



# Pengbo Fu

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## Profile

Pengbo Fu, Ph.D., associated researcher. Prof. Fu is dedicated to the research on the theory and technology of pollutant source control and resource recovery, and made important contributions to the environmental protection of national basic raw material industries and strategic emerging industries. Prof. Fu was selected as one of the advanced workers of environmental protection in petroleum and chemical industry in the "13th Five-Year Plan" , "Postdoctoral Innovation Talent Program" by the Ministry of Human Resources and Social Security of the People’ s Republic of China, Shanghai Post-doctoral excellence program, and Qian Yi Environmental Award, etc. Prof. Fu has presided over more than ten research projects, such as the National Natural Science Foundation of China, the sub-projects of the National Key Research and Development Program, the Postdoctoral Science Foundation, and the research projects entrusted by enterprises. Prof. Fu has published more than 30 papers, and 18 papers in Environmental Science & Technology, Water Research, Separation and Purification Technology, Energy and other journals as first/ corresponding author, and granted 16 invention patents in China and 5 foreign patents in the US, Japan and Russia, and was awarded the “First Prize of Scientific and Technological Progress” by the China Petroleum and Chemical Industry Federation as the second completer.

## Research Field

1. Atmospheric multi-pollutant synergistic control
2. Synergistic reduction of pollution and carbon in chemical processes
3. Intelligent environmental protection equipment research and application

## Research results and main published thesis

1. Peng-Bo Fu, Fei Wang, Xue-Jing Yang, Liang Ma, Xin Cui and Hua-Lin Wang\*. Inlet Particle-Sorting Cyclone for the Enhancement of PM2.5 Separation. Environmental Science & Technology, 2017, 51: 1587-1594.
2. Pengbo Fu, Xia Jiang, Liang Ma, Qiang Yang, Zhishan Bai, Xuejing Yang, Jianqi Chen, Wei Yuan, Hualin Wang, Wenjie Lv\*. Enhancement of PM2.5 Cyclone Separation by Droplet Capture and Particle Sorting. Environmental Science & Technology, 2018, 52: 11652-11659.
3. Qiqi Li, Tingting Cheng, Yufei Lu, Bin Zhang, Yuan Huang, Yuan Yang, Chunjiang Li, Jianping Li, Hualin Wang, Pengbo Fu\*. Sludge low-temperature drying with mainly non-phase change in mere seconds based on particle high-speed self-rotation in cyclone. Water Research, 2022, 224, 119092.
4. Pengbo Fu, Hao Yu, Qiqi Li, Tingting Cheng, Fangzheng Zhang, Tao Yang, Yuang Huang, Jianping Li\*, Xiangchen Fang, Guangli Xiu, Hualin Wang. Cyclone rotational drying of lignite based on particle high-speed self-rotation: Lower carrier gas temperature and shorter residence time. Energy, 2022, 124, 123005.
5. Peng-Bo Fu, Hua-Lin Wang\*, Jian-Ping Li, Yuan Huang, Yi-Lin Fang, Wei Yuan, Xiang-Chen Fang, Li-Quan Li, Zhao-Hui Huang, Lai Jiang. Cyclonic gas stripping deoiling and gas flow acceleration classification for the resource utilization of spent catalysts in residue hydrotreating process. Journal of Cleaner Production, 2018, 190: 689-702.
6. Pengbo Fu, Yilin Fang, Xia Jiang, Wenjie Lv, Yuan Huang, Yi Liu, Jianping Li, Yulong Chang, Liang Ma\*, HualinWang. Gas flow acceleration classification of polyvinyl alcohol (PVA) to promote energy saving in pulverizing system. Journal of Cleaner Production, 2020, 244, 118782.
7. Pengbo Fu, Fei Wang, Liang Ma, Xuejing Yang, Hualin Wang\*. Fine particle sorting and classification in the cyclonic centrifugal field. Separation and Purification Technology, 2016, 158: 357-366.
8. Pengbo Fu, Yilin Fang, Liang Ma, Xia Jiang, Yi Liu, Wenjie Lv, Yuan Huang, Lu Wang, Jianping Li\*, Hualin Wang. Air acceleration classification for the enhancement of spent catalyst activity classification. Separation and Purification Technology, 2019, 223: 31-40.
9. Pengbo Fu, Jingyi Zhu, Qiqi Li, Tingting Cheng, Fangzheng Zhang, Yuang Huang, Liang Ma\*, Guangli Xiu, Hualin Wang. DPM Simulation of Particle Revolution and High-Speed Self-Rotation in Different Pre-Self-Rotation Cyclones. Powder Technology, 2021, 394: 290-299.
10. Pengbo Fu, Hao Yu, Qiqi Li, Tingting Cheng, Fangzheng Zhang, Yuang Huang, Wenjie Lv\*, Guangli Xiu, Hualin Wang. CFD-DEM Simulation of Particle Revolution and High-Speed Self-Rotation in Cyclones with Different Structural and Operating Parameters. Chemical Engineering Journal Advances, 2021, 8, 100176.
11. Hualin Wang\*, Pengbo Fu, Jianpin Li, Yuan Huang, Ying Zhao, Lai Jiang, Xiangchen Fang, Tao Yang, Zhaohui Huang, Cheng Huang. Separation-and-Recovery Technology for Organic Waste Liquid with a High Concentration of Inorganic Particles. Engineering, 2018, 4: 406-415.
12. Liang Ma, Mengya He, Pengbo Fu\*, Xia Jiang, Wenjie Lv, Yuan Huang, Yi Liu, Hualin Wang. Adsorption of Volatile Organic Compounds on Modified Spherical Activated Carbon in a New Cyclonic Fluidized Bed. Separation and Purification Technology, 2020, 235, 116146.
13. Tingting Cheng, Qiqi Li, Hualin Wang, Xiangchen Fang, Liquan Li, Lai Jiang, Jianping Li, Yuan Huang, Tao Yang, Pengbo Fu\*. High-speed particle self-rotation in different pre-self-rotation cyclones and application in enhancement of oil recovery from spent catalysts. Separation and Purification Technology, 2022, 121430.
14. Li Dai, Minjie Shan, Jianping Li, Jianqi Chen, Wenjie Lv, Pengbo Fu\*, Hongpeng Ma, Hualin Wang. Purification and reuse of carbon black wastewater of acetylene production from natural gas by microchannel filtration. Process Safety and Environmental Protection, 2022, 162: 219-229.
15. Jiake Pan, Qisong Shen, Xin Cui, Jiwei Wu, Liang Ma, Chengcheng Tian, Pengbo Fu\*, Hualin Wang. Cyclones of different sizes and underflow leakage for aerosol particles separation enhancement. Journal of Cleaner Production, 2021, 280, 124379.
16. Liang Ma, Bowen Feng, Zhihuang Zhao, Lv Peng, Hongbing Jin, Pengbo Fu\*. Jet absorption and desulfurization technology of sulfur waste gas in the acrylonitrile apparatus. Chemical Engineering and Processing - Process Intensification, 2020, 153, 107957.
17. Hualin Wang; Pengbo Fu; Zhaohui Huang; Aibing Huang; Cheng Huang; Jianhuai Sun; Ying Zhao; Liquan Li; Chonggang Chen; Qian Zeng; Jianping Li; Yilin Fang; Fei Wang; Method and device fortreating and sorting and recycling oil-containing efflux catalyst, 2021-11-30, Japanese Patent: JP 6964763; Russian Patent: RU 2748501C1; Indian Patent: IN 383234
18. Hualin Wang, Yuan Huang, Yang Qiu, Pengbo Fu, Yanhong Zhang, Zhishan Bai, Qiang Yang, Fengqin He. Synchronous high speed photographing method and device for microparticle rotation in liquid cyclone field. Russian Patent: RU 2665344C2; U.S. Patent: US 10598585B2