



所属学院 资源与环境工程学院

学科领域 能源化工

邮箱 chinadai@ecust.edu.cn

个人简介

代正华，华东理工大学教授、博士生导师，主要从事气流床气化技术的研究与开发。建立了煤气化系统的集成优化模型，在OMB煤气化技术中得到了广泛的应用。作为主要负责人成功开发了SE水煤浆气化技术和烃类部分氧化技术。

研究方向

过程系统模拟与优化

气流床煤气化技术开发

气态烃非催化部分氧化技术开发

研究成果及主要发表文章

1. Zhenghua Dai*, Xin Gong, Xiaolei Guo, Haifeng Liu, Fuchen Wang, Zunhong Yu. Pilot-trial and modeling of a new type of pressurized entrained-flow pulverized coal gasification technology[J]. Fuel, 2008, 87 (10 - 11): 2304~2313
2. Shuhang Zhang, Zhenghua Dai*, Jianliang Xu, Haifeng Liu, Fuchen Wang. Sensitivity and safety boundary Analysis of Opposed Multi-Burner Coal Water Slurry Gasification System [J]. International Journal of Energy Research, 2019
3. PengQiu, BoHuang, ZhenghuaDai*, FuchenWang. Data-driven analysis and optimization of externally heat-integrated distillation columns (EHIDiC) [J]. Energy, 2019, 116177
4. Bo Huang, Yang Li, Rui Gao, Yongfei Zuo, Zhenghua Dai*, Fuchen Wang*. Simultaneous optimization and heat integration of the coal-to-SNG process with a branched heat recovery steam cycle[J]. Computer and Chemical Engineering, 2018, 17(2): 117-128
5. Bo Huang, Rui Gao, Jianliang Xu, Zhenghua Dai*, Fuchen Wang. Simultaneous heat integration and economic optimization of the coal-to-SNG process[J]. Computer and Chemical Engineering, 2018, 118: 248-260
6. Xinyu Li, Zhenghua Dai*, Fuchen Wang*. Characteristic Chemical Time Scale Analysis of a Partial Oxidation Flame in Hot Syngas Coflow[J]. Energy and Fuel, 2017, 31 (4): 4382-4390
7. Xinyu Li, Zhenghua Dai*, Qinghua Guo, Qinfeng Liang, Fuchen Wang*. Experimental and numerical study of MILD combustion in a bench-scale natural gas partial oxidation gasifier[J]. Fuel, 2017, 193: 197~205
8. Xinyu Li, Zhenghua Dai*, Yueling Xu, Chao Li, Zhijie Zhou, Fuchen Wang*. Inverse diffusion flame of CH4 - O2 in hot syngas coflow, International Journal of Hydrogen Energy[J]. 2015, 40 (46): 16104~16114
9. Yu-qin Wang, Zheng-hua Dai*, Hong Cheng, Jian-liang Xu, Fu-chen Wang. Cold modeling of a direct coupling autothermal methane reforming reactor[J]. Chemical Engineering Journal, 2011, 168 (1): 303~311
10. Chao Li, Zhenghua Dai*, Weifeng Li, Jianliang Xu, Fuchen Wang. 3D numerical study of particle flow behavior in the impinging zone of an Opposed Multi-Burner gasifier[J]. Powder Technology, 2012, 225: 118~123
11. Yueling Xu, Zhenghua Dai*, Chao Li, Xinyu Li, Zhijie Zhou, Guansuo Yu, Fuchen Wang*. Numerical simulation of natural gas non-catalytic partial oxidation reformer, International Journal of Hydrogen Energy[J]. 2014, 39 (17): 9149~9157
12. Wei Wan, Zhenghua Dai*, Chao Li, Guansuo Yu, Fuchen Wang. Innovative concept for gasification for hydrogen based on the heat integration between water gas shift unit and coal - water - slurry gasification unit, International Journal of Hydrogen Energy[J]. 2014, 39 (15): 7811~7818
13. Wei Wan, Zhenghua Dai*, Guansuo Yu, Fuchen Wang. System simulation research of two kinds of petcoke gasification process for hydrogen[J]. International Journal of Energy Research, 2014, 38 (9): 1162~1170
14. Sun, Zhonghua, Dai, Zhenghua, Zhou, Zhijie, Xu, Jianliang, Yu, Guansuo*. Comparative Study of Gasification Performance between Bituminous Coal and Petroleum Coke in the Industrial Opposed Multiburner Entrained Flow Gasifier[J] Energy & Fuels, 2012, 26 (11): 6792~6802
15. Sun, Zhonghua, Dai, Zhenghua, Zhou, Zhijie, Guo, Qinghua, Yu, Guansuo*. Numerical Simulation of Industrial Opposed Multiburner Coal-Water Slurry Entrained Flow Gasifier[J]. Industrial & Engineering Chemistry Research, 2012:51 (6): 2560~2569
16. Li Chao, Dai Zhenghua, Sun Zhonghua, Wang Fuchen*. Modeling of an Opposed Multiburner Gasifier with a Reduced-Order Model, Industrial & Engineering Chemistry Research[J]. 2013, 52 (16): 5825~5834