Zhiming Zhou

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Profile

In 1998 and 2001, he obtained bachelor's degree (Organic Chemical Engineering) and master's degree (Chemical Engineering) from Sichuan University and doctor's degree (Chemical Engineering) from East China University of science and technology in 2004. After graduation, he worked in the Institute of chemical reaction engineering, School of chemical engineering, East China University of science and technology, and was promoted to Professor in 2011.

From October 2007 to September 2008, he worked as a postdoctoral researcher in the Department of chemical engineering of Ghent University in Belgium, and from November to December 2015, he worked as a visiting scientist in the Department of chemical engineering of Ghent University in Belgium.

Research Field

In order to meet the needs of energy and environment, the basic theory and method of chemical reaction engineering are used to design and prepare catalytic and adsorption materials and explore their structure-activity relationship, and the research on reaction kinetics and reactor simulation optimization is carried out. In recent years, the research focuses on methane reforming, selective hydrogenation of alkynes, hydrocracking of heavy oil and CO2 capture.

Research results and selected published papers

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 captureon 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/Al2O3catalysts: 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.