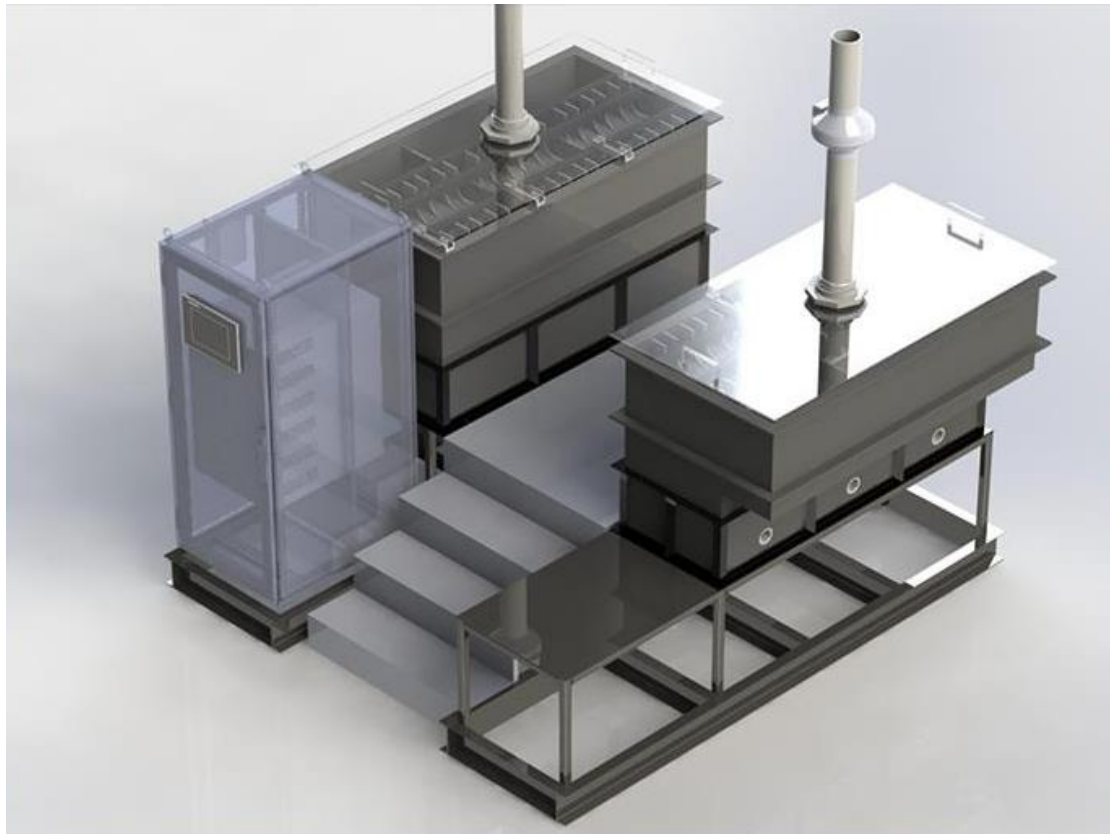


Electroflocculation Device

The electrocoagulation method is a treatment process combining complex adsorption with redox, acid-base neutralization and air-floating separation.



Introduction

The electrocoagulation method is a treatment process combining complex adsorption with redox, acid-base neutralization and air-floating separation. The alloy metal such as aluminum and iron is used as the main electrode, and an electrochemical reaction is generated by applying a pulse high voltage to generate electric energy. Conversion into chemical energy, at the expense of the anode metal electrode to produce a metal cationic flocculant, separation of pollutants from the water by agglomeration, flotation, reduction and oxidative decomposition, to achieve a technology to purify the water.

Principle description

Electro-flocculation mainly decomposes and separates the four main functions of electrochemistry: electrolytic oxidation, electrolytic reduction, electrolytic flocculation, and electrolysis flotation.



Electro-flocculation treatment of pollutants and removal effects

The electrode plates of the electro-flocculation equipment can be selected according to different materials to produce strong flocculation, strong oxidation, strong reduction, strong air floatation, etc., in order to achieve the best treatment effect, often used iron, aluminum, titanium, graphite, lead dioxide and so on. Each material has its own application area. The design of electroflocculation equipment and the selection of electrode plates are determined through extensive research and development and extensive engineering practice.

Positioning in the sewage treatment process

1. Electrocoagulation technology can be pre-treated before the biochemical system. Electroflocculation breaks down long chains and chains in sewage by using high voltage, breaking large molecules into small molecules to improve biodegradability, reduce the load of subsequent biochemical systems and improve the stability of biochemical treatment.
2. Electro-flocculation technology can also be pre-treated before being placed in the reclaimed water system. Electro-flocculation acts through the high-voltage electric field, breaking the stability of the colloid in the water and precipitating the colloid by flocculation, thereby preventing the subsequent water reuse system due to the presence of colloid in the water, improving the recovery rate and extension of the reclaimed water reuse system. The service life of the membrane tube.



Technical characteristics

1. Low investment costs
- 2, low operating costs
3. Low maintenance and repair costs
4. No need to use any chemicals
5. Small footprint
6. Solving the problem of traditional electrolytic plate passivation by pulse current
7. Simple operation, high degree of automation
8. Equipment processing time is short, processing efficiency is high
9. Adapt to a wide range of wastewater, can handle a variety of pollutants at the same time
10. Equipment processing produces less sludge, high sludge compaction

Equipment characteristics

It mainly decomposes and separates the four main functions of electrochemistry: electrolytic oxidation, electrolytic reduction, Electro flocculation, and electrolysis flotation.

1. *Electrolytic oxidation*

Oxidation during electrolysis can be divided into two categories. One type is direct oxidation, that is, the pollutants lose oxidation directly at the anode and oxidize; the other is indirect oxidation, using an anion with a lower electrode potential in the solution, such as OH⁻, Cl⁻, which loses electrons at the anode to generate new ones. Strong oxidant actives such as [O], [OH], Cl₂, etc. These active materials are used to oxidize and decompose BOD₅, COD, NH₃-N and the like in water.

2. *Electrolytic reduction*

The reduction in the electrolysis process can be divided into two categories. One type is direct reduction, that is, contaminants are directly reduced at the cathode to obtain electrons. The other type is indirect reduction, in which the cations in the contaminants first obtain electrons at the cathode, so that the electrons in the electrolyte at the cathode get electrons directly reduced to low-valent cations or metal precipitates.

3. *Electrolytic flocculation*

Soluble anodes such as iron, aluminum, etc., after high-voltage pulsed direct current, the anode loses electrons, forming metal cations Fe²⁺, Al³⁺, combined with OH⁻ in solution to form highly active flocculating groups, which have strong adsorption capacity and excellent flocculation effect. In the ordinary flocculant, the adsorption and bridging of the waste water can be used to adsorb and remove the pollutants in the wastewater.

4. *Electrolysis float*

Electrolytic flotation is the electrolysis of wastewater. The ionization of water molecules produces H⁺ and OH⁻, and is directed to migrate under the electric field, and hydrogen and oxygen are separated on the surface of the cathode plate and the anode plate, respectively. The newly formed bubbles are very small in diameter, the hydrogen bubbles are about 10 to 30 μm, the oxygen bubbles are about 20 to 60 μm, the diameter of the bubbles (100 to 150 μm) generated when the pressurized dissolved air is floated, and the bubbles generated during mechanical stirring. The diameter (800 ~ 1000μm) should be small. From this, it can be seen that the bubble generated by the electrolysis has higher ability to trap the impurity particles than the latter two, and the dispersion of the bubble is high, and the carrier adheres to the suspended solid in the water, so that the contaminant can be easily removed. Electrolytic air flotation can remove both hydrophobic pollutants in wastewater and hydrophilic pollutants in wastewater.

Technical Data

Item	Process Quantity	Size	Remark
1	1t/h	2×1×2.2m	Dimensions vary depending on water quality
2	2t/h	2×1.5×2.4m	Dimensions vary depending on water quality
3	5t/h	3×2×3m	Dimensions vary depending on water quality
4	10t/h	3×3×3m	Dimensions vary depending on water quality
5	15t/h	3.5×3×3m	Dimensions vary depending on water quality
6	20t/h	5×3×3m	Dimensions vary depending on water quality