

## Application of IFAS Technology In Chemical Wastewater Treatment



<b>Case study</b>	Chemical Wastewater
<b>Start Up</b>	March 2016
<b>Capacity</b>	10,000 m <sup>3</sup> /d
<b>Location</b>	Qidong China

### Overview

Sembcorp Industries is a leading energy, water, marine and urban development group operating across five continents worldwide. With facilities of around 11,000 megawatts of gross power capacity and close to 9 million cubic metres of water per day in operation and under development, Sembcorp is a trusted provider of essential energy and water solutions to both industrial and municipal customers. It is also a world leader in offshore and marine engineering, as well as an established brand name in urban development. In China, Sembcorp utilities spread 12 provinces, they had built tens of sewage treatment plants in chemical industrial park, provide wastewater treatment service for the chemical companies.

Sembcorp Qidong Water Company is the BOT project in China, provide a complete set of sewage treatment solutions and value-added services for oil, chemical and pharmaceutical companies in the industrial park. Advanced sewage treatment technology and equipment be adopted in this project, after it be completed, Urban water environment had been greatly improved and it also protect the local river water quality and ecological balance.



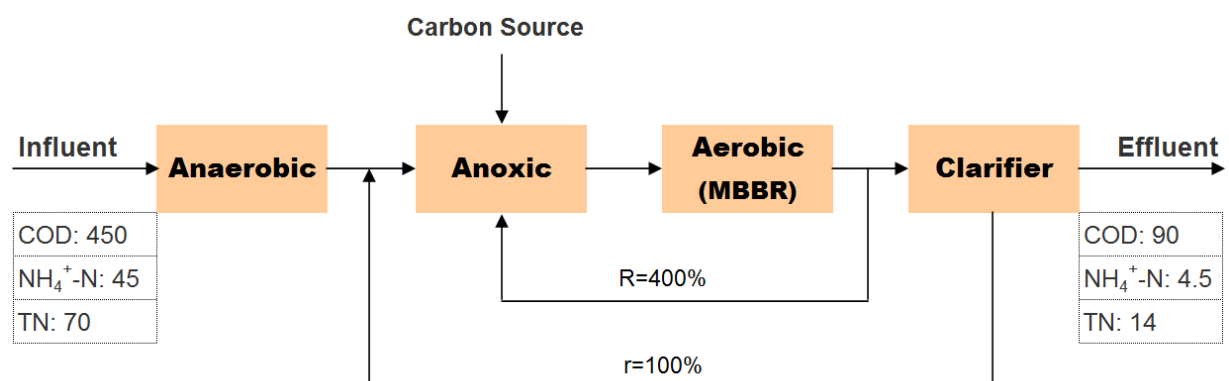
## Challenge

Design capacity is 10,000,m3/d ,the influent and effluent parameters of biological treatment as below:

Project	Unit	Influent	Effluent
COD	mg/L	450	90
BOD	mg/L	330	16.5
TN	mg/L	70	14
NH <sub>4</sub> -N	mg/L	45	4.5
TP	mg/L	5.5	3.3
SS	mg/L	360	30
pH		6~9	6~9
Temperature	°C	10~40	--

## Solution

The main process of the sewage treatment plant adopts the technology which combine the biological treatment and ozone chemical oxidation, the process flow diagram shows as below:



## BioCell Media

Media provides two important functions: The protected internal surface area allows biofilm to attach while supporting either the heterotroph / autotroph bacteria. Second, the millions of pieces of media act as a shearing device on the coarse air bubble to maximize oxygen transfer.

## Aeration Grid



A stainless steel coarse bubble aeration system is employed to mix the suspended media evenly throughout the reactor while providing the mixing energy required to slough old biofilm from the internal surface area of the media and maintain the dissolved oxygen required to support the biological treatment process.

## Results

After 2 months of commissioning and operation, the effluent could promote the criterial, the sewage treatment plant entered the commercial operation successfully.

