

**JIANGSU JIUWU HI-TECH Co.,Ltd**

No. 9, Yuansi Road, Pukou District, Nanjing City  
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**JIANGSU JIUWU HI-TECH Co.,Ltd**

**High Anti-fouling  
PVDF Hollow Fiber Ultrafiltration Membrane**

*Strength from Expertness Quality Achieving Excellence*



## Company

JIANGSU JIUWU HI-TECH Co.,Ltd is a high-tech enterprise located in No. 9, Yuansi Road, Pukou District, Nanjing City—membrane science and technology industrial park and specialized in the research and development, manufacturing and marketing of polymer organic membranes and related membrane modules.

Relying on the National Engineering Research Center for Special Separation Membrane, company takes the national strategic emerging industries—high performance membrane materials as a research field, and builds the membrane material structure and performance testing platform, pilot-scale system, engineering experimental platform for developing organic membrane industry and key technologies, core technologies and generic technologies in the process of related industry development. Company develops internationally advanced organic membrane products including hollow fiber membranes, flat-plat membranes and modules that have adopted the ISO9001 quality management system certification. Company service covers: chemical, papermaking, electric power, petrochemical, food, pharmaceuticals, environmental and so on where the strong R&D group has a doctorate degree of four people, including one overseas talent and two members who have overseas experiences.

Company inherits the service objective "strength from expertness, quality achieving excellence", provide quality products and high-tech service for customers sincerely with advanced technologies, large- scale and standardized production models, rich experiences in practice, and creates a modern enterprise in membrane industry with strong technological accumulation and advanced management philosophy.

## Leadership care



General Secretary Xi Jinping researched the zero liquid discharge of papermaking waste water and engineering situation



Wen Jiabao made an inspection



Liang Baohua visited the laboratory



Xu Ming were present and gave instructions Ding Xiemin were present and gave instructions





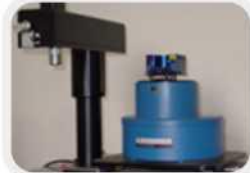
## Complete organic membrane large analytical instruments



X-ray diffractometer



Scanning electron microscope



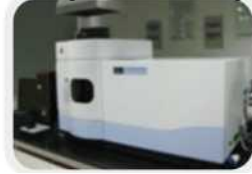
Atomic force microscope



Transmission electron microscope



Total organic carbon analyzer



ICP



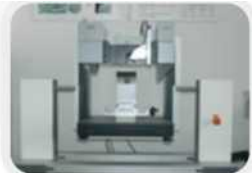
Thermal analyzer



Mercury injection apparatus



Nuclear magnetic resonance spectrometer



Contact angle measurement



Atomic Absorption Spectrometer



Liquid chromatograph (UHPLC)

## Series of macro-performance testing and research devices



Gas bubble press device



Cutting molecular weight device



Permeation evaporator device



Membrane coupling process device



Porous and dense membranes separation performance evaluation device



Metal membrane system for hydrogen production

## Manufacturing Base

Through the transformation of technology industrialization and product performance improvement, company has realized the large-scale and continuous production of high anti-pollution PVDF hollow fiber membrane and inner lining MBR membranes whose capacities are up to 1.2 million square meters and 0.5million square meters respectively.



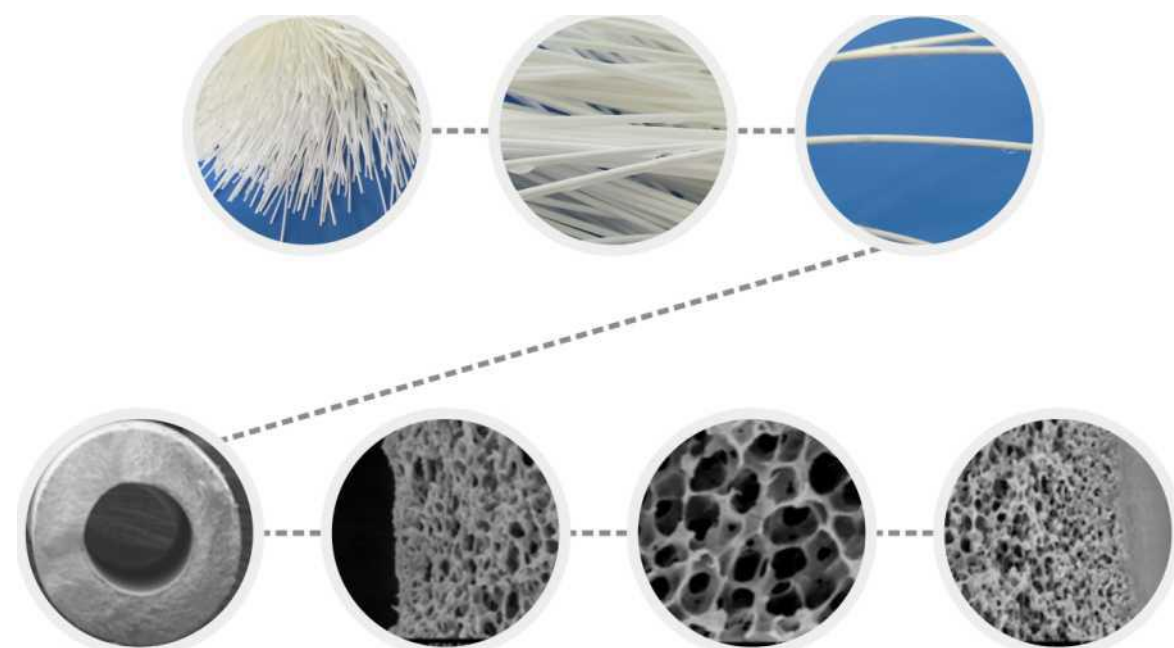
# Features & Advantages

Our products have features of hole undersize, narrow pore size distribution and permanent hydrophilicity which are widely used in wastewater treatment, water reuse and water purification and have high anti-pollution performance in practical application.

Our products are produced by innovative membrane production process and have features of hole undersize, narrow pore size distribution, permanent hydrophilicity and high anti-pollution performance whose performances reached the international high-end brand level.

In the long-term use process, the products can maintain high water volume without constant chemical cleaning and have high strength and longer service life connected with the spiderweb double-continuous structure.

The products could maintain higher water flux and have advantages of lower operating pressure differential, good stability, good outlet water quality and high-cost performance in the wastewater system where the CODCr exceeds 150mg/L.



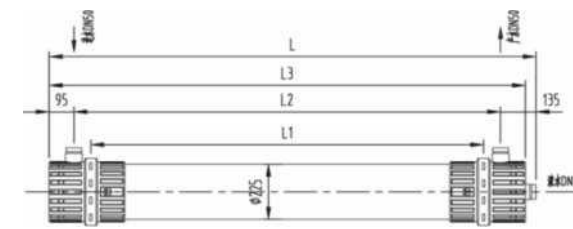
## Membrane module features :

The outlet end of the membrane module is equipped with a ring collector and aimed at homogeneous water flow distribution, complete pro and con wash, high filtration efficiency.

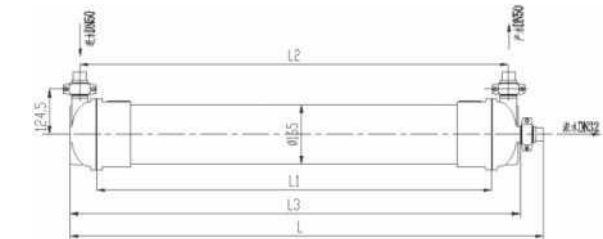
The outlet center of the module is the central water collecting pipe which is connected with ring catch basin through six rectangular channels. The channels are radially uniform distribution and membrane fibers are divided into six sections with equal area.

The water inlet of the membrane module is provided with a diversion hole to guide the water evenly into the filtration system to reduce the fouling.

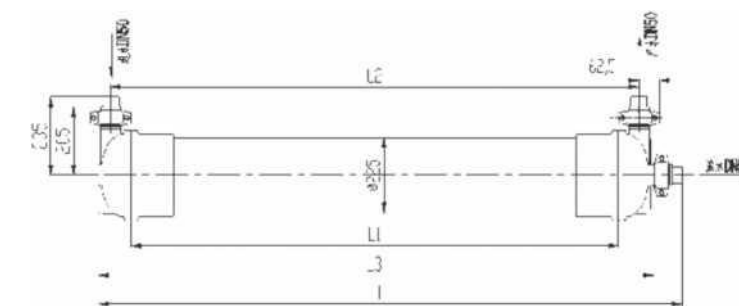
### Type-A ▼



### Type-B ▼



Type	L1	L2	L3	L
UPORE™ F25-0860-A	1500	1630	1710	1800
UPORE™ F25-0860-B	1500	1630	1820	1860



Type	L1	L2	L3	L
UPORE™ F25-0660	1500	1610	1710	1860
UPORE™ F25-0680	2000	2110	2210	2360
UPORE™ F25-0880	2000	2130	2320	2360



## Technical parameters of membrane modules

Product Types		0880	0860-A	0860-B	0680	0660
<b>Product Specification</b>	Size /mm	0225x2360	0225x1800	0225x1860	0165x2360	0165x1860
	Length /mm	2000	1500	1500	2000	1500
	Total surface area /m <sup>2</sup>	75	50	50	44	33
	Wet weight /kg	65	50	53	47	35
	Size of inlet port	DN50	DN50	DN50	DN50	DN50
	Size of the outlet port	DN50	DN50	DN50	DN50	DN50
	Size of strong water port	DN50	DN50	DN50	DN32	DN32
<b>Product Explanation</b>	Material	PVDF				
	Shell materials	UPVC				
	Seal adhesive material	Epoxy resin				
	Operation mode	External pressure				
	Preserving type	Wet				
<b>Applicable Conditions</b>	Range of filtration flux /LMH	40-120				
	Operation mode	Full flow filtration & Cross-flow filtration				
	Range of tolerance pH	2-11				
	Range of the temperature	0-40 °C				
	Inlet turbidity(max) /NTU	100				
	Inlet pressure(max) / Mpa	0.60				
	Transmembrane pressure (max) /MPa	0.20				
	Back wash pressure (max) /MPa	0.25				
	Tolerance of NaClO concentration(max) /mg/L	2000				
<b>Performance</b>	Turbidity of water production /NTU	<0.2				
	Suspend matter /mg/L	<0.1				

**Comment:** The above parameters are all reference values, and the operation control parameters of the membrane modules should be set according to the actual situation.

## Application area



# Typical engineering case

**Project:** papermaking wastewater zero discharge project

**Construction scale:** 40000m<sup>3</sup> / d, recovery rate of 99%

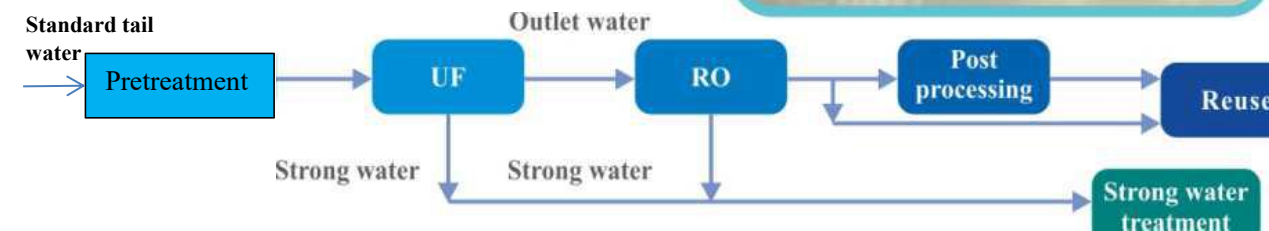
**Process:** Pretreatment — UF — RO — Post processing

**Operation time:** 2013

**Location:** Jiangsu Nantong Economic Development Zone  
**project:** Papermaking tail water reuse project



## Process



## Results

The project has saved 50% of the investment and operating costs than the sea outfall project. Membrane technology of Nanjing Tech University was selected as the top ten breakthrough technological achievements and arranged to participate in the China's 12th five-year science and technology innovation achievement exhibition which highly appreciated by the national leaders and featured in the science and technology daily.

# Typical engineering case

**Construction scale:** 17000m<sup>3</sup>d

(phase I: 11000m<sup>3</sup>/d, phase II: 6000m<sup>3</sup>/d)

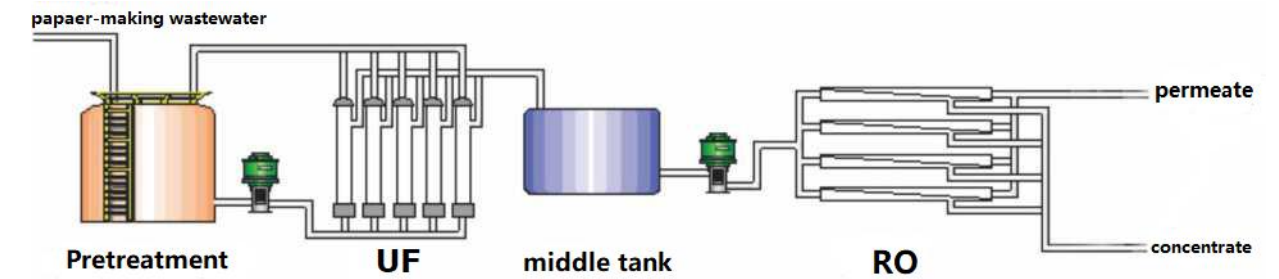
**Process:** Pretreatment — UF — RO

**Operation time:** 2015

**Location:** Jiangsu (APP gold Huasheng Paper Co., Ltd)



## Process



## Results

The project was completed by the end of June 2015 whose total processing scale and recycling water are about 17000 m<sup>3</sup>/d and 13000 m<sup>3</sup>/d. So far the system operates stably.



# Typical engineering case

**Project:** Chemical wastewater treatment and reuse project

**Construction scale:** 1440m<sup>3</sup>/d, Water reuse rate of 99%

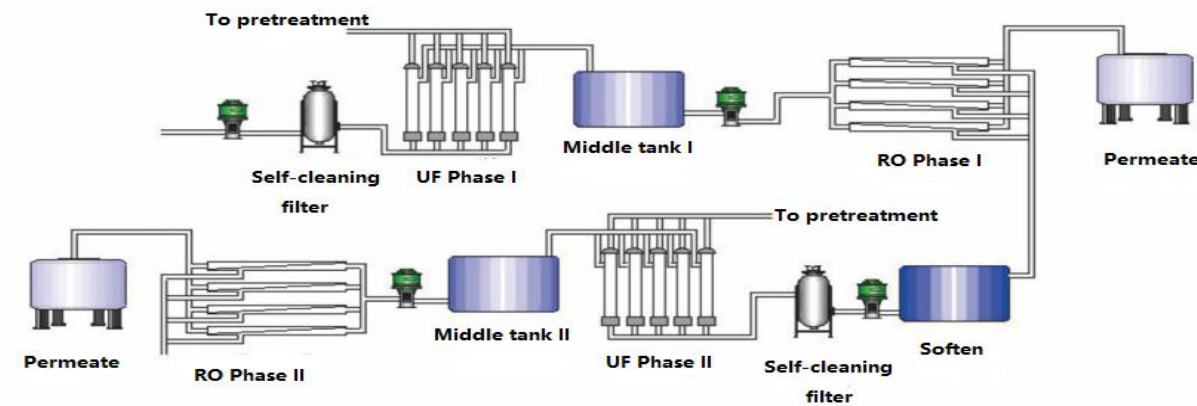
**Process:** Pretreatment — UF — RO

**Operation time:** 2014

**Location:** Jiangsu Sanjili Chemical Co., Ltd



## Process



## Results

In this project, multi-stage double membrane integrated process is used for chemical tail water treatment and recycling. Outlet water is used as a resupply of cooling water and wastewater back rate is up to 90 which realized the purpose of recycling waste water resources. In the project, the used ultrafiltration membranes are the PVDF and external pressure type hollow fiber membranes of our company. The turbidity of outlet water is less than 0.1NTU and so far the system operates stably.

# Typical engineering case

**Project:** Thermal Power Plant Water Treatment Project

**Construction scale:** 4800m<sup>3</sup>/d

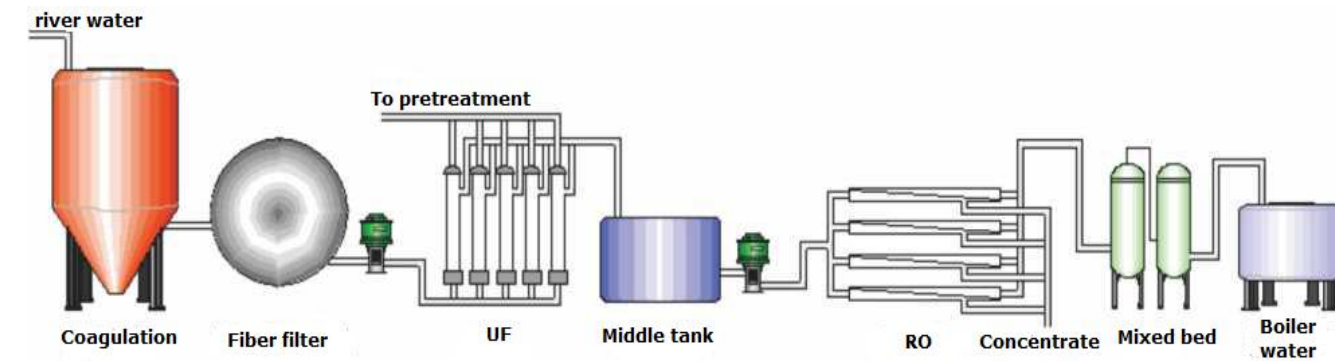
**Process:** Pretreatment — UF — RO

**Operation time:** 2014

**Location:** Jiangsu Jia Yi Thermal Power Co., Ltd



## Process



## Results

In this project, the ultrafiltration system uses my company's external pressure type PVDF hollow fiber membrane whose water production is 200m<sup>3</sup>/h and water recovery rate is more than 95. During the running of the project, membrane flux is greater than 60 LMH, the range of outlet water turbidity is between 0.02 and 0.05 NTU, the operating pressure is under 0.1 MPa. So far the system operates stably.

# Typical engineering case

**Project:** Coal Mine Wastewater Treatment Project

**Construction scale:** 6000m<sup>3</sup>/d

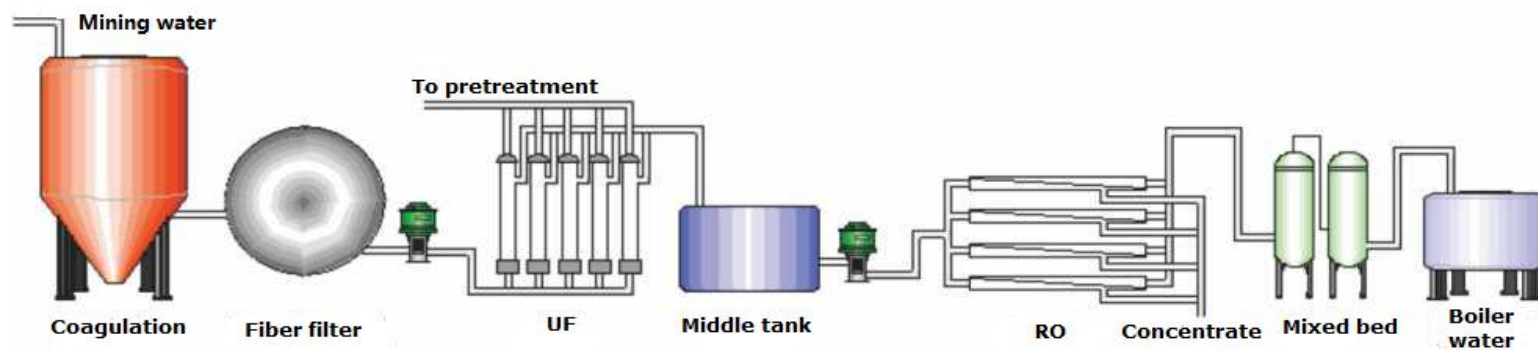
**Process:** Pretreatment — UF — RO — Mixed bed

**Operation time:** 2012

**Location:** Shanxi Datong Coal Mine Group Co., Ltd



## Process



## Results

This project is a supporting project of Shanxi Datong Coal Mine Project and adopts double membrane integration process. Reverse osmosis water production is up to the drinking water standard and treated with ion exchange resin further to be used as boiler feed water. In the project, two sets of ultrafiltration membrane reactors are used as pretreatment process for reverse osmosis. So far the system operates stably.

# Other cases

No.	Project name	Construction scale	Main process	Operation time
1	Papermaking wastewater treatment project (Nine Dragons Paper Co., Ltd)	25000m <sup>3</sup> /d	Pretreatment-UF-RO	2016
2	Desalination water treatment project (Xinyue Chemical Co., Ltd)	8000m <sup>3</sup> /d	Pretreatment-UF-RO	2016
3	High pollution surface water purification project (Xinyue Chemical Co., Ltd)	12000m <sup>3</sup> /d	Pretreatment-UF	2013
4	Pharmaceutical Wastewater Treatment Project (Hulunbeier North Pharmaceutical Co., Ltd)	18000m <sup>3</sup> /d	Pretreatment-UF-RO	2016



Papermaking wastewater treatment project



Desalination water treatment project



High pollution surface water purification project



Pharmaceutical Wastewater Treatment Project