



## Profile

Yu Guangsuo, male, was born in February 1970 in Feixi, Anhui. Professor, PhD advisor. Yangtze River Scholars Distinguished Professor of Ministry of Education, Winner of China Youth Science and Technology Award, Outstanding Talent of New Century from Ministry of Education, Shanghai Shuguang Scholar, Shanghai Science and Technology Star, Shanghai Yucai Award.

He has been engaged in basic research and engineering development of coal gasification technology for a long time, and is responsible for the promotion, application and engineering implementation of opposed multi-burner coal water slurry gasification technology. It has been used in 58 projects at home and abroad, and 159 gasifiers have been designed, constructed and operated. The maximum design capacity of a single gasifier has reached 4000 tons / day.

Academic honor: Member of the Academic Committee of the State Key Laboratory of Advanced Refractories; Expert of the Coal Chemical Industry Committee of the China Petroleum and Chemical Industry Federation; "Fuel" Special Issue Guest Editor (VSI: 9th IFC), "Coal Chemical", "Coal Conversion", "Nitrogen Fertilizers and Syngas", "Fertilizer Industry", "China Coal Chemical Industry" editorial board, etc.

## Research Field

Coal gasification; Catalysis and reaction engineering; Flame visualization

## Research results and selected published papers

He directs the National Natural Science Foundation projects, 863 National High Technology Research and Development Program projects and major projects of patent license (including the license to Valero in U.S.). He won 2 second prize of National Science & Technology Progress Award and 2 special-class prize, 6 first prize and 4 second prize of provincial and ministerial level Scientific & Technology Progress Award in China. He applied more than 100 China invention patents (more than 80 authorized), more than 60 China design patents and 4 U.S. patents (3 authorized). He published more than 300 papers in AIChE J., Chem. Eng. Sci., Chem. Eng. J., Fuel, Appl. Energ., Energ. Fuel and other journals, including more than 150 papers cited in SCI and 240 papers in EI.

Main published papers:

- [1] XiaoxiangWu, Yan Gong, Qinghua Guo, Zhicun Xue, Guangsuo Yu\*. Experimental study on the atomization and particle evolution characteristics in an impinging entrained-flow gasifier. Chemical Engineering Science, 2019, 207: 542-555.
- [2] Wei JT, Gong Y, Guo QH, Chen XL, Ding L, Yu G\*. A mechanism investigation of synergy behaviour variations during blended char co-gasification of biomass and different rank coals. Renew Energ, 2019, 131: 597-605.
- [3] He L, Guo QH, Gong Y, Wang FC, Yu GS\*. Investigation of OH\*chemiluminescence and heat release in laminar methane-oxygen co-flow diffusion flames. Combust Flame, 2019, 201: 12-22.
- [4] He Q, Guo QH, Ding L, Gong Y, Wei JT, Yu GS\*. Co-pyrolysis behavior and char structure evolution of raw/torrefied rice straw and coal blends. Energy Fuels, 2018, 32: 12469-12476.
- [5] Xue ZC, Guo QH, Gong Y, Wang YF, Yu GS\*. In-situ atomization and flame characteristics of coal water slurry in an impinging entrained-flow gasifier. Chem Eng Sci, 2018, 190: 248-259.
- [6] Ding L, Gong Y, Wang YF, Wang FC, Yu GS\*. Characterisation of the morphological changes and interactions in char, slag and ash during CO<sub>2</sub> gasification of rice straw and lignite. Appl Energ, 2017, 195: 713-724.
- [7] Wei JT, Guo QH, He Q, Ding L, Yoshikawa K, Yu GS\*. Co-gasification of bituminous coal and hydrochar derived from municipal solid waste: Reactivity and synergy. Bioresour Technol, 2017, 239: 482-489.
- [8] Zhang Q, Gong Y, Guo QH, Xue ZC, Wang FC, Yu GS\*. Experimental study of particle evolution characteristics in an opposed multi-burner gasifier. Chem Eng Sci, 2017, 162: 104-119.
- [9] Zhang Q, Gong Y, Guo QH, Song XD, Yu GS\*. Experimental study on CH\* chemiluminescence characteristics of impinging flames in an Opposed Multi-Burner gasifier. AIChE J, 2017, 63(6): 2007-2018.
- [10] Lu Ding, Zhijie Zhou, Qinghua Guo, Wei Huo, Guangsuo Yu\*. Catalytic effects of Na<sub>2</sub>CO<sub>3</sub> additive on coal pyrolysis and gasification. Fuel, 2015, 142(2): 134-144.