



所属学院 化工学院

学科领域 化学工程与技术

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个人简介

分别于1998年和2001年获得四川大学学士（有机化工专业）、硕士（化学工程专业）学位，于2004年获得华东理工大学博士学位（化学工程专业）。博士毕业后，在华东理工大学化工学院联合化学反应工程研究所工作，于2011年晋升为教授。

2007年10月-2008年9月期间在比利时根特大学化工系从事博士后研究，并于2015年11-12月以访问科学家身份在比利时根特大学化工系从事合作研究。

研究方向

面向能源和环境需求，利用化学反应工程基本理论和方法，设计制备催化和吸附材料并探究其构效关系，开展反应动力学和反应器模拟优化方面的研究。近年来，重点围绕甲烷重整、炔烃选择性加氢、重油加氢裂化、CO₂捕集等展开研究工作。

研究成果及主要发表文章

先后负责国家自然科学基金（3项）、教育部新世纪优秀人才项目、中石化等企业委托项目12项，发表SCI论文60余篇，包括化工三大期刊22篇，授权国家发明专利5项。

【近年来发表的代表性论文】

1. Yang L, Yu S Y, Peng C, Fang X C*, Cheng Z M, Zhou Z M*. Semihydrogenation of phenylacetylene over nonprecious Ni-based catalysts supported on AlSBA-15. *Journal of Catalysis*, 2019, 370: 310-320.
2. Yang L, Peng C, Fang X C*, Cheng Z M, Zhou Z M*. Hierarchically macro-mesoporous Ni-Mo/Al₂O₃ catalysts for hydrodesulfurization of dibenzothiophene. *Catalysis Communications*, 2019, 121: 68-72.
3. Peng C, Zhou Z M*, Cheng Z M, Fang X C*. Upgrading of light cycle oil to high-octane gasoline through selective hydrocracking over non-noble metal bifunctional catalysts. *Energy & Fuels*, 2019, 33: 1090-1097.
4. Hu Y W, Cui H J, Cheng Z M, Zhou Z M*. Sorption-enhanced water gas shift reaction by in situ CO₂ capture on an alkali metal salt-promoted MgO-CaCO₃ sorbent. *Chemical Engineering Journal*, 2018, DOI: 10.1016/j.cej.2018.08.209.
5. Cui H J, Zhang Q M, Hu Y W, Peng C, Fang X C, Cheng Z M, Galvita V, Zhou Z M*. Ultrafast and stable CO₂ capture using alkali metal salt-promoted MgO-CaCO₃ sorbents. *ACS Applied Materials & Interfaces*, 2018, 10: 20611-20620.
6. Xin J N, Cui H J, Cheng Z M, Zhou Z M*. Bimetallic Ni-Co/SBA-15 catalysts prepared by urea co-precipitation for dry reforming of methane. *Applied Catalysis A: General*, 2018, 554: 95-104.
7. Yang L, Jin Y Z, Fang X C*, Cheng Z M, Zhou Z M*. Magnetically recyclable core-shell structured Pd-based catalysts for semi-hydrogenation of phenylacetylene. *Industrial & Engineering Chemistry Research*, 2017, 56: 14182-14191. (Cover)
8. Wang L, Zhou Z M*, Hu Y W, Cheng Z M, Fang X C*. Nanosheet MgO-based CO₂ sorbent promoted by mixed alkali metal nitrate and carbonate: performance and mechanism. *Industrial & Engineering Chemistry Research*, 2017, 56: 5802-5812. (Cover)
9. Chen X L, Yang L, Zhou Z M*, Cheng Z M. Core-shell structured CaO-Ca₉Al₆O₁₈@Ca₅Al₆O₁₄/Ni bifunctional material for sorption-enhanced steam methane reforming. *Chemical Engineering Science*, 2017, 163: 114-122.
10. Zhao C J, Zhou Z M*, Cheng Z M, Fang X C*. Sol-gel-derived, CaZrO₃-stabilized Ni/CaO-CaZrO₃ bifunctional catalyst for sorption-enhanced steam methane reforming. *Applied Catalysis B: Environmental*, 2016, 196: 16-26.
11. Wang Z Q, Yang L, Zhang R, Li L, Cheng Z M, Zhou Z M*. Selective hydrogenation of phenylacetylene over bimetallic Pd-Cu/Al₂O₃ and Pd-Zn/Al₂O₃ catalysts. *Catalysis Today*, 2016, 264: 37-43.
12. Xu P, Zhou Z M*, Zhao C J, Cheng Z M. Catalytic performance of Ni/CaO-Ca₅Al₆O₁₄ bifunctional catalyst extrudate in sorption-enhanced steam methane reforming. *Catalysis Today*, 2016, 259: 347-353.
13. Yang L, Chen X L, Zhou Z M*, Zhang R, Li L, Cheng Z M, Fang X C*. Magnetic Fe₃O₄@SiO₂/Pd and Fe₃O₄@SiO₂/Pd-M (M = Ag, Cu and Zn) catalysts for selective hydrogenation of phenylacetylene. *ChemistrySelect*, 2016, 1: 5599-5606.
14. Wan Y, Zhou Z M*, Cheng Z M. Hydrogen production from steam reforming of methanol over CuO/ZnO/Al₂O₃ catalysts: catalytic performance and kinetic modeling. *Chinese Journal of Chemical Engineering*, 2016, 24: 1186-1194.
15. Zhou Z M*, Hu J W, Zhang R, Li L, Cheng Z M. Revisiting the reaction kinetics of selective hydrogenation of phenylacetylene over an egg-shell catalyst in excess styrene. *Chemical Engineering Science*, 2015, 138: 663-672.
16. Qi Y, Cheng Z M, Zhou Z M*. Steam reforming of methane over Ni catalysts prepared from hydrotalcite-type precursors: catalytic activity and reaction kinetics. *Chinese Journal of Chemical Engineering*, 2015, 23: 76-85.
16. Xu P, Zhou Z M*, Zhao C J, Cheng Z M. Ni/CaO-Al₂O₃ bifunctional catalysts for sorption-enhanced steam methane reforming. *AIChE Journal*, 2014, 60: 3547-3556.
17. Zhao C J, Zhou Z M*, Cheng Z M. Sol-gel-derived synthetic CaO-based CO₂ sorbents incorporated with different inert materials. *Industrial & Engineering Chemistry Research*, 2014, 53: 14065-14074.
18. Hu J W, Zhou Z M*, Zhang R, Li L, Cheng Z M. Selective hydrogenation of phenylacetylene over a nano-Pd/ α -Al₂O₃ catalyst. *Journal of Molecular Catalysis A: Chemical*, 2014, 381: 61-69.
19. Liu C, Zhou Z M*, Huang Y L, Cheng Z M, Yuan W K. Support effects on thiophene hydrodesulfurization over Co-Mo-Ni/Al₂O₃ and Co-Mo-Ni/TiO₂-Al₂O₃ catalysts. *Chinese Journal of Chemical Engineering*, 2014, 22: 383-391.