



NUO VISTA

Crude oil refining equipment/
waste oil regeneration equipment

原油精练设备 / 废油再生设备

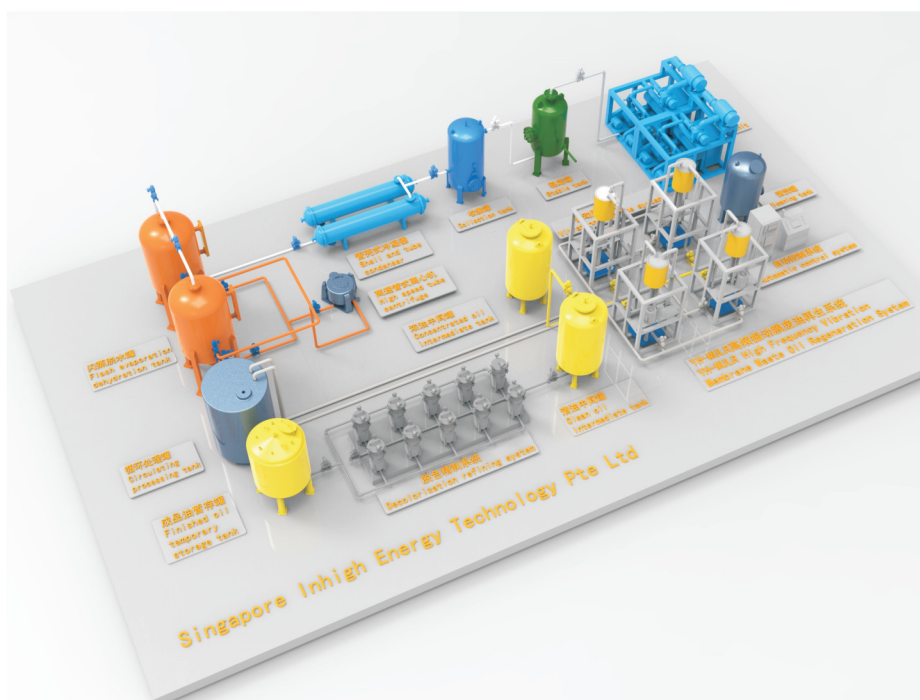


High frequency vibrating membrane refining and regeneration system 高频振动膜精制再生系统

Brief Introduction 产品简介

ZN-MULR is a new generation revolutionary membrane separation technology that utilizes high-frequency vibration membrane separation equipment to break through the bottleneck of traditional membrane filtration technology, which is prone to clogging and difficult to produce continuously. By applying high-frequency vibration to membrane components, strong shear forces are generated on the membrane surface, making it difficult for impurities in oil to precipitate onto the membrane surface.

ZN-MULR是新一代革命性膜分离技术，借助高频振动膜分离设备，突破传统膜过滤技术容易堵塞、难以连续生产的瓶颈，通过在膜组件上施加高频振动，在膜表面产生强大的剪切力，使油中的杂质成分难以沉淀到膜表面。



Application Scope 应用范围

Can be applied to the regeneration of various waste lubricating oils such as crude oil refining, waste internal combustion engine oil, waste emulsified oil, waste hydraulic oil, waste vacuum pump oil, waste turbine oil, waste compressor oil, waste transformer oil, etc.

可用于原油精制、废内燃机油、废乳化油、废液压油、废真空泵油、废汽轮机油、废压缩机油、废变压器油等各类废润滑油再生。

Product Features 产品特点

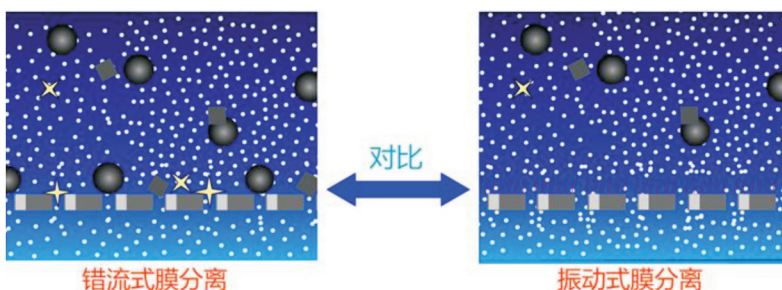
The anti clogging function of ZN-MULR has been improved and researched for many years, and it is the world's leader in using thin films for waste oil regeneration. The production continuity can maintain a stable flux for 24 hours per week. After shutdown, the flux can be fully restored. ZN-MULR is designed in a modular form, occupying only about 100 square meters. With relatively simple and convenient supporting equipment, it can be increased at any time according to the processing capacity without affecting the overall design.

ZN-MULR 的抗堵塞功能是经多年改进研究所得，是世界上能使用薄膜在废油再生的领先者。生产连续性可达24 小时一周维持稳定通量。停产后可完全恢复通量。ZN-MULR 是以组合形式设计，占地只约100平方米，加上配套设备比较简单和平宜，可随时按处理量增加而不影响整体设计。

Working Principle 工作原理

Unlike traditional membrane filtration technology, which is prone to clogging and difficult to produce continuously, high-frequency vibration is applied to the membrane components to generate strong shear forces on the membrane surface, making it difficult for impurities in waste oil to precipitate on the membrane surface, effectively solving the problem of membrane clogging.

有别于传统膜过滤技术容易堵塞、难以连续生产的瓶颈，通过在膜组件上施加高频振动，在膜表面产生强大的剪切力，使废油中的杂质成分难以沉淀到膜表面，从而有效地解决了膜堵塞问题。



Products Case 产品案例



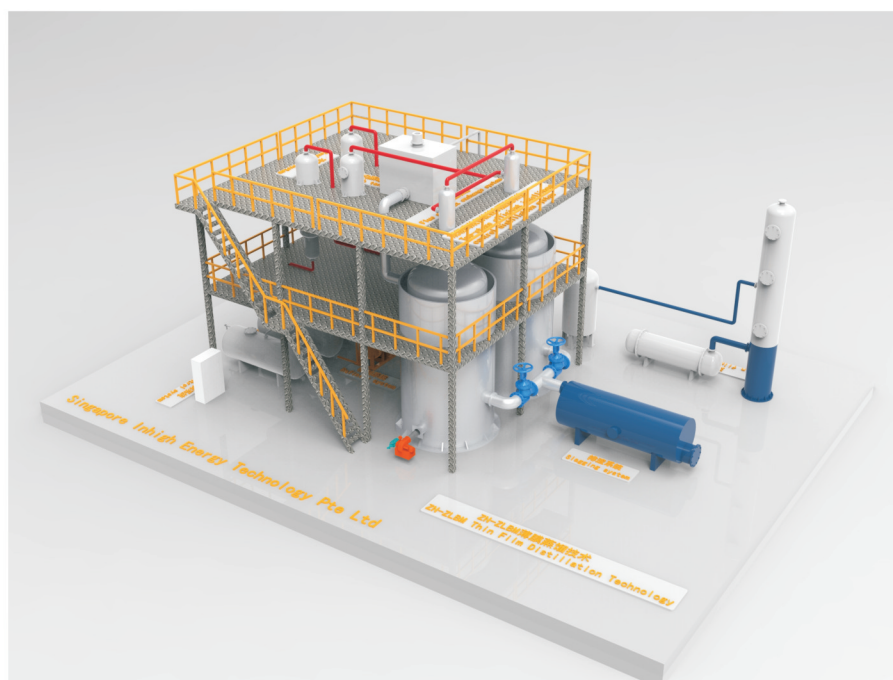
ZN-ZLBM Thin Film Distillation Technology

ZN—ZLBM薄膜蒸馏技术

Brief Introduction 产品简介

ZN-ZLBM membrane distillation is a fluid equipment that uses high-speed distributors to produce thin films. Form a dynamic film of 3–5mm on the crude oil/waste oil. By utilizing fluid dynamics, coking can be largely prevented. In addition, under the membrane distillation system, the oil film can perform heat exchange more effectively, making the heat exchanged per unit area and the flow rate per unit area more uniform, reducing heat transfer resistance, and allowing the internal liquid and heat to come into contact more fully, greatly improving production efficiency.

ZN—ZLBM膜蒸馏是一种利用高速分布器产生薄膜的流体设备。让原油/废油形成3–5mm的动态薄膜。运用流体动力学，可以在很大程度上防止结焦。另外，在膜蒸馏系统下，油膜可以更有效地进行热交换，使单位面积交换的热量和单位面积的流量更加均匀，降低传热阻力，使内部的液体和热量接触更充分,大大提高生产效率。



Application Scope 应用范围

Can be applied to the regeneration of various waste lubricating oils such as crude oil refining, waste internal combustion engine oil, waste emulsified oil, waste hydraulic oil, waste vacuum pump oil, waste turbine oil, waste compressor oil, waste transformer oil, etc.

可用于原油精制、废内燃机油、废乳化油、废液压油、废真空泵油、废汽轮机油、废压缩机油、废变压器油等各类废润滑油再生。

Product Features 产品特点

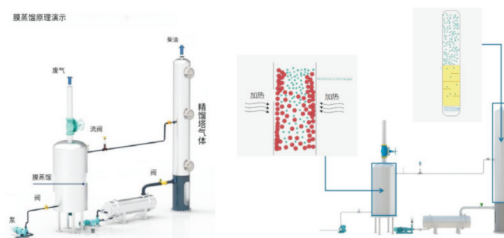
The ZN-ZLBM membrane distillation system is an upgraded product of traditional distillation technology, and the unique catalytic distillation system is the result of research and experimentation by our professional technical team. By using the company's unique catalytic distillation tower combined with flash evaporation technology, the molecular bonds of oil are broken into short chains, forming high-quality finished oil.

ZN-ZLBM膜蒸馏系统是传统蒸馏技术的升级产品，独特的催化蒸馏系统，是我们专业技术团队研究和实验的成果。采用公司独特的催化蒸馏塔结合闪蒸技术，将油的分子键打断成短链，形成高品质的成品油。

Working Principle 工作原理

Membrane distillation is a fluid equipment that uses high-speed distributors to produce thin films. Form a dynamic film of 3–5mm on the crude oil/waste oil. By utilizing fluid dynamics, coking can be largely prevented. In addition, under the membrane distillation system, the oil film can perform heat exchange more effectively, making the heat exchanged per unit area and the flow rate per unit area more uniform, reducing heat transfer resistance, and allowing the internal liquid and heat to come into contact more fully. Greatly improve production efficiency.

膜蒸馏是一种利用高速分布器产生薄膜的流体设备。让原油/废油形成3–5mm的动态薄膜。运用流体动力学，可以在很大程度上防止结焦。另外，在膜蒸馏系统下，油膜可以更有效地进行热交换，使单位面积交换的热量和单位面积的流量更加均匀，降低传热阻力，使内部的液体和热量接触更充分。大大提高生产效率。



Products Case 产品案例



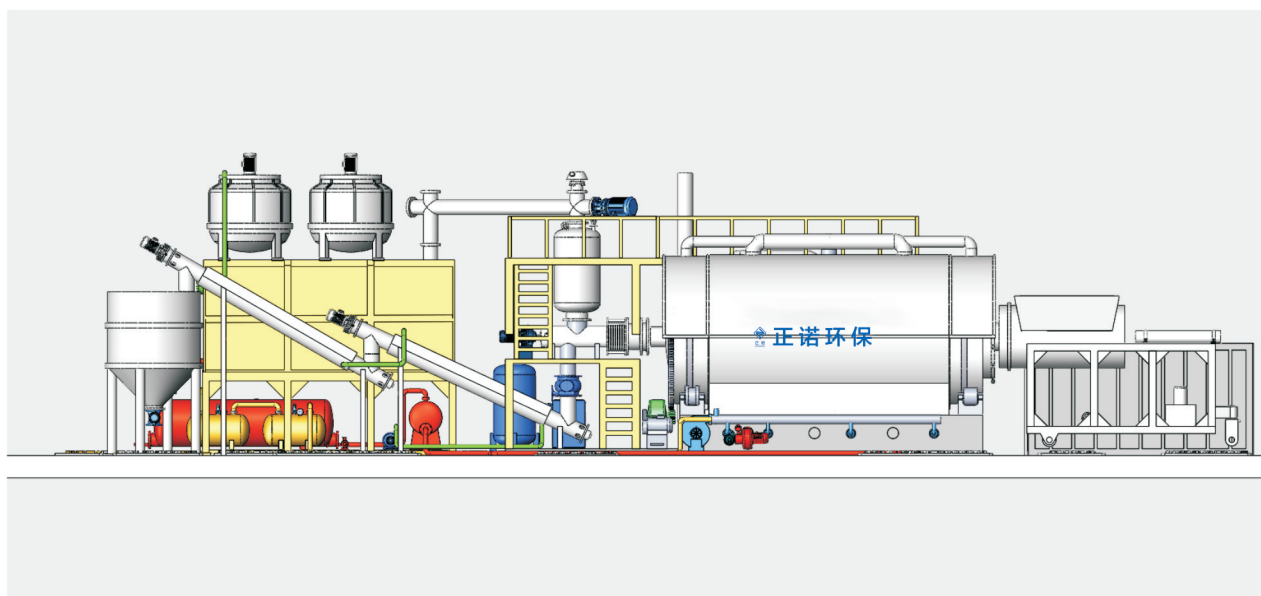
ZN-JXLJ Intermittent Cracking Waste Oil Regeneration Equipment

ZN—JXLJ间歇式裂解废油再生设备

Brief Introduction 产品简介

Intermittent cracking waste oil regeneration equipment refers to the process in which high molecular weight compounds with unsaturated bonds in the main chain are broken under anaerobic or anaerobic conditions and appropriate temperatures. The products are mainly monomers, dimers, and fragments, which are then polymerized into various olefins to remove volatile substances and form solid carbon. The products mainly include storable energy such as fuel oil and cracking gas, as well as carbon black and steel wire. The composition of each product varies with the pyrolysis method, pyrolysis temperature, and other factors.

间歇式裂解废油再生设备指在无氧或缺氧工况及适当的温度下，主链具有不饱和键的高分子断裂，产物主要是单体、二聚物和碎片，生成物再聚合为多种烯烃，从而脱出挥发性物质并形成固体炭的过程，其产物主要是燃料油、裂解气等可贮存性能源和炭黑、钢丝，各产物成分随热解方式、热解温度等变化而不同。



Application Scope 应用范围

Can be applied to industries such as sludge, waste tires, rubber, waste plastics, oil-based rock debris, waste acrylic, medical solid waste, etc

Optional heat sources: coal, firewood, natural gas, diesel, biomass pellets, etc. (for initial heating use)

可应用于油泥、废轮胎、橡胶、废塑料、油基岩屑、废亚克力、医疗固废等行业。

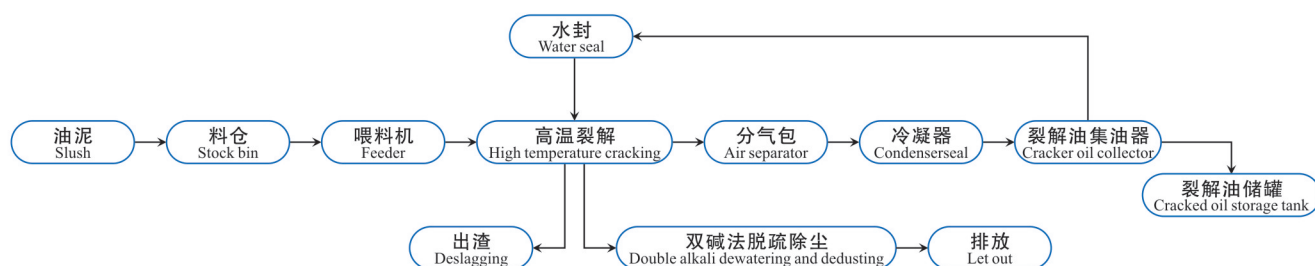
可选热源：煤、木柴、天然气、柴油、生物质颗粒等（初次加热使用）

Product Features 产品特点

Due to the 360 degree rotating structure of the cracking furnace, this unique structure can evenly heat the entire cracking furnace body and maintain a balanced temperature throughout the furnace. Not only can it increase the service life of the cracking furnace, but it can also improve the cracking speed of the raw materials, making the cracking speed of the raw materials far exceed the cracking speed of the fixed vertical furnace and fixed horizontal furnace currently used in China. The inner wall of the cracking furnace has a unique design, which allows for continuous scraping during operation to prevent coking on the inner wall and achieve non-stop coke cleaning.

由于裂解炉是360度旋转结构，这种独特的结构，可使整个裂解炉体均匀受热，整个炉体温度均衡。不但可以增加裂解炉寿命，而且可以提高原料的裂解速度，使原料的裂解速度远远的超过了国内目前所使用的固定立炉和固定卧炉的裂解速度。裂解炉内壁带有独特的设计，裂解炉工作时可不断的进行刮壁，防止内壁结焦，可以实现不停炉清焦。

Working Principle 工作原理



产品案例 Products Case



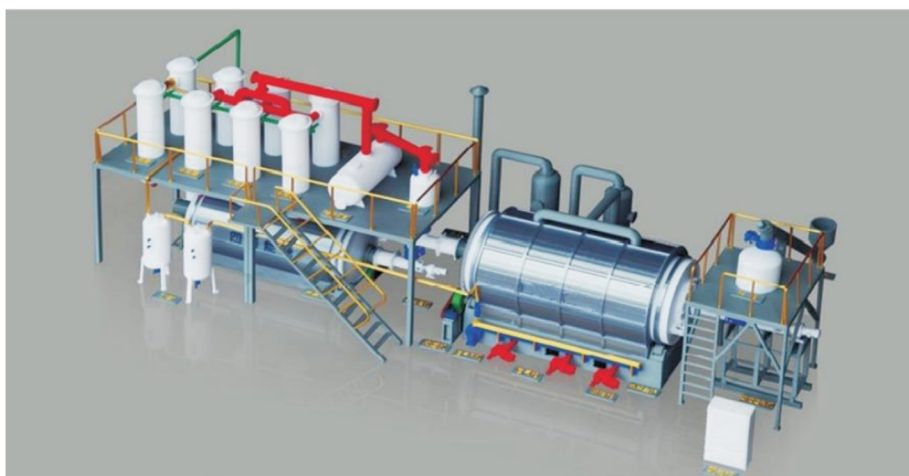
ZN-LXLJ Continuous Cracking Waste Oil Regeneration Equipment

ZN-LXLJ连续式裂解废油再生设备

Brief Introduction 产品简介

The continuous cracking refining equipment adopts our company's unique continuous cracking process to process raw materials such as sludge, tires, and plastics. Impurities larger than 5cm in the raw materials need to be screened and transported to the continuous cracking refining equipment through a two-stage spiral seal. Through direct injection radiation heating cracking, the oil and gas mixture in the material is distilled out. The oil and gas mixture is cut into heavy fractions using the equipment's built-in two-stage residual carbon cutting, and then liquefied by a condenser. The liquefied part of the oil and gas mixture is condensed into mixed oil, and the non liquefied part is combustible gas, which is sent to a heating furnace to replace fuel heating. The continuous cracking refining equipment is easy to operate and has high processing efficiency. It is a necessary professional equipment dedicated to protecting the environment, resource regeneration, energy conservation and emission reduction.

连续式裂解炼油设备采用我公司独创的连续式裂解工艺实现对油泥、轮胎、塑料等原料的处理，需要筛选原料内的大于5cm的杂质，通过二级螺旋密封输送至连续式裂解炼油设备内，通过直喷辐射式加温裂解，馏出物料内的油气混合物，油气混合物使用设备内置的二级残炭切割切出重组分后通过冷凝器对油气混合物进行液化，可液化部分油气混合物冷凝为混合油，不可液化部分为可燃气，送至加热炉内用于代替燃油加热使用。连续式裂解炼油设备操作简单方便，处理效率高，是致力于保护环境，资源再生，节能减排的必用专业设备。



Application Scope 应用范围

Can be applied to industries such as sludge, waste tires, rubber, waste plastics, oil-based rock debris, waste acrylic, medical solid waste, etc.

Optional heat sources: coal, firewood, natural gas, diesel, biomass pellets, etc. (for initial heating use)

可应用于油泥、废轮胎、橡胶、废塑料、油基岩屑、废亚克力、医疗固废等行业。

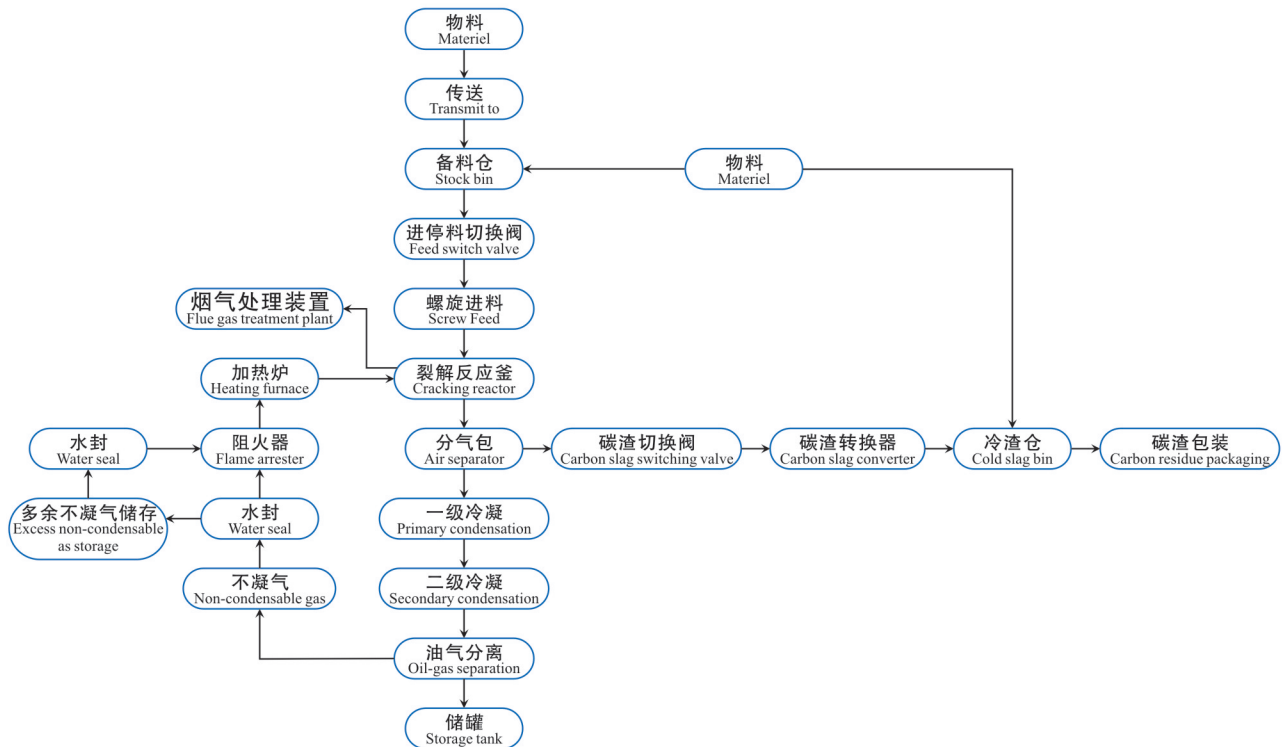
可选热源：煤、木柴、天然气、柴油、生物质颗粒等(初次加热使用)

Product Features 产品特点

The continuous cracking treatment equipment can complete production in 24 hours, with a maximum processing capacity of astonishing 30T/24-hour. The development of a sealed spiral feeding machine can feed 15T in 50 minutes, and the unique rear gas phase rapid slag removal system can complete slag removal in 100 minutes, greatly reducing production time and improving utilization efficiency.

连续式裂解处理设备24小时即可完成生产，最大处理量达到惊人的30T/24H, 研发密封螺旋进料机50分钟就可进料15T, 研发独有的后方气相路快速出渣系统100分钟即可出渣完毕，大大缩短生产时间，提高利用效率。

Working Principle 工作原理



Products Case 产品案例

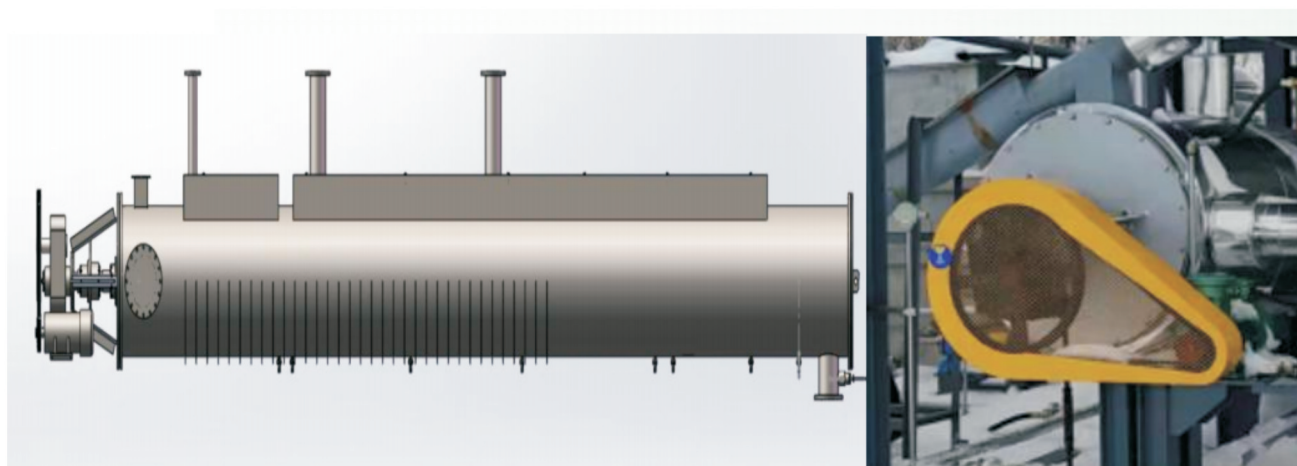


ZN-DRLZ low-temperature thermal desorption plasma oily sludge regeneration system ZN—DRLZ低温热脱附等离子含油污泥再生系统

Brief Introduction 产品简介

The low-temperature thermal desorption plasma oily sludge treatment technology converts the remaining heavy oil (gum, asphaltene) in the raw material into combustible gas under the catalytic action of plasma in the process of oil recovery, reducing production energy. The equipment adopts thin-layer drying principle, with high thermal conductivity efficiency, thereby improving the crude oil recovery rate.

低温热脱附-等离子含油污泥处理技术在油回收的过程中, 将原料中的剩余重质油(胶质体、沥青质) 在等离子体催化自作用下转变为可燃气为设备提供燃料, 降低生产能设备采用薄层干化原理, 导热效率高, 从而提高原油回收率。



Application Scope 应用范围

Oily sludge 含油污泥

Product Features 产品特点

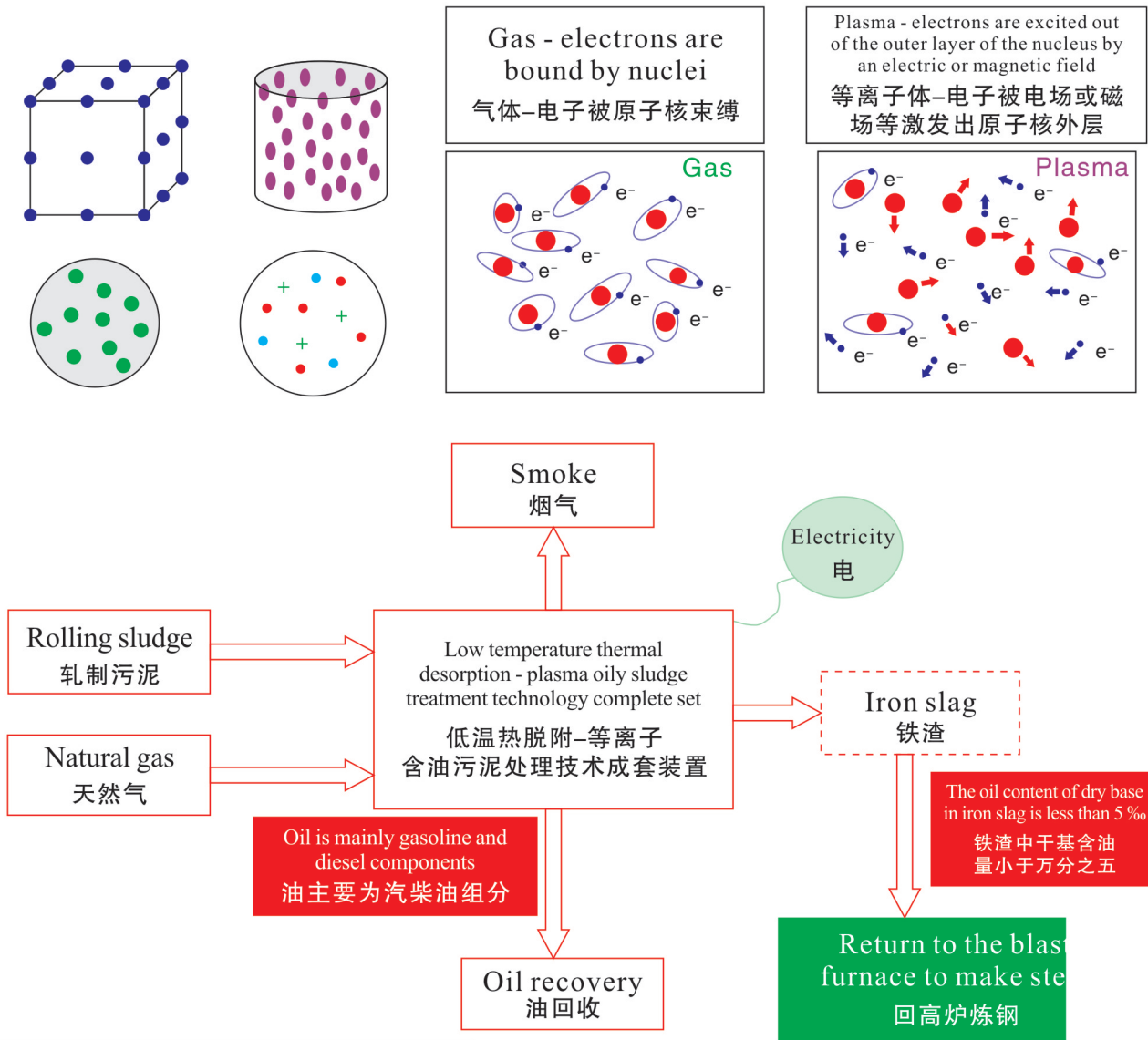
Plasma is composed of active particles such as high-energy electrons and ions that are thermodynamically stable in an excited state. It has self catalytic properties and can destroy all chemical bonds, causing matter to return to an atomic state and re synthesize stable harmless substances. High energy density: With a high energy density ($104 \sim 105 \text{ W} \cdot \text{cm}^{-2}$), the heating rate is greatly accelerated, and the reaction rate is significantly improved; High temperature: The center temperature reaches 20000°C .

等离子体由热力学稳定处于激发态的高能电子和离子态等活性粒子组成, 具有自催化性, 可摧毁一切化学键, 使物质回归成原子状态, 重新化合成稳定的无害物质。

高能量密度: 能量密度高($104 \sim 105 \text{ W} \cdot \text{cm}^{-2}$), 受热速度大大加快反应速度提升明显;

高温: 中心温度达到 20000°C 。

Working Principle 工作原理



Products Case 产品案例



ZN-JZXT Waste Oil Regeneration and Refining System

ZN—JZXT废油再生精制系统

Refining System – Solvent Extraction 精炼系统——溶剂萃取



Including: oil-solvent mixing separation system, solvent recovery system, base oil refining system.

Extract or separate non-ideal components such as colloids, asphaltene, sulfur, nitrogen, oxygen compounds, etc from base oil to optimize oil quality.

包括：油溶混合分离系统、溶剂回收系统、基础油精制系统。

从基础油中提取或分离胶体、沥青质、硫、氮、氧化合物等非理想组分，优化油品质量。

04 Solvent Extraction Equipment

04 溶剂萃取装置

01

Centrifugal Mixing and Separation System

离心混合分离系统

The base oil and solvent are mixed here for mass transfer and centrifugal separation to separate non ideal components from the base oil.

基础油与溶剂在这里混合，进行传质和离心分离，将非理想组分从基础油中分离出来。

02

Solvent Recovery System

溶剂回收系统

Purify used solvents, which can be reused multiple times to reduce consumption and cost.

净化使用过的溶剂，可多次重复使用，以降低消耗和成本。

03

Base Oil Refining System

基础油精制系统

Purify the base oil to separate the 1% solvent contained in base oil.

将基础油净化，分离出基础油中所含的1%溶剂。

04

Vacuum System

真空系统

The equipment operates under negative pressure to reduce boiling point and save heating consumption.

设备再负压状态下操作，降低沸点，节省加热消耗。

Refining System – Decolorized Sand 精炼系统——脱色砂

Principle of decolorization sand refining: The reason for the darker color in clear oil is that it contains some polar substances (such as nitrogen, sulfur, oxygen, etc.), and the surface of decolorization sand has very rich nanoscale micropores that can absorb these polar substances.

For the processed clear oil, the color is still relatively large, and it can be further decolorized and refined by decolorizing sand. The decolorized sand is made of 100 mesh filtered sand sieved from natural mineral kaolin. The decolorized and refined base oil has a wider range of uses.

脱色砂精制原理：清油中颜色较深的原因是含有一些极性物质(比如含氮、硫、氧等元素)，而脱色砂表面具有非常丰富的纳米级的微孔，可以对这些极性物质吸附。

针对加工后的清油，色度还比较大，可以通过脱色砂进一步脱色精制，脱色砂采用天然矿物高岭土经筛分后的100目过滤砂，脱色精制后的基础油，用途也更加广泛。



Products Case 产品案例



Domestic on-site display 国内部分现场展示



International on-site display

国外部分现场展示 >>>>

