



Profile

Ph.D., Professor, Doctoral supervisor. He engaged in clean energy conversion research for a long time, main research directions: coal gasification, coal hydroliquefaction to produce oil, biomass gasification power generation and heating, carbon dioxide catalytic conversion, and chemical reactor numerical simulation and optimization, etc. He has presided over a number of key scientific research projects such as National Natural Science Foundation, World Bank Global Environment Facility Project (CRESP), 973, 863 and National Key Research and Development Program. His research achievements have won 5 provincial and ministerial-level science and technology awards. He has published more than 100 academic papers, including more than 50 SCI papers, 1 book, 21 authorized and public patents.

Experience

1. 1982.8-1985.8 Teacher of Chemical Engineering Department, Tianjin University
2. 1985.9-1988.7 Graduate student of Energy and Chemical Engineering Department, East China University of Science and Technology
3. 1988.9-1993.2 Teacher of Thermal Engineering Department, Tongji University
4. 1993.10-1993.12 Visiting Scholar, Osaka University, Japan
5. 1993.3-Present Teacher of Energy and Chemical Engineering Department, East China University of Science and Technology

Teaching courses

1. Energy Conversion Engineering (Graduate Course)
2. Refrigeration technology (Undergraduate Course)

Academic Jobs

1. Vice President of China Energy Technology Industry Association
2. The first batch experts in Green Energy Technology of the Ministry of Agriculture
3. Director of China Energy Environmental Technology Association
4. Member of the New Energy Professional Committee of the China Energy Society
5. Director of Thermal Insulation Engineering Professional Committee of Shanghai Energy Research Society
6. Member of the Working Group of Biomass Energy Experts of the National Standardization Committee
7. Member of Pyrolysis and Gasification Professional Committee of Biomass Energy Branch of China Association for Industrial Development

Research Field

1. Coal gasification and coal hydroliquefaction to produce oil.
2. Biomass gasification power generation and heating.
3. Catalytic conversion of carbon dioxide.
4. Chemical reactor numerical simulation and optimization.

Research results and selected published papers

Undertaking Projects

1. Characteristics of pyrolysis sequence of low rank coal in solvent and the mechanism of multi-stage hydrogenation conversion of oxygen-containing structures. National Natural Science Foundation of China, ¥700 thousand, Project leader;
2. Construction and action mechanism of iron/alkali-based catalytic system for liquefaction of lignite with high oxygen and water, National Natural Science Foundation of China, ¥900 thousand, Project leader;
3. Structural evolution and gasification characteristics of low activity liquid phase coke at high temperatures, National Natural Science Foundation of China, ¥290 thousand, Project leader;
4. Development of novel catalysts and key reactors for co-hydrogenation of coal and heavy oil, National Key Research and Development Program of China, ¥3.5 million, Project leader;
5. Effect of Gasification Ash on Mechanism and Catalytic Characteristics of Petroleum Coke Gasification, National 973 Program, ¥1.32 million, Project leader;
6. Development of scale-up biomass fixed bed gasifier, World Bank Global Environment Facility Project, ¥2 million, Project leader;
7. Development of Novel Multi-functional Sorbent for Mid-temperature Co-removal of CO₂ and H₂S, Royal Dutch Shell, €100 thousand, Project leader;
8. Biomass tar catalytic cracking industrial unit, World Bank Global Environment Facility Project, ¥1 million, Project leader;
9. Large-scale biomass fixed bed gasification technology, National 863 Program, ¥650 thousand, Project leader;
10. Research on biomass hydrothermal liquefaction technology, Dongfang Electric Technology project, ¥1.16 million, Project leader;
11. Large-scale biomass gasification technology, enterprise science and technology project, ¥1 million, Project leader;
12. Determination method of tar content in biomass gas, National standard formulation, Project leader;
13. Presided over more than 10 projects entrusted by enterprises.

Representative papers and patents

Published more than 100 academic papers, including more than 50 SCI papers, and 21 authorized and public patents.

1. Ash fusion characteristics and gasification activity during biomasses co-gasification process. RENEWABLE ENERGY. 2020.147(3):1584-1594.
2. Effects of thermal dissolution in different solvents on structural characteristics and pyrolysis behaviors of lignite. FUEL. 2019.241:550-557.
3. Study on the structure characteristics and gasification activity of residual carbon in biomass ashes obtained from different gasification technologies. FUEL. 2019.254.
4. Comparative study of the catalytic performances of Na₂CO₃ and γ -FeOOH in hydroliquefaction to propose a two-stage lignite catalytic liquefaction process. ENERGY & FUELS. 2019.33:10678-10686.
5. A Preliminary investigation of CO effects on lignite liquefaction process. FUEL. 2018.221:417-424.
6. Characteristics of Na₂CO₃-catalyzed water-gas shift reaction under coal liquefaction conditions. FUEL. 2018.232:639-644.
7. Regenerable magnesium-based sorbent for high-pressure and moderate-temperature CO₂ capture: Physicochemical structures and capture performances. FUEL. 2015.159:559-569.
8. Structure characteristics and gasification activity of residual carbon from entrained-flow coal gasification slag. FUEL. 2014.122:67-75.
9. Potassium-catalyzed steam gasification of petroleum coke for H₂ production: Reactivity, selectivity and gas release. FUEL PROCESSING TECHNOLOGY. 2011.92(3):523-530.
10. Physicochemical properties and structural evolutions of gas-phase carbonization chars at high temperatures. FUEL PROCESSING TECHNOLOGY. 2010.91(11):1662-1669.
11. Investigations on CS₂-soluble fractions and gasification reactivity of liquid-phase carbonization cokes. ENERGY & FUELS. 2010.24(10):5596-5601.
12. Differences in physical properties and CO₂ gasification reactivity between coal char and petroleum coke. PROCESS SAFETY AND ENVIRONMENTAL PROTECTION. 2009.87(B5):323-330.
13. Physico-chemical characteristics and mineral transformation behavior of ashes from crop straw. ENERGY & FUELS. 2009.23(10):5144-5150.
14. Participation in Coal Chemical Technology, Chemical Industry Press, Beijing, 2011.9