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副主编 npj Clean Water (IF: 12.1)

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研究兴趣

(1) 高分子材料; (2) 分离膜; (3) 分离技术

教育背景

2005.9 - 2010.8	University of Massachusetts, Amherst, (美国麻省大学) 高分子科学 博士	
	指导老师: Thomas Russell 院士, Todd Emrick 教授	
2001.9 - 2004.1	天津大学材料学院, 高分子材料	工学硕士
	指导老师: 常津教授	
1997.9 - 2001.7	天津大学材料学院, 高分子材料	工学本科
	指导老师: 郑俊萍教授	
1998.9 - 2001.7	天津大学管理学院, 技术经济	工学本科
	指导老师: 赵涛教授	

工作经历

2017.1 - 至今	天津工业大学 分离膜与膜过程国家重点实验室	研究员
2013.9 - 2016.12	中科院海岸带研究所	研究员
2014.9 - 2015.4	MIT, 美国麻省理工学院 机械工程系	访问教授
	合作老师: Rohit Karnik 教授	
2012.8 - 2013.8	Yale University, 美国耶鲁大学 化工与环境学院	助理研究员
	合作老师: Menachem Elimelech 院士	
2010.9 - 2012.8	University of North Carolina, Chapel Hill 美国北卡大学教堂山分校	
	合作老师: Leaf Huang 教授	博士后研究员

荣誉奖励

- 国家高层次引进人才（千人计划） 2012
- 山东省“泰山学者海外特聘专家” 2012
- 天津市三八红旗手 2018
- 天津市引进领军创新人才 2019
- 中国膜科技中青年突出贡献专家 2019
- 天津工业大学最美研究生导师 2019
- 天津市工程专业学位优秀指导老师 2021
- 山东省泰山产业领军创新人才 2022

科技获奖（第一负责人）

- 山东省青年科技奖 2015
- 山东省技术创新优秀成果一等奖 2020
- 天津市技术发明二等奖 2021

主持科研及产业化代表性项目（第一负责人）（总经费额度2000余万元）

1. 山东省泰山产业领军人才创新项目，高性能聚砜基嵌段共聚物纳滤膜的产业化制备及应用，2022/10-2023/09，100万元，在研，主持。
2. 山东省海外高层次人才工作站，聚砜基嵌段共聚物分离膜绿色制造技术，2022/01-2024/12，200万元，在研，主持。
3. 天津工业大学-沧州产业研究院，中空纤维纳滤膜的规模化制备及应用，2022/07-2024/06，200万元，在研，主持。
4. 国家自然科学基金委面上项目，三明治“夹心”结构水通道蛋白膜的构建及正渗透脱盐机制研究，2020/01-2023/12，66万元，在研，主持（批准号：21978215）。
5. 天津市自然基金重点项目，水通道蛋白仿生分离膜的制备及应用基础研究 2018/04 -2021/03，20万，结题，主持（批准号：18JCZDJC37100）。
6. 世界知名企业合作项目（日东电工技术研发），下一代高性能分离膜，2020/11-2022/04，75万元，结题，主持（批准号：029323）。
7. 山东省重点研发计划，盐碱地快速脱盐一周年轮作覆盖抑盐生态保育关键技术研究 2017/01-2019/12，300万，结题，主持（批准号：2017CXGCO0310）。
8. 天津市科技发展计划重点平台项目，高性能抗污染正渗透膜的制备及其应用研究

- 2017/10-2018/09, 200万, 结题, 主持 (批准号: 17PTSJYC00060)。
9. 天津工业大学人才引进项目, 先进功能膜材料平台建设
2017/1-2021/12, 800万, 结题, 主持。
10. 国家自然科学基金面上项目, 新型正渗透仿生分离膜的制备及应用基础研究
2015/01-2018/12, 81万元, 结题, 主持 (批准号: 21476249)。
11. 中科院重点培育项目, 海水资源的生态安全高值利用技术
2013/01-2015/12, 120万元, 结题, 主持 (批准号: 355041041)。
12. 中国科技部中小企业创新基金, 超低压大通量纳滤膜的开发与应用
2012/07-2014/07, 50 万元, 结题, 主持 (批准号: 12C26213704009)。
13. 天津工业大学膜重点实验室开放课题重点项目, 疏水疏油纳米纤维膜的表面构建
2015/11-2016/12, 15万, 结题, 主持。
14. 烟台市科技发展计划重点项目, 抗污染膜蒸馏的构建及海水淡化应用
2016/01-2018/12, 50万, 结题, 主持 (批准号: 2015YT06000486)。
15. 山东省重点研发计划, 抗污染正渗透膜的开发及应用
2015/01-2016/12, 25万, 结题, 主持 (批准号: 2014GHY115021)。
16. 山东省泰山产业发展计划, 有机无机杂化膜的产业化制备及应用
2013/01-2015/12, 300万, 结题, 主持。

代表文章 (* 通讯作者)

1. Li, S.L.; Chang, G.; Huang, Y.; Kinooka, K.; Chen, Y.; Fu, W.; Gong, G.* Yoshioka, T.; McKeown, N.*; Hu, Y.*, 2, 2' - Biphenol - based Ultrathin Microporous Nanofilms for Highly Efficient Molecular Sieving Separation, *Angew. Chem. Int. Ed.*, 2022, DOI: 10.1002/anie.202212816.
2. Wang, J.; Li, S.L. *; Guan, Y.; Zhu, C.; Gong, G.; Hu, Y.*, Novel RO membranes fabricated by grafting sulfonamide group: Improving water permeability, fouling resistance and chlorine resistant performance, *Journal of Membrane Science*, 2022, 641, 119919.
3. Nguyen, X. C.; Ly, Q. V.; Nguyen, T. T. H.; Ngo, H. T. T.; Hu, Y.; Zhang, Z.*, Potential application of machine learning for exploring adsorption mechanisms of pharmaceuticals onto biochars. *Chemosphere*, 2022, 287, 132203.
4. Guan, H.; Li, Y.; Gong, G.*; Xu, R.; Hu, Y.*; Tsuru, T., Enhancing dehydration performance of isopropanol for flexible hybrid silica composite membranes with spray-coated active layer on polymers. *Separation and Purification Technology*, 2022, 283, 120230.

5. Zhao, L.; Liu, Z.*; Soyekwo, F.; Liu, C.; Hu, Y.; Niu, Q. J., Exploring the feasibility of novel double-skinned forward osmosis membranes with higher flux and superior anti-fouling properties for sludge thickening. *Desalination*, 2022, 523, 115410.
6. Li, SL., Wang, J., Guan, Y., Miao, J., Zhai, R., Wu, J., Hu, Y.*, Construction of pseudo-zwitterionic polyamide RO membranes surface by grafting positively charged small molecules, *Desalination*, 2022, 537, 115892.
7. Kadanyo, S.; Gumbi, N. N.; Matindi, C. N.; Dlamini, D. S.; Hu, Y.; Cui, Z.; Wang, H.; Hu, M.; Li, J.*, Enhancing compatibility and hydrophilicity of polysulfone/poly (ethylene-co-vinyl alcohol) copolymer blend ultrafiltration membranes using polyethylene glycol as hydrophilic additive and compatibilizer. *Separation and Purification Technology*, 2022, 287, 120523.
8. Xue, W.*; Chanamarn, W.; Tabucanon, A. S.; Cruz, S. G.; Hu, Y., Treatment of agro-food industrial waste streams using osmotic microbial fuel cells: Performance and potential improvement measures. *Environmental Technology & Innovation*, 2022, 27, 102773.
9. Fu, W., Huang, Y., Deng, L., Sun, J., Li, SL.* , Hu, Y.*, Ultra-thin microporous membranes based on macrocyclic pillar [n] arene for efficient organic solvent nanofiltration, *Journal of Membrane Science*, 2022, 655, 120583.
10. Zhang, W., Chu, R., Shi, W.* , Hu, Y.*, Quantitatively unveiling the activity-structure relationship of polyamide membrane: A molecular dynamics simulation study, *Desalination*, 2022, 528, 115640.
11. Jia, Y., Xu, G., An, X.* , Hu, Y.*, Robust reduced graphene oxide composite membranes for enhanced anti-wetting property in membrane distillation, *Desalination*, 2022, 526, 115549.
12. Wang, J., Li, SL.* , Guan, Y., Zhu, C., Gong, G., Hu, Y.*, Novel RO membranes fabricated by grafting sulfonamide group: Improving water permeability, fouling resistance and chlorine resistant performance, *Journal of Membrane Science*, 2022, 641, 119919.
13. Zhang, K.; An, X.*; Bai, Y.; Shen, C.; Jiang, Y.; Hu, Y.* , Exploration of food preservatives as draw solutes in the forward osmosis process for juice concentration, *Journal of Membrane Science*, 2021, 119495.
14. Fu, W.; Zhang, W.; Chen, H.; Li, S.*; Shi, W.*; Hu, Y.* , High-flux organic solvent nanofiltration membrane with binaphthol-based rigid-flexible microporous structures, *Journal of Materials Chemistry A*, 2021, 9 (11), 7180-7189.
15. Matindi, CN.; Hu, M.; Kadanyo, S.; Ly, QV.; Gumbi, NN.; Dlamini, DS.; Li, J.*; Hu, Y., Tailoring the morphology of polyethersulfone/sulfonated polysulfone ultrafiltration membranes for highly efficient separation of oil-in-water emulsions using TiO₂ nanoparticles, *Journal of Membrane Science*, 2021, 620, 118868.
16. Deng, L.#; Li, S.#; Zhang, L.; Chen, H.; Chang, Z., Hu, Y.* , Fabrication of antifouling thin-film composite nanofiltration membrane via surface grafting of polyethyleneimine followed by zwitterionic modification, *Journal of Membrane Science*, 2021, 619, 118564.
17. Jebur, M.; Chiao, YH.; Thomas, K.; Patra, T.; Cao, Y.; Lee, K.; Gleason, N.; Qian, X.; Hu,

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18. Zhou, H.; Ji, C.; Li, JQ.; Hu, Y.; Xu, X.; An, Y.; Cheng, LH.*; Understanding the interaction mechanism of algal cells and soluble algal products foulants in forward osmosis dewatering, *Journal of Membrane Science*, 2021, 620, 118835.
 19. Xie, B.; Xu, G.; Jia, Y.; Gu, L.; Wang, Q.; Mushtaq N.; Cheng B.; Hu, Y.*; Engineering carbon nanotubes enhanced hydrophobic membranes with high performance in membrane distillation by spray coating, *Journal of Membrane Science*, 2021, 625, 1189781.
 20. Deng, L.; Li, S.; Qin, Y.; Hu, Y.*; Structure Tailoring and Surface Modification of Antifouling Thin-Film Composite Polyamide Membrane, *Progress in Chemistry*, 2021, 32 (12), 1895.
 21. Soyekwo, F.; Liu, C.*; Hu, Y.; Crosslinked Copolystyrenes based Membranes bearing Alkylcarboxylated and Alkylsulfonated Side Chains for Organic Solvent Nanofiltration, *Separation and Purification Technology*, 2021, 119028.
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 24. Zhang, W.; Qin, Y.; Shi, W.*; Hu, Y.*; Unveiling the Molecular Mechanisms of Thickness-Dependent Water Dynamics in an Ultrathin Free-Standing Polyamide Membrane, *The Journal of Physical Chemistry B* 2020, 124, 52, 11939–11948.
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 26. Zhou, Z.; Li, X.; Guo, D.; Shinde, D.; Lu, D.; Chen, L.; Liu, X.; Cao, L.; Aboalsaud, A.; Hu, Y.; Lai, Z.*; Electropolymerization of Robust Polycarbazole Membranes with Uniform Pores for Rapid Solvent Transport and Molecular Sieving, *Nature Communications* 2020, 11 (1), 1-9.
 27. Liu, Y.; Wang, J.; Wang, Y.; Zhu, H.; Xu, X.; Liu, T.; Hu, Y.*; High-flux robust PSf-b-PEG nanofiltration membrane for the precise separation of dyes and salts, *Chemical Engineering Journal*, 2020, 127051.
 28. Rehman, W.; Khan, A.; Mushtaq N.; Younas, M.*; An, X.; Arbab, M.; Farrukh, M.; Hu, Y.*;

- Rezakazemi, M.*; Electrospun hierarchical fibrous composite membrane for pomegranate juice concentration using osmotic membrane distillation, *Journal of Environmental Chemical Engineering*, 2020, 104475.
29. Wang, J.#; Liu, Y.#; Liu, T.; Xu, X.; Hu, Y.*, Improving the perm-selectivity and anti-fouling property of UF membrane through the micro-phase separation of PSf-b-PEG block copolymers, *Journal of Membrane Science*, 2020, 599, 117851.
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31. Xu, G.R.; An, X.C.; Das, R.; Xu, K.; Xing, Y.L.; Hu, Y.*, Application of electrospun nanofibrous amphiphobic membrane using low-cost poly (ethylene terephthalate) for robust membrane distillation. *Journal of Water Process Engineering*, 2020, 36, 101351.
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33. Li, S.L.; Wu, P.; Wang, J.; Hu, Y.*, High-performance zwitterionic TFC polyamide nanofiltration membrane based on a novel triamine precursor. *Separation and Purification Technology*, 2020, 251.
34. Ly, Q. V.; Matindi, C. N.; Kuvarega, A. T.; Le, Q. V.; Tran, V. S.; Hu, Y.; Li, J., Organic fouling assessment of novel PES/SPSf/Double layered hydroxide mixed matrix membrane for water treatment application. *Journal of Water Process Engineering*, 2020, 37, 101526.
35. Zhou, Z.; Hu, Y.*; Wang, Q.; Mi, B., Carbon nanotube-supported polyamide membrane with minimized internal concentration polarization for both aqueous and organic solvent forward osmosis process. *Journal of Membrane Science*, 2020, 118273.
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38. Li S.; Zhu Z.; Li J.*; Hu, Y.*; Ma X.*, Synthesis and gas separation properties of OH-functionalized Tröger's base-based PIMs derived from 1,1' -binaphthalene-2,2' -OH, *Polymer*, 2020, 193, 122369.
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carbon nanotubes-based porous composite forward osmosis membrane: flux performance, separation mechanism, and potential application, *Journal of Membrane Science*, 2020, 118050.

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42. Zhang, S.#; Ly, Q. V. #; Nghiem, L. D.; Wang, J.; Li, J.; Hu, Y.*; Optimization and organic fouling behavior of zwitterion-modified thin-film composite polyamide membrane for water reclamation: A comprehensive study, *Journal of Membrane Science*, 2020, 596, 117748.
43. Zhou, H.; Ji, C.; Li, J.; Hu, Y.; Xu, X.; An, Y.; Cheng, L.*; Understanding the interaction mechanism of algal cells and soluble algal products foulants in forward osmosis dewatering, *Journal of Membrane Science*, 2020, 118835.
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49. Soyekwo F. ; Liu C.*; Zhao L.; Wen H.; Huang W.; Cai C.; Kanagaraj P.; Hu Y., Nanofiltration Membranes with Metal Cation-Immobilized Aminophosphonate Networks for Efficient Heavy Metal Ion Removal and Organic Dye Degradation, *ACS Appl. Mater. Interfaces*, 2019, 11(33), 30317-30331.
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51. Wang, J.; Zhang, S.; Wu, P.; Shi, W.; Wang, Z.*; Hu, Y.*; *In situ* surface modification of thin-film composite polyamide membrane with zwitterions for the enhanced chlorine-resistance and transport properties, *ACS Appl. Mater. Interfaces*, 2019, 11 (12), 12043-12052.
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Fabrication of Highly Selective and Permeable Thin-Film Composite Nanofiltration Membrane. *ACS Appl. Mater. Interfaces*, 2019, 11(7):7349-7356.

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56. Qi, L.; Hu, Y.*; Chai, Q.; Wang, Q., Enhanced filtration performance and anti-biofouling properties of antibacterial polyethersulfone membrane for fermentation broth concentration. *Journal of Industrial and Engineering Chemistry* 2019, 72, 346-353.
57. Wang, Q.; Zhou, Z.; Li, J.; Tang, Q.; Hu, Y.*, Modeling and measurement of temperature and draw solution concentration induced water flux increment efficiencies in the forward osmosis membrane process. *Desalination*, 2019, 452, 75-86.
58. Li, Z.; Liu, Y.; Yan, J.; Wang, K.; Xie, B.; Hu, Y.; Kang, W.; Cheng, B., Electrospun polyvinylidene fluoride/fluorinated acrylate copolymer tree-like nanofiber membrane with high flux and salt rejection ratio for direct contact membrane distillation. *Desalination* 2019, 466, 68-76.
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62. Wang, N.; Zhang, Z.; Huang, J.; Hu, Y*., Facile synthesis of copper ions chelated sand via dopamine chemistry for recyclable and sustainable catalysis. *Chemical Engineering Science*, 2019, 203, 312-320.
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66. Li, J.; Ni, Z.; Zhou, Z.; Hu, Y.; Xu, X.; Cheng, L.*; Membrane fouling of forward osmosis in dewatering of soluble algal products: Comparison of TFC and CTA membranes. *Journal of Membrane Science*, 2018, 552, 213-221.
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69. Zhou, Z.; Hu, Y.*; Boo, C.; Liu, Z.; Li, J.; Deng, L.; An, X., High-Performance Thin-Film Composite Membrane with an Ultrathin Spray-Coated Carbon Nanotube Interlayer. *Environmental Science & Technology Letters*, 2018, 5 (5), 243-248.
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71. Wang, N.; Wang, T.; Hu, Y.*; Tailoring Membrane Surface Properties and Ultrafiltration Performances via the Self-Assembly of Polyethylene Glycol-block-Polysulfone-block-Polyethylene Glycol Block Copolymer upon Thermal and Solvent Annealing. *ACS Applied Materials & Interfaces*, 2017, 9 (36), 31018-31030.
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