

助/力/企/业/绿/色/发/展
一企一策 节能减排

SDS干法脱硫

钙基干法脱硫

CFB半干法脱硫

PNCR脱硝

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COMPANY INTRODUCTION 公司介绍

Company background and history

Jiangxi Bolaida Environmental Technology Co., Ltd. is a company specializing in industrial waste gas treatment under Zhong 'an Tiancheng (Hubei) Environmental Technology Co., LTD. It was established in May 2018 and is a national high-tech enterprise. The core members of the team have over 20 years of experience in environmental engineering governance in the chemical industry. They are dedicated to the research and development of flue gas treatment engineering technology and equipment manufacturing in the industrial field, and provide customized solutions for a wide range of customers. The company undertakes one-stop services including process consultation, scheme design, engineering construction, after-sales training, and upgrading and renovation of existing projects for waste gas treatment in new projects across various industries.

Main business scope: 1. Desulfurization, denitrification and dust removal, ultra-low emission treatment for industrial kilns, boilers, glass, non-ferrous smelting, coking, steel, cement and other industries; 2. De-whitening and acid mist removal in inorganic chemical industries such as hazardous waste incineration, titanium dioxide, spray drying, sulfuric acid, synthetic ammonia, and fertilizers; 3. Treatment of malodorous organic waste gas in industries such as fine chemicals, medical and pesticide chemicals, biological fermentation, sewage and sludge treatment, and three-waste incineration.....

The company adheres to the development philosophy of technological innovation, service priority and quality first, and is committed to: "Improving air quality, restoring fresh air to the earth and ensuring healthy breathing for humanity!" Strive unremittingly for the great cause.

Company advantages and characteristics



Technical strength:

21 years of experience
One joint laboratory



Investment and operation:

One investment
It operates 360 days a year



Engineering Case:

Over 30 industries
Over 500 engineering cases



Project effect:

Meet the standard in one attempt
Ten years of worry-free
environmental protection



20

Serve the
country

3000+

Customer
inquiry

100%

Compliance
guarantee

>100

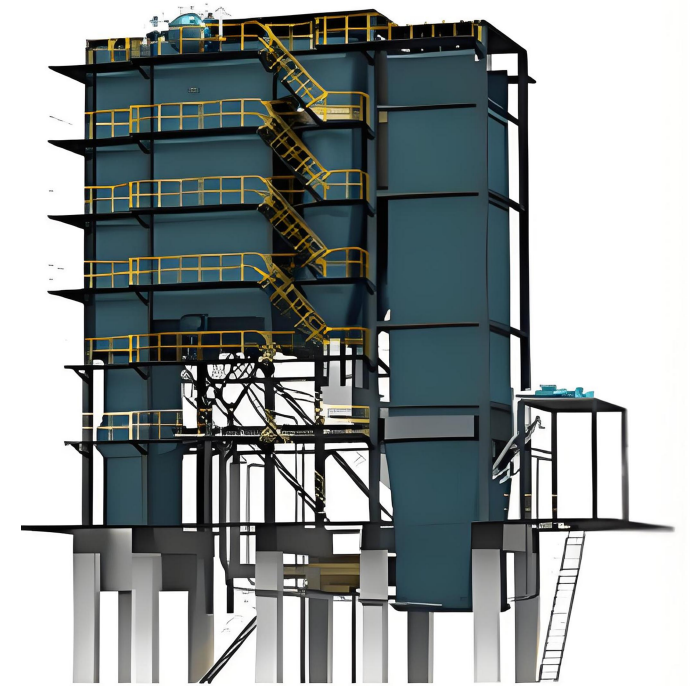
Annual number
of sets

Product Overview 产品概述

Product description and introduction:

CFB desulfurization tower:

CFB-FGD (Integrated Flue Gas Circulating Fluidized Bed Desulfurization and Dust Removal Technology) is a highly efficient and environmentally friendly device focusing on industrial flue gas purification. It uses a circulating fluidized bed as the core mass transfer carrier to achieve integrated treatment of desulfurization, dust removal, and the removal of harmful gases (such as SO_3 , chlorides, fluorides, etc.), and belongs to the category of dry/semi-dry desulfurization technology. Its core advantage lies in balancing ultra-high purification efficiency and economy. It can be adapted to various industrial kilns, boilers and other flue gas treatment scenarios, easily meeting the current strict ultra-low emission requirements. It is the preferred solution to replace traditional wet desulfurization and solve the problems of site limitations and environmental compliance.



**Ultra-low
emissions**

**Low
consumption
and energy
saving**

**Safe and
environmen
tally friendly**

**High-
efficiency
desulfurizati
on**

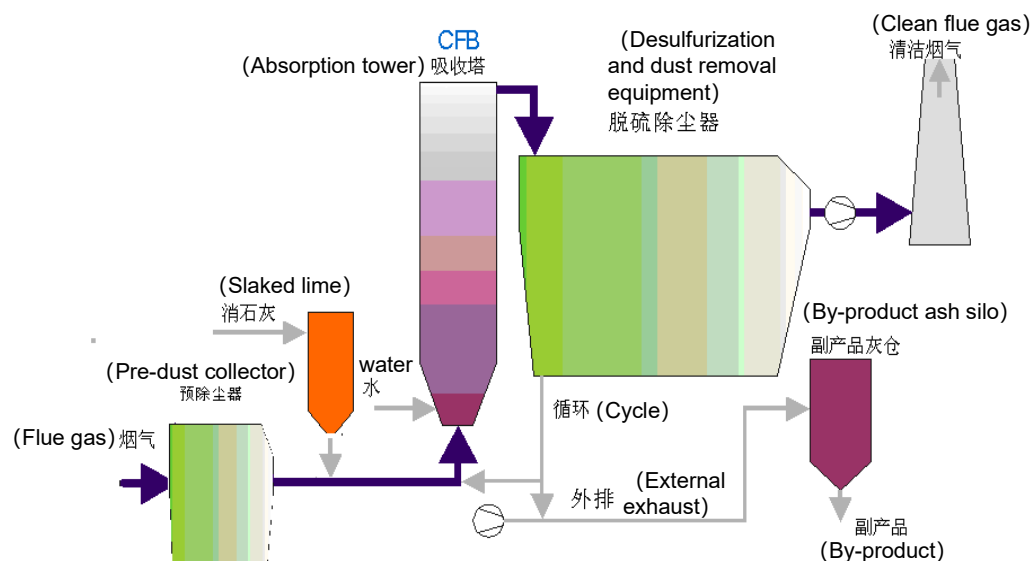
Product Description and Introduction

产品说明和介绍

Process flow and principle:

Typical system composition:

A complete CFB-FGD system includes: **pre-electrostatic precipitator system, absorbent preparation and supply system, absorption tower system, material recirculation system, process water system, desulfurization and dust removal system, and instrument control system.**



Working principle

01. Flue gas Introduction and construction of reaction temperature zone:

The flue gas discharged from the boiler air preheater at 120 to 180°C is initially dust-removed by the pre-dust collector and then enters the absorption tower through the Venturi tube from the bottom of the tower.

02. Enhancement of gas-solid Reactions in Circulating Fluidized beds

The flue gas is accelerated through the Venturi tube and then enters the fluidized bed. The gas velocity of 4 to 6m/s causes intense turbulent mixing of the gas and solid phases. The flocs formed during the upward movement continuously return, discombine and then rise again. The gas-solid sliding speed is dozens of times that of a single particle. The structure at the top of the desulfurization tower further promotes the return of flocs, increases the particle density of the bed layer, and makes the Ca/S ratio inside the bed exceed 50. Lay the foundation for the full reaction of SO_2 .

The intense and turbulent particles continuously collide, constantly renewing the surface of $\text{Ca}(\text{OH})_2$ particles. Meanwhile, the desulfurization ash is recycled and reused, significantly enhancing the utilization rate of the absorbent. During this process, $\text{Ca}(\text{OH})_2$ reacts with SO_2 , SO_3 , HCl , HF , etc., to produce by-products such as $\text{CaSO}_3 \cdot 1/2\text{H}_2\text{O}$, $\text{CaSO}_4 \cdot 1/2\text{H}_2\text{O}$, and CaF_2 . When the flue gas rises, some particles are carried out of the tower with the flue gas, while others flow back into the bed due to their own weight. This not only increases the particle concentration in the bed but also prolongs the reaction time of the absorbent, further enhancing the mass and heat transfer as well as the reaction effect.

03. Gas-solid Separation and Material Circulation

The purified dust-laden flue gas is discharged laterally from the top of the absorption tower and enters the post-desulfurization dust collector (bag filter) to complete the gas-solid separation. The clean flue gas after separation is discharged into the chimney by the induced draft fan.

The solid particles (including unreacted absorbents and desulfurization ash) captured by the dust collector are returned to the absorption tower through the desulfurization ash recirculation system and continue to participate in the desulfurization reaction. A small amount of excess desulfurization ash and slag is discharged through the silo pump equipment, achieving efficient utilization and reasonable disposal of materials.



Product Description and Introduction

产品说明和介绍

Typical system composition:

1. Desulfurization system:

The purified dust-laden flue gas is discharged laterally from the top of the desulfurization tower, then turns to enter the post-desulfurization dust collector for gas-solid separation, and is finally discharged into the chimney through the induced draft fan. The solid particles captured by the dust collector are returned to the desulfurization tower through the desulfurization ash recirculation system under the dust collector to continue participating in the reaction, and this cycle repeats. The excess small amount of desulfurization ash and slag is discharged through the silo pump equipment.

2. Flue gas system:

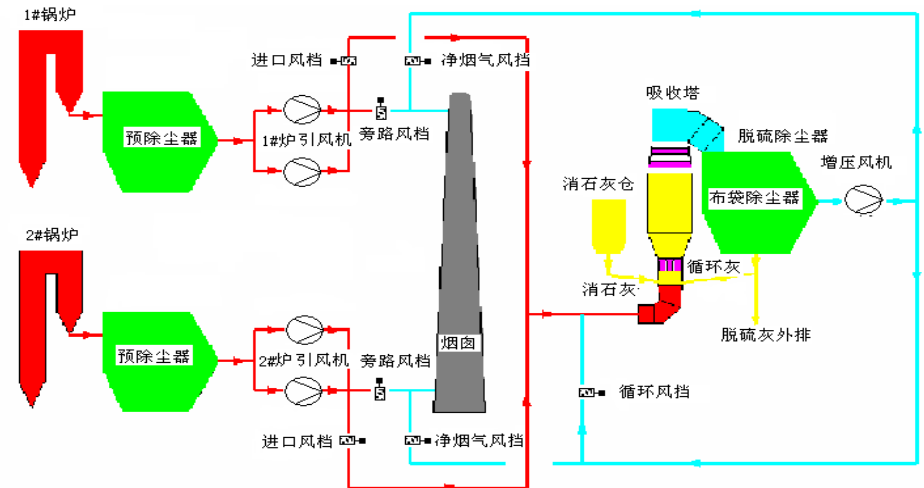
The flue gas coming out of the air preheater of the boiler passes through the pre-dust collector, enters the absorption tower from the bottom for desulfurization, and then enters the desulfurization and dust removal equipment at the top of the absorption tower for dust removal. The flue gas after coming out is discharged to the chimney by the desulfurization induced draft fan. The SO₂ concentration after desulfurization and dust removal is below 35mg/Nm³, and the dust concentration is below 10mg/Nm³.

3. Absorption tower system:

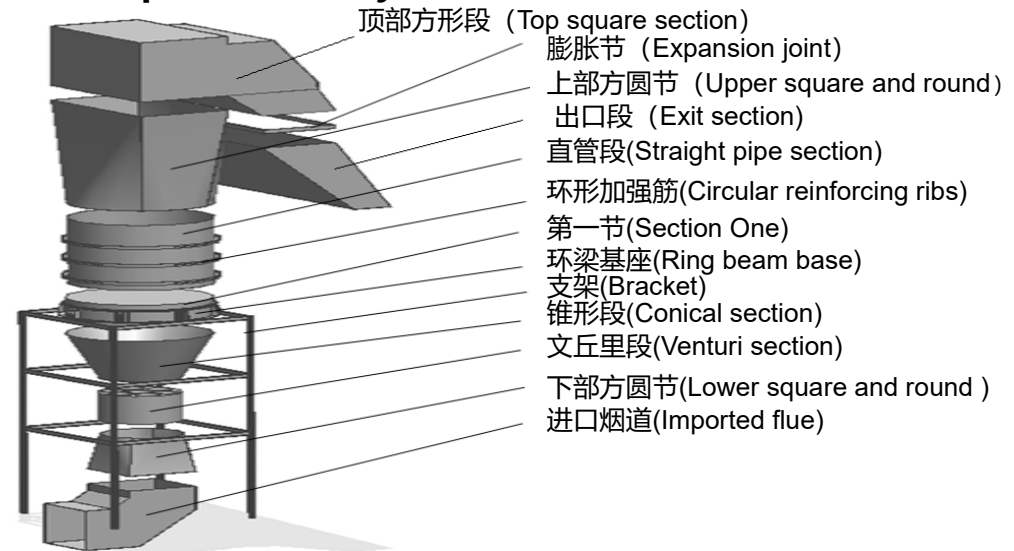
The absorption tower is an empty tower structure with a single Venturi tube, mainly composed of the inlet section, the lower square section, the feeding section, the Venturi section, the conical section, the straight tube section, the upper square section, the top square section and the outlet section (see the figure below). All are welded with ordinary steel plates (among which the Venturi entrance is made of specially designed wear-resistant steel, ensuring a service life of more than 10 years and being easy to replace).

To establish a good fluidized bed and prevent ash blockage, no internal supports are set at the upward airflow points inside the absorption tower, and there are no moving parts at all inside the tower. As the desulfurization system always operates at a dew point temperature of 20°C above the flue gas, coupled with the intense collision and turbulence inside the absorption tower, SO₃ can be basically removed completely. No anti-corrosion lining is required inside the absorption tower.

Schematic diagram of the composition of the desulfurization system:



Schematic diagram of the composition of the absorption tower system:



Product features and advantages 产品特性和优势

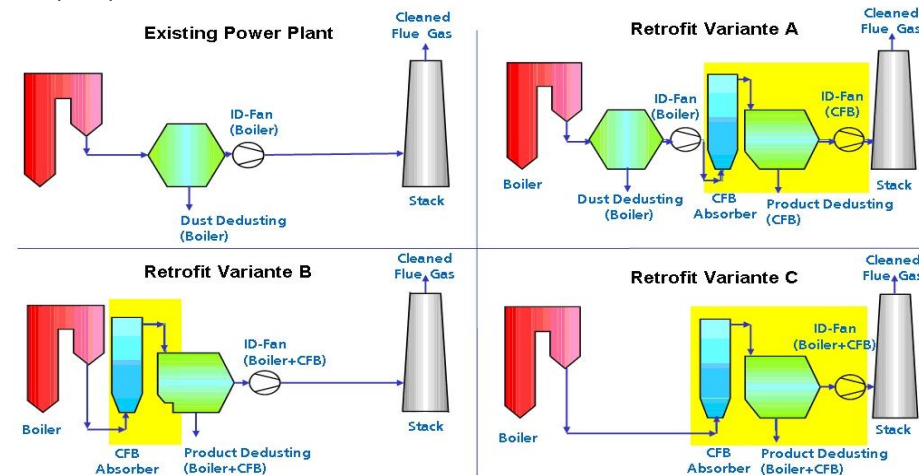
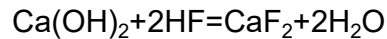
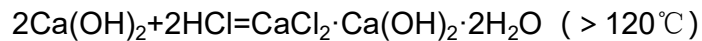
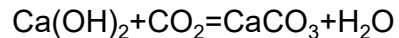
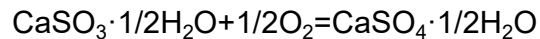
Product features:

It features high desulfurization efficiency, multi-pollutant collaborative treatment, low investment, modular design, energy conservation and consumption reduction, and strong adaptability to load and coal quality.

Process features:

Key chemical equation:

In the circulating fluidized bed desulfurization tower, $\text{Ca}(\text{OH})_2$ undergoes chemical reactions with SO_2 and almost all of SO_3 , HCl , HF , etc. in the flue gas. The main chemical reaction equations are as follows:



Product advantages:

High desulfurization efficiency:

✓ When the calcium-sulfur ratio is 1.1 to 1.3, the desulfurization efficiency can reach over 95%, which is the highest among all current dry and semi-dry flue gas desulfurization processes and can be compared with wet processes.

Co-treatment of multiple pollutants

✓ It can effectively remove harmful gases such as SO_3 , chlorides and fluorides, and its removal efficiency is much higher than that of the wet process, reaching 95% to 99%. Therefore, there is no corrosion to the reaction tower and its downstream flue ducts, chimneys and other equipment, and flue gas reheaters are not required.

Low investment, modular design, energy conservation and consumption reduction

✓ The engineering investment cost, operating cost and desulfurization cost are relatively low, ranging from 50% to 70% of those of the wet process. The process flow is simple, with few system devices, accounting for 40% to 50% of the wet process. Moreover, there are no rotating parts, which enhances the reliability of the system and reduces maintenance and repair costs.

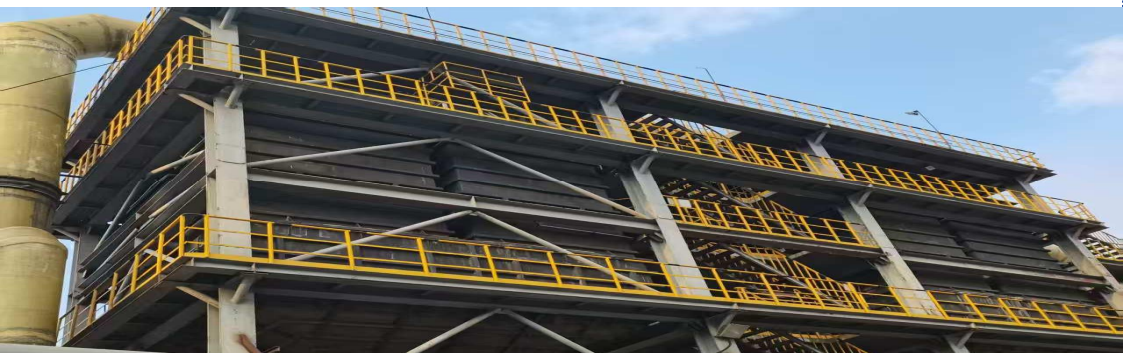
✓ It occupies a small area, 30% to 40% of that of the wet process, and the system layout is flexible, making it very suitable for the renovation of existing units and the construction of new units with limited space.

Strong compatibility between load and coal quality:

✓ Flexible load adaptation: It has good tracking performance for boiler load changes, is easy to start and stop, and can be put into use at a low load of 30%. It can not only meet the stable operation requirements of basic load units but also adapt to the frequent load changes of peak shaving units, with a wide range of applicable scenarios.

✓ It has a wide range of coal quality compatibility: It can handle flue gas with a sulfur content of 0.3% to 6% from coal. Especially in the application of medium and low sulfur coal (sulfur content < 2%), its economic performance is significantly better than that of the wet process, reducing the operating costs in different coal quality scenarios.

Application Case 应用案例



Typical application scenarios of CFB desulfurization:

The CFB (Circulating Fluidized Bed) semi-dry desulfurization process is applicable to flue gas desulfurization in coal-fired boilers, cogeneration boilers, centralized heating boilers, sintering machines, pelletizing furnaces, coking furnaces, glass furnaces, ceramic kilns, etc.

Product parameters:

Parameter	Detailed introduction
Efficiency	Efficiency $\geq 95\%$ SO _x removal
Material	Fiberglass reinforced plastic/PP/stainless steel/carbon steel
Customized	Supports size, color and layout
Application	Coal-fired boilers, kilns, sintering machines



Service and Support:

Customized design: Tailor-made solutions based on the composition of flue gas and operating conditions.

One-stop service: Covering preliminary investigation, scheme design, equipment production, installation/commissioning, after-sales training, etc.

With 21 years of experience in desulfurization and denitrification, we offer tailored energy conservation and emission reduction strategies for each enterprise.

节能减排·超低排放



Company qualification 公司资质



证书号第19014357号



实用新型专利证书

实用新型名称：一种高分子脱硝装置

发 明 人：袁玉明张少波

专 利 号：ZL 2022 2 3484954.3

专 利 申 请 日：2022年12月26日

专 利 权 人：江西博莱达环境科技有限公司

地 址：330000 江西省南昌市高新技术产业开发区创新二路艾溪村工业园内3号楼2楼202室

授 权 公 告 日：2023年05月16日 授权公告号：CN 219024228 U

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其他事项参见续页

证书号第17872386号



实用新型专利证书

实用新型名称：一种循环床干法脱硫喷枪装置

发 明 人：袁玉明;张少波

专 利 号：ZL 2022 2 1889383.9

专 利 申 请 日：2022 年 07 月 20 日

专 利 权 人：江西博莱达环境科技有限公司

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授 权 公 告 日：2022 年 11 月 25 日 授权公告号：CN 217895675 U

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其他事项参见续页

证书号第18643647号



实用新型专利证书

实用新型名称：一种工业生产用脱硫装置

发 明 人：袁玉明;张少波

专 利 号：ZL 2022 2 3220390.2

专 利 申 请 日：2022年12月01日

专 利 权 人：江西博莱达环境科技有限公司

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授 权 公 告 日：2023年03月21日 授权公告号：CN 218653780 U

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其他事项参见续页





江西博莱达环境科技有限公司
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THANK YOU

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