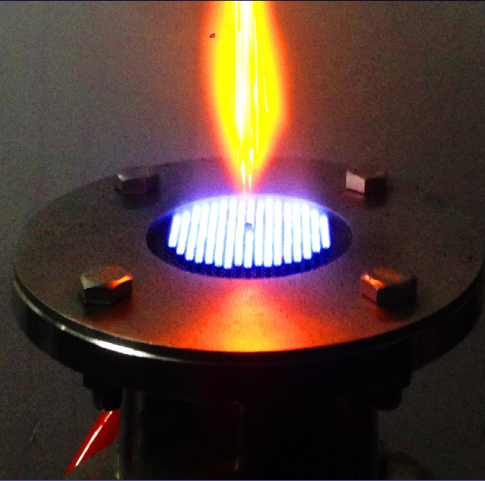




Institute of Thermal Energy Engineering



1. Description

The Institute of Thermal Energy Engineering focuses on the educational and research activities relevant to thermal energy conversions and environment protection for power plants and advanced energy systems. The discipline is rooted in thermodynamics, combustion theory, transport phenomena and quantum chemistry. Active research thrusts include fuel chemistry, clean power generation, pulverized coal combustion science and technology, oil shale combustion and retorting technologies, CFB combustion technologies, solid wastes and biomass energy utilization, coal-fired pollutants emission control, carbon capture utilization and storage, new energy system and energy savings. It has a creative faculty team of 6 professors, 6 associate professors and 1 assistant professor working in the institute.

2. Key Research Fields

- Fossil Fuels Combustion and Supercritical Coal-fired Power Generation
- Thermo-Conversion and Power Generation of Biomass and Oil Shale
- Clean Energy Conversion of Solid Wastes
- Coal-fired Pollutants Emission Control and Carbon Capture Utilization and Storage (CCUS)
- Automatic Control and Energy Saving of Thermodynamic Equipment and System

3. Labs, Centers and Groups

- National engineering laboratory for reducing emissions from coal combustion (Shanghai)
- R&D center of national demonstration base for comprehensive utilization of oil shale
- Mechanical industry - key laboratory of coal (gas) high efficiency combustion and ultra-low emission
- Joint laboratory for energy saving and environmental protection in industry boiler
- Joint laboratory for solid waste treatment and pollutant control
- SJTU-Thriver energy engineering technology research center

4. Instrumentation & Facilities

- Large-scale circulating fluidized bed combustion system
- Two stage coal/biomass gasifier
- Multi-functional thermal furnace test system of suspension firing
- Flat flame pulverized coal combustion facility and combustion laser diagnostics
- One dimensional combustion test furnace and integrated pollutant control facility of SO_x/NO_x/PM/Hg/CO₂
- 700 °C ultra supercritical coupled combustion and hydrodynamics facility
- Combustion mechanism facilities of fuels
- Gasmet DX-4000 FTIR analyzer
- MRU vario plus gas analyzer
- Q5000IR thermogravimetric analyzer
- Gas chromatography-mass spectrometer
- WJL-602 laser particle size analyzer
- Tristar II 3020M surface area pore analyzer
- Leitz II-A thermal microscope

5. Website

<http://tee.sjtu.edu.cn/>

6. Director

Director: Prof. FAN Weidong

Email: wdfan@sjtu.edu.cn

