorbent: Three Roles in One for Synergistically Enhancing Interfacial Catalytic Oxidative Desulfurization. Langmuir 2019, 35(11): 3963-3971.

10. Fangyuan Guo, Yu Liu, Jun Hu*, Honglai Liu and Ying Hu, Fast screening of porous materials for noble gas adsorption and separation: a classical density functional approach, Phys. Chem. Chem. Phys., 2018, 20, 28193-28204.

11. Lingling Liu, Fangyuan Guo, Jian Xu, Jun Hu*, Hualin Wang, Honglai Liu, Meihong Wang* Adsorption-enhanced oxidative desulfurization by a task-specific pyridinium-based porous ionic polymer. Fuel. 2019, 244: 439-446.

12. Changzheng Cui, Zan Cao, Shenping Zhang, Yaru Hu, Lei Jiang, Shijie Yao, Hui Ye, Yanbo Zhou, Jun Hu*, Kuangfei Lin and Tian-Yang Zhang*, Application of a novel diol-based porous organic polymer to the determination of trace-level tetracyclines in water, Anal. Methods, 2019, 11, 2473–2481.

13. Hengxin Shui, Tian Jin, Jun Hu* and Honglai Liu. In Situ Incorporation Strategy for Bimetallic FeCo-Doped Carbon as Highly Efficient Bifunctional Oxyge Electrocatalysts. Chem Electro Chem. 2018, 5, 1401-1406.

14. Shiming Bi, Yankai Li, Shaoze Zhang, Jun Hu*, Limin Wang, Honglai Liu. A Diketopyrrolopyrrole-based Fluorescent Porous Organic Polymer as Fluoride Sensing Monolithic Device. J. Mater. Chem. C. 2018, 6, 3961-3967.

15. Min Wei, Feng Qian, Wenli Du, Jun Hu*, Meihong Wang, Xiaobo Luo, Minglei Yang. Study on the integration of fluid catalytic cracking unit in refinery with solvent-based carbon capture through process simulation, Fuel, 219 (2018) 364–374.

16. Chenhui Wang, Fangyuan Guo, He Li, Jian Xu, Jun Hu*, Honglai Liu. Porous organic polymer as fillers for fabrication of defect-free PIM-1 based mixed matrix membranes with facilitating CO2-transfer chain, Journal of Membrane Science, 564 (2018) 115–122.

17. Shenping Zhang, Yankai Li, Chunhong Shi, Fangyuan Guo, Congze He, Zan Cao, Jun Hu*, Changzheng Cui*, Honglai Liu. Induced-fit adsorption of diol-based porous organic polymers for tetracycline removal, Chemosphere 212 (2018) 937-945.

18. Fangyuan Guo, Yu Liu*, Jun Hu*, Honglai Liu and Ying Hu, Fast screening of porous materials for noble gas adsorption and separation: a classical density functional approach, Phys. Chem. Chem. Phys., 2018, 20, 28193-28204.

19. Yu Liu, Fangyuan Guo, Jun Hu, Honglai Liu, and Ying Hu, Molecular Transport Through Mixed Matrix Membranes: A Time-Dependent Density Functional Approach, AIChE Journal, 2017, 63(10), 4586-4594.

20. Jiali Huang, Jun Hu * Wenli Du, Honglai Liu, Feng Qianb and Meihong Wang. Ultrafast synthesis of 13X@NaA composites through plasma treatment for highly selective carbon capture, J. Mater. Chem. A, 2017, 5, 18801-18807.

21. Shenping Zhang, Jian Xu, Jun Hu* Changzheng Cui, Honglai Liu, Interfacial Growth of TiO2-rGO Composite by Pickering Emulsion for Photocatalytic Degradation, Langmuir, 2017: 33, 5015−5024.

22. Shiming Bi, Yankai Li, Limin Wang, Jun Hu,* and Honglai Liu, Constructing Diketopyrrolopyrrole-Based Fluorescent Porous Organic Polymer for Chromo Communication via Guest-to-Host Energy Transfer, J. Phys. Chem. C, 2017, 121 (12), 6685–6691.

23. Lu Peng, Fangyuan Guo, Cui Zhang, Jian Xu, Sheng Xu, Changjun Peng, Jun Hu* and Honglai Liu. Maximizing the Density of Active Groups in Porous Poly(ionic liquids) for Efficient Adsorptive Desulfurization. Ind. Eng. Chem. Res. 2017, 56, 4319−4326.

24. Huang Chensheng, Sun Rongjiang, Lu Hao, Yang Qiang, Hu Jun*, Wang Hualin, Liu Honglai. A pilot trial for fast deep desulfurization on MOF-199 by simultaneous adsorption-separation via hydrocyclones. Separation and Purification Technology, 2017, 182: 110-117.

25. Yankai Li, Li Yang, Xiang Zhu, Jun Hu, Honglai Liu Post-synthesis modification of porous organic polymers with amine: a task-specific microenvironment for CO2 capture, Int J Coal Sci Technol 2017, 4(1): 50–59.

26. Tian Jin, Shuhao An, Xuejin Yang, Jun Hu*, Hualin Wang, Honglai Liu, Ziqi Tian, De-en Jiang*, Nada Mehio, Xiang Zhu*, Efficient adsorptive desulfurization by task-spectic porous organic polymers, AIChE J., 2016, 62(5): 1740-1746.

27. Lihuo Zhang, Ni Zhan, Qing Jin, Honglai Liu, Jun Hu*, Impregnation of polyethylenimine in mesoporous multilamellar silica vesicles for CO2 capture: A kinetic study, Ind. Eng. Chem. Res., 2016, 55: 5885-5891.

28. Xiaomin Zhu, Shenping Zhang, Lihuo Zhang, Honglai Liu, Jun Hu*, Interfacial Synthesis of Magnetic PMMA@Fe3O4/ Cu3(BTC)2 Hollow Microspheres through One-Pot Pickering Emulsion and Their Application as Drug Delivery, RSC Adv., 2016: 6, 58511–58515.

29. Xiaowei Liu，Fei Gao，Jian Xu，Lihui Zhou，Honglai Liu，Jun Hu*，Zeolite@ Mesoporous silica-supported-amine hybrids forthe capture of CO2 in the presence of water，Microporous & Mesoporous Mater.，2016，222：113-119.

30. Yanting Xia，Yankai Li，Yuntao Gu，Tian Jin，Qiang Yang，Jun Hu*，Honglai Liu，Hualing Wang，Adsorption desulfurization by hierarchical porous organic polymer of Poly-methylbenzene with metal impregnated，Fuel，2016，170：100-106.

31. Yankai Li, Junji Zhang*, Zijun Bian, Youxin Fu, Fei Liu, Chenhui Wang, Xiang Ma, Jun Hu*, Honglai Liu. The magic of integration: Exploring the construction of dithienylethene-based infinite coordination polymers and their synergistic effect for gaseous ammonia probe applications. Chinese Chemical Letters. 2016, 27, 518–522

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34. Zijun Bian，Jian Xu，Shenping Zhang，Xiaomin Zhu，Honglai Liu，Jun Hu*，Interfacial growth of Metal Organic Framework and graphite oxide composites through Pickering emulsion and their CO2 capture performance in presence of humidity，Langmuir，2015，31（26）：7410-7417。

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