

<u>基本信息</u>		
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<u>教育背景</u>		
2014.10-2017.09	日本广岛大学，化学工程专业，工学博士	
2011.09-2014.07	郑州大学，化学工程专业，工学硕士	
2007.09-2011.07	河南科技大学，化学工程与工艺专业，工学学士	
<u>工作经历</u>		
2021.02-至今	北京理工大学前沿交叉科学研究院，预聘副教授	
2019.04-2020.12	日本广岛大学，助理教授	
2017.10-2019.03	日本广岛大学，博士后研究员	
<u>研究方向</u>		
1.	分离膜材料的设计、合成	
2.	膜技术在废水处理、海水淡化、气体分离中的应用	
3.	分离膜传质机理研究	
4.	硅基材料的溶胶-凝胶化学	
<u>荣誉奖励</u>		
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<u>承担项目</u>		

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研究成果

迄今在国内外学术刊物及会议上发表学术论文 29 篇，其中 SCI 收录 29 篇（3 篇入选 ESI 高被引），获授权专利 3 项，其中中国专利 2 项，日本专利 1 项。

1.	将氧化石墨烯等负载抗菌剂的纳米材料引入超滤膜基质内从而制备了一系列抗菌超滤膜，并对其抑菌性能进行了详细的研究。该类型抗菌超滤膜可以显著提高超滤膜的抗生物污染能力。
2.	提出并设计了一系列用于染料有机小分子和电解质离子分离的疏松纳滤膜。该类型疏松型纳滤膜比传统纳滤膜具有相对较大的孔径结构或疏松表皮层，从而可以显著降低对电解质的截留（截留率小于5%或接近于0），但同时不影响有机染料小分子的截留（截留率大于90%）
3.	详细研究了氨基类型对CO ₂ 亲和性和传递效率的影响，发现氨基类型（或碱性强弱）对CO ₂ 传递效率有至关重要的影响。提出了采用具有空间位阻的氨基制备“温和亲和性”的CO ₂ 分离膜的思路，并开展了一系列工作对氨基化有机硅膜的CO ₂ 传递机理进行了探讨。该系列工作有望给CO ₂ 分离膜研究者提供一个设计更加高效促进传递膜的思路。
4.	参考相转化技术在有机膜制备领域的应用，以高分子作为粘结剂采用类似相转化的方法制备了超薄的平板氧化铝分离膜（厚度小于0.5毫米）。该类型的氧化铝陶瓷膜具有较高的孔隙率，并可以通过调整相转化过程中参数对你断面形貌结构进行控制，从而调整分离膜的性能。研究发现该系列超薄陶瓷膜具有超高的纯水渗透量（ $1\sim 4\times 10^4$ L/(m ² h bar)），远远大于具有相似孔径的陶瓷膜(约提高一个数量级)。在油水分离测试中也表现出了优异性能，在保证较高的油水分离效能的前提下（对油相的移除率接近100%），水渗透性能也远超大部分油水分离膜性能。

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代表性论文	
1.	Liang Yu , Yatao Zhang*, Bing Zhang, Jindun, Liu*, Haoqin Zhang, chunhua Song. Preparation and characterization of HPEI-GO/PES ultrafiltration membrane with antifouling and antibacterial properties. <i>Journal of Membrane Science</i> , 2013, 447, 452-462.
2.	Liang Yu , Yatao Zhang*, Yuanming Wang, Haoqin Zhang, Jindun Liu. High flux, positively charged loose nanofiltration membrane by blending with poly (ionic liquid) brushes grafted silica spheres. <i>Journal of Hazardous Materials</i> , 2015, 287, 373-383.
3.	Liang Yu , Huixian Wang, Yatao Zhang*, Bin Zhang, Jindun Liu. Recent advances in halloysite nanotube derived composites for water treatment. <i>Environmental Science: Nano</i> , 2016, 3, 28-44.
4.	Liang Yu , Masakoto Kanezashi, Hiroki Nagasawa, Toshinori Tsuru*. Phase inversion/sintering-induced porous ceramic microsheet membranes for high-quality separation of oily wastewater. <i>Journal of Membrane Science</i> , 2020, 595, 117477.
5.	Liang Yu , Masakoto Kanezashi, Hiroki Nagasawa, Toshinori Tsuru*. Fabrication and CO ₂ permeation properties of amine-silica membranes using a variety of amine types. <i>Journal of Membrane Science</i> , 2017, 541, 447-456.
6.	Liang Yu , Masakoto Kanezashi, Hiroki Nagasawa, Norihiro Moriyama, Kenji Ito, Toshinori Tsuru*. Enhanced CO ₂ separation performance for tertiary amine-silica membranes via thermally induced local liberation of CH ₃ Cl. <i>AIChE Journal</i> , 2018, 64, 1528-1539.
7.	Liang Yu , Yatao Zhang*, Haoqin Zhang, Jindun Liu. Development of a molecular separation membrane for efficient separation of low-molecular-weight organics and salts. <i>Desalination</i> , 2015, 359, 176-185.
8.	Liang Yu , Masakoto Kanezashi, Hiroki Nagasawa, Meng Guo, Norihiro Moriyama, Kenji Ito, Toshinori Tsuru*. Tailoring ultramicroporosity to maximize CO ₂ transport within pyrimidine-bridged organosilica membranes. <i>ACS Applied Materials & Interfaces</i> , 2019, 11, 7164–7173.
9.	Liang Yu , Masakoto Kanezashi, Hiroki Nagasawa, Joji Oshita, Akinobu Naka, Toshinori Tsuru*. Pyrimidine-bridged organoalkoxysilane membrane for high-efficiency CO ₂ transport via mild affinity. <i>Separation and Purification Technology</i> , 2017, 178, 232-241.
10.	Liang Yu , Jianmian Deng, Huixian Wang, Jindun Liu, Yatao Zhang*. Improved salts transportation of a positively charged loose nanofiltration membrane by introduction of poly(ionic liquid) functionalized hydrotalcite nanosheets. <i>ACS Sustainable Chemistry & Engineering</i> , 2016, 4, 3292–3304.
11.	Liang Yu , Masakoto Kanezashi, Hiroki Nagasawa, Joji Oshita, Akinobu Naka, Toshinori Tsuru*. Fabrication and microstructure tuning of a pyrimidine-

	bridged organoalkoxysilane membrane for CO ₂ separation. <i>Industrial & Engineering Chemistry Research</i> , 2017, 56, 1316-1326.
12.	Liang Yu , Masakoto Kanezashi, Hiroki Nagasawa, Toshinori Tsuru*. Role of amine type in CO ₂ separation performance within amine functionalized silica/organosilica membranes: A review. <i>Applied Sciences</i> , 2018, 8, 1032.
13.	Liang Yu , Yatao Zhang*, Bing Zhang, Haoqin Zhang, Jindun Liu, Chunhua Song. Enhanced antibacterial activity of silver nanoparticles/halloysite nanotubes/graphene nanocomposites with sandwich-Like structure. <i>Scientific Reports</i> , 2014, 4. doi:10.1038/srep04551.
14.	Liang Yu , Yatao Zhang*, Jindun Liu. Preparation and characterization of modified graphene oxide/PES hybrid positively charged nanofiltration membrane. <i>Chemical Journal of Chinese Universities</i> , 2014, 35(5): 1100-1105.
15.	Qing Wang, Yuta Kawano, Liang Yu , Hiroki Nagasawa, Masakoto Kanezashi, Toshinori Tsuru*. Development of high-performance sub-nanoporous SiC-based membranes derived from polytitanocarbosilane. <i>Journal of Membrane Science</i> , 2020, 598, 117688.
16.	Guanying Dong, Hiroki Nagasawa, Liang Yu , Meng Guo, Masakoto Kanezashi, Tomohisa Yoshioka, Toshinori Tsuru*. Energy-efficient separation of organic liquids using organosilica membranes via a reverse osmosis route. <i>Journal of Membrane Science</i> , 2020, 597, 11758.
17.	Guanying Dong, Hiroki Nagasawa, Liang Yu , Qing Wang, Kazuki Yamamoto, Joji Ohshita, Masakoto Kanezashi, Toshinori Tsuru*. Pervaporation removal of methanol from methanol/organic azeotropes using organosilica membranes: Experimental and modeling. <i>Journal of Membrane Science</i> , 2020, 610, 118284.
18.	Jindun Liu, Liang Yu , Yatao Zhang*. Fabrication and characterization of positively charged hybrid ultrafiltration and nanofiltration membranes via the in-situ exfoliation of Mg/Al hydrotalcite. <i>Desalination</i> , 2014, 335, 78-86.
19.	Qing Wang, Liang Yu , Hiroki Nagasawa, Masakoto Kanezashi, Toshinori Tsuru*. Tuning the microstructure of polycarbosilane-derived SiC(O) separation membranes via thermal-oxidative cross-linking. <i>Separation and Purification Technology</i> , 2020, 248, 117067.
20.	Chuochuo Liu, Liang Yu , Yatao Zhang*, Bing Zhang, Jindun Liu, Haoqin Zhang. Preparation of poly(sodium acrylate-acrylamide) superabsorbent nanocomposites incorporating graphene oxide and halloysite nanotubes. <i>RSC Advances</i> , 2013, 3, 13756-13763.
21.	Qing Wang, Liang Yu , Hiroki Nagasawa, Masakoto Kanezashi, Toshinori Tsuru*. High-performance molecular-separation ceramic membranes derived from oxidative cross-linked polytitanocarbosilane. <i>Journal of the American Ceramic Society</i> , 2020, https://doi.org/10.1111/jace.17108 .
23.	Lawal, Sulaiman Oladipo, Liang Yu , Hiroki Nagasawa, Toshinori Tsuru* Masakoto Kanezashi. A carbon-silica-zirconia ceramic membrane with CO ₂ flow-switching behaviour promising versatile high-temperature H ₂ /CO ₂

	separation. <i>Journal of Materials Chemistry A</i> , 2020, 44, 23563-23573.
24.	Anggarini, Ufafa, Toshinori Tsuru*, Masakoto Kanezashi, Hiroki Nagasawa, Liang Yu . Metal-induced microporous aminosilica creates a highly permeable gas-separation membrane. <i>Materials Chemistry Frontiers</i> , 2021, DOI: 10.1039/D1QM00009H.

【说明：在上述基础模板上，可按找个人情况增加项目，请格式保持一致】