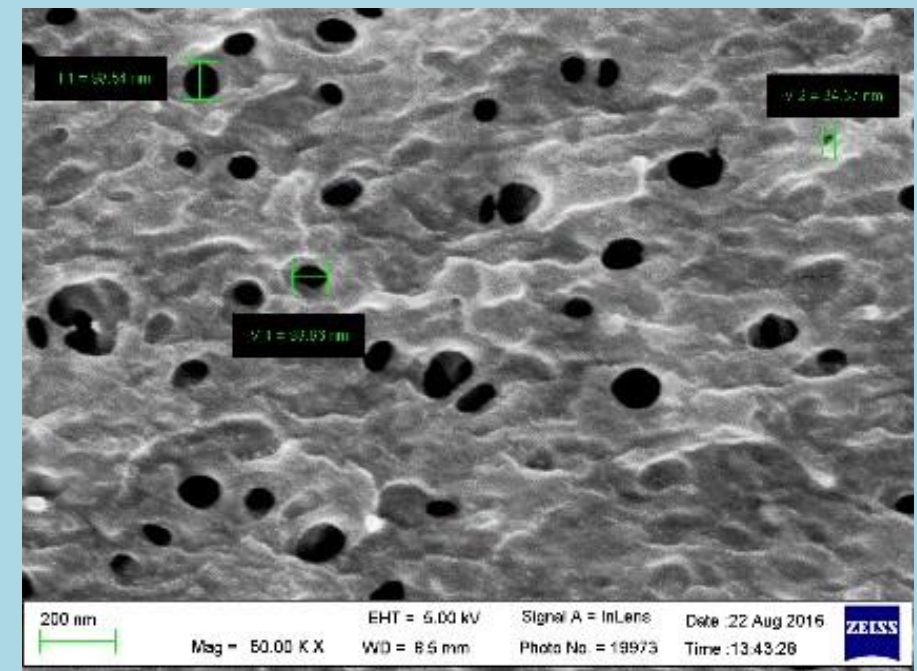


# ULTRAFILTRATION MEMBRANE

The Ultrafiltration membrane developed by ITRI has **low energy consumption, large water flux and high rejection rate**. Even without the use of electricity and only relies on gravitational force (under a height difference of 5 meters), it can still produce **water flux greater than 1000 LMH**.



Uniform Pore Distribution



R2R Moulding

## Comparison to Other Brand Product

Parameters	Mean Pore (µm)	Max Pore (µm)	Flux (L/m <sup>2</sup> *h)	MWCO (%)
<b>ITRI</b>	0.1154	0.693	341.11	87.6
<b>Other</b>	0.1542	0.977	190.66	85

## Applications

Wastewater Treatment  
 Drinking Water

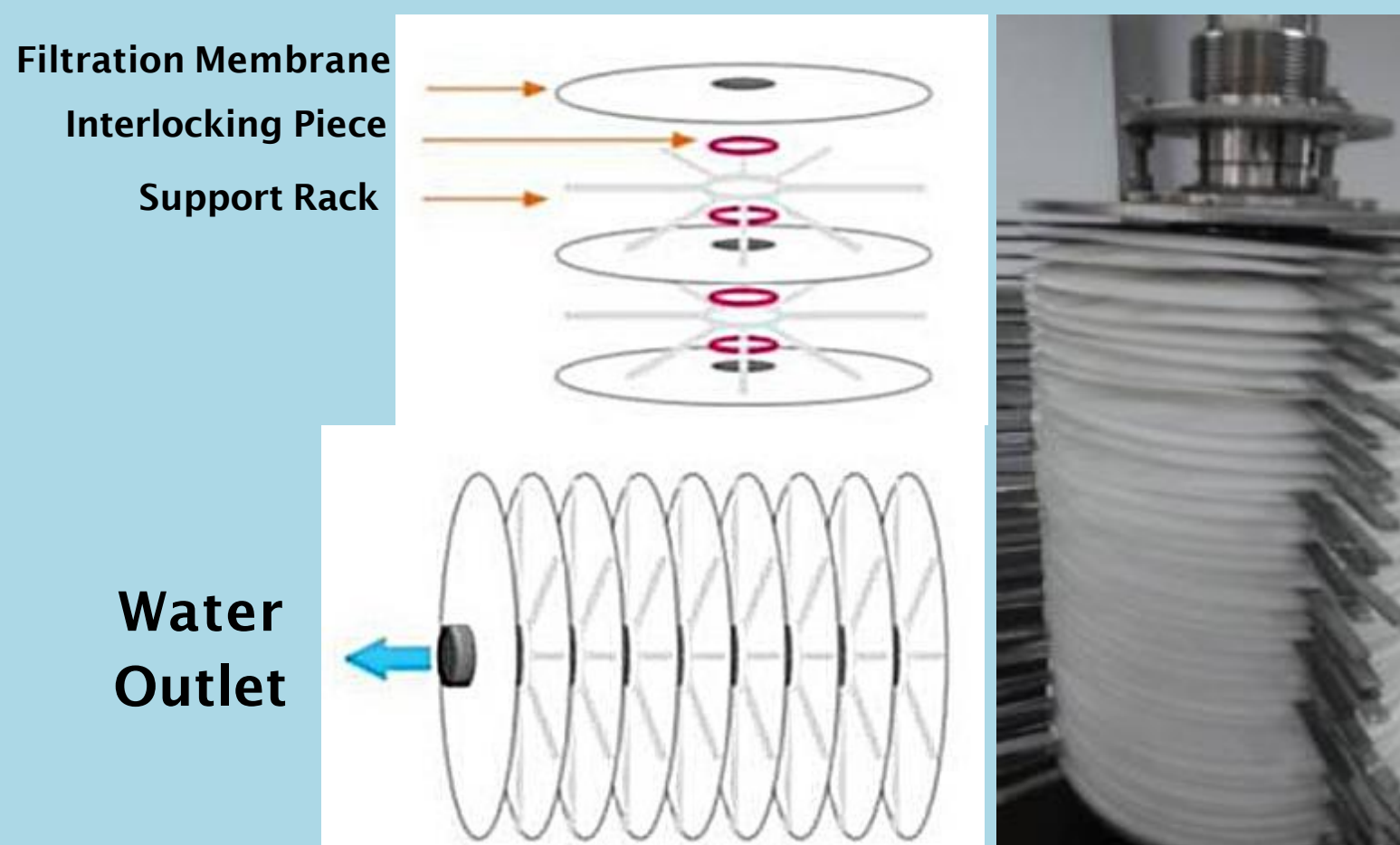
Desalination  
 Healthcare (Dialyzers)  
 Life-Sciences



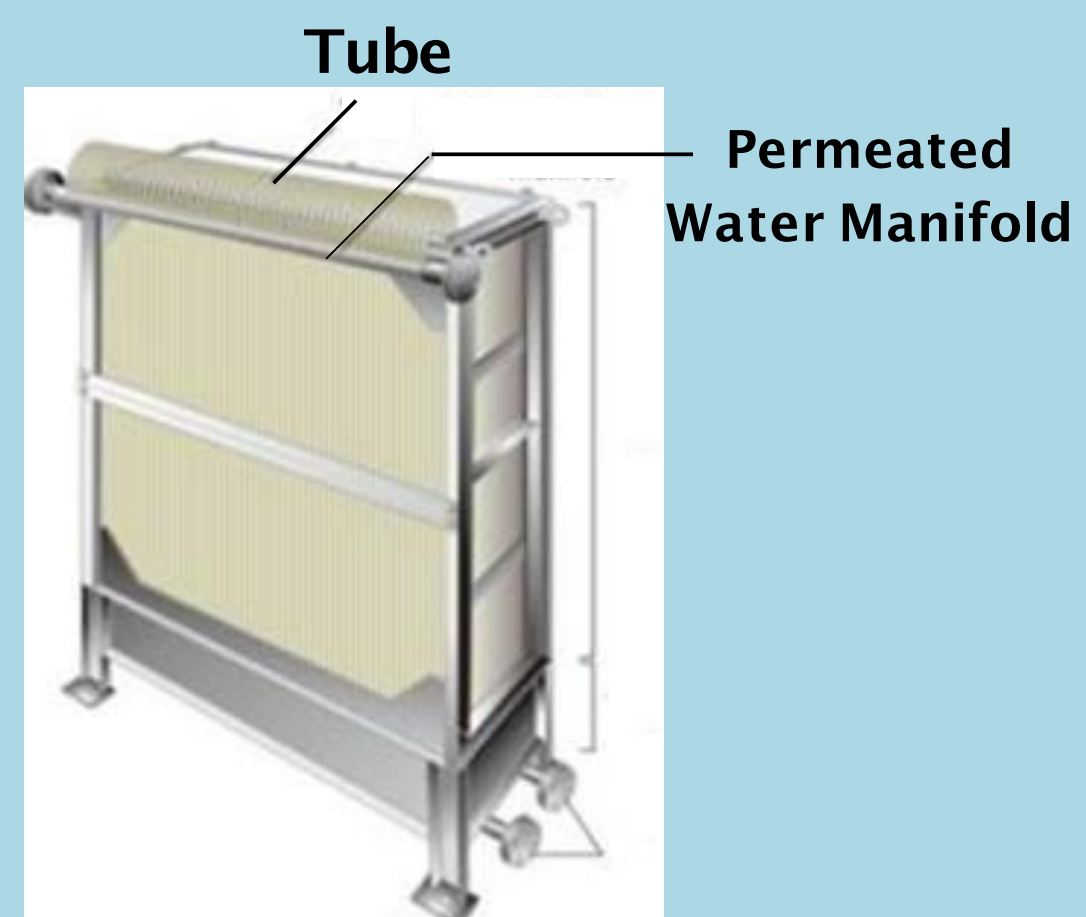
# Properties of Ultrafiltration Membrane

1. Made out of **hydrophilic PVDF material** which is non-adhesive, easy to clean, reusable and chemical resistance.
2. **Nanometers pore size membrane** with high rejection rate (MWCO > 85%), large water flux (>300LMH) and only requires small amount of backwash water.
3. **Reduce inlet water turbidity** from ten thousands NTU to less than 0.1 NTU
4. Combine with DTUF multilayers material adhesive technology, the **scale of water output can be larger** based on various applications.

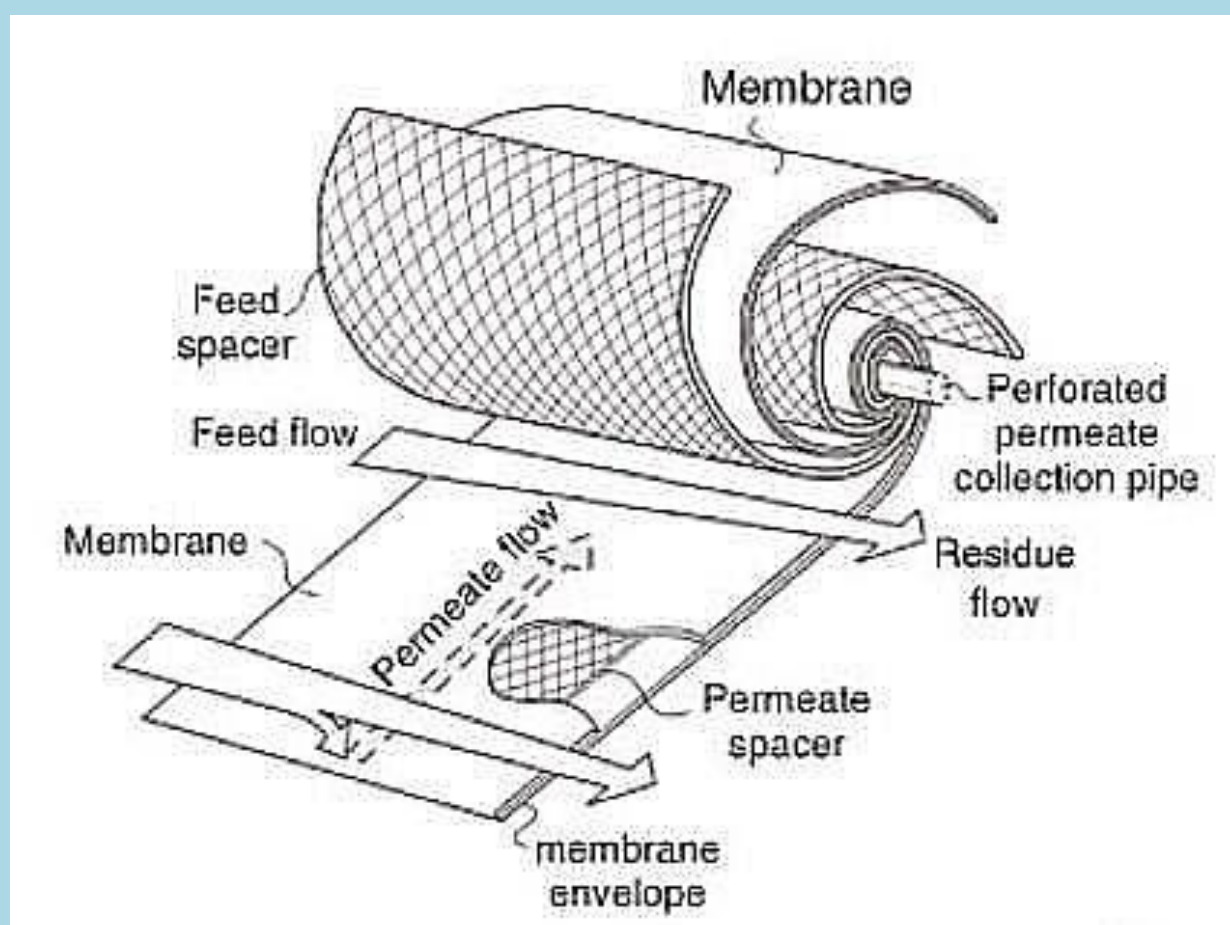
## Membrane Module Types



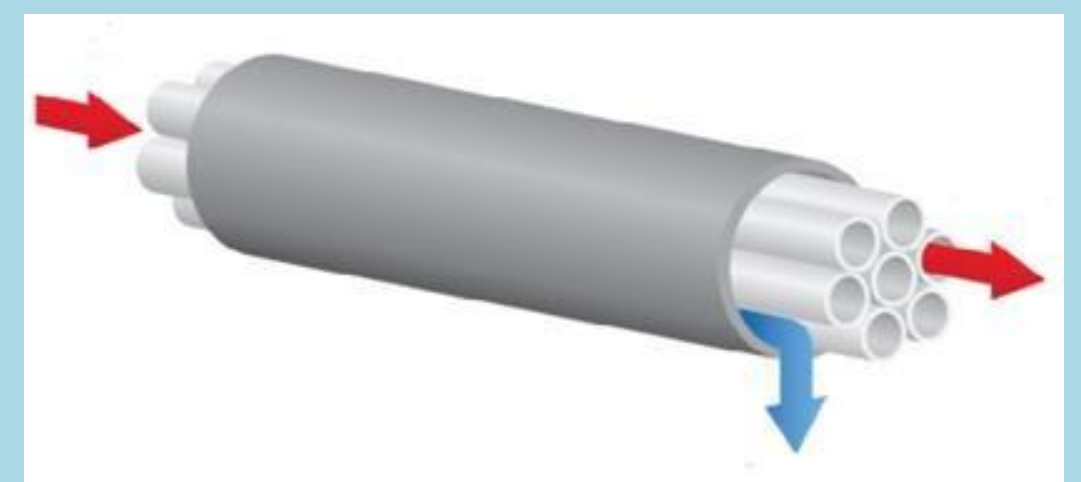
**Disc Module Type**



**Frame Module Type**



**Roll Module Type**



**Tube Module Type**



# Home Series Ultrafiltration System

1. **Nanoporous size** ultrafiltration membrane, able to block harmful substances such as E. Coli, bacteria effectively.
2. Highest quality for drinking water and **preserve the minerals and trace elements** in the water.
3. **Do not require electricity**, no wastewater and high water output flowrate.
4. **Prolong service life** of water equipment, water pipe in home.
5. The water is **free from impurities**, rusts and pollutants, improves the home water hygiene.



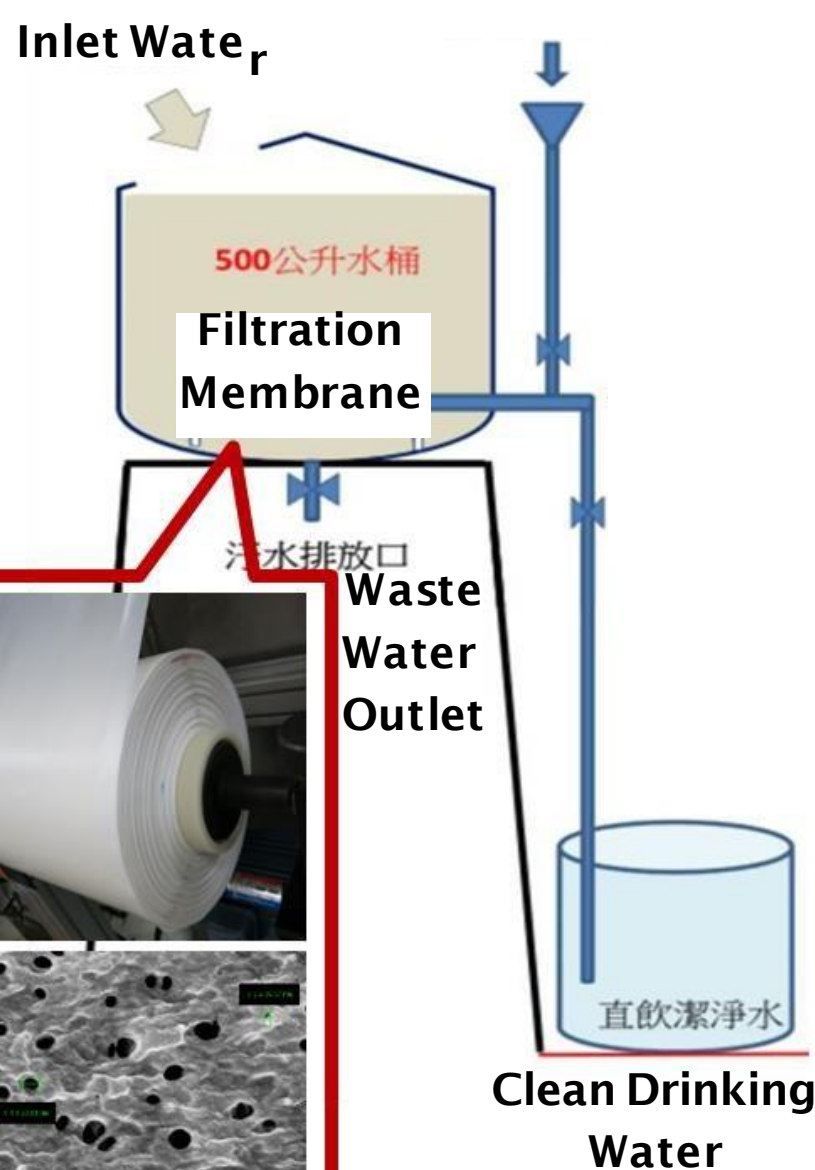
Parameters	Specifications
Size	1200 X 400 X 400mm
Output Water Flowrate	8000L/Hr (Pressure 3kg/cm2)
Outer Tank Material	SUS304 Stainless Steel



## Ultrafiltration System in Cambodia

### Gravitational Ultrafiltration Membrane Module + Activated Carbon

Pre-Treatment Water

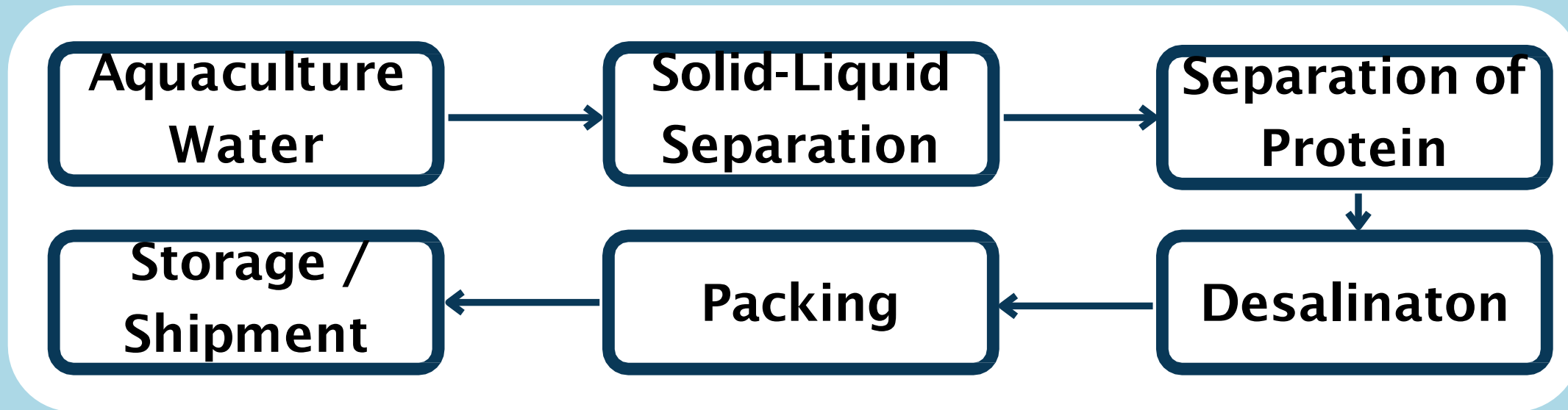


Parameters	Location A		Location B	
	Before	After	Before	After
E. Coli (cfu/cc)	13	0	0	0
Total Bacteria (cfu/cc)	13	0	6	0
Nitrogen Oxide (ppm)	ND	ND	ND	ND
pH	7.97	7.3	7.85	8.1
Conductivity (us/cm)	233	230	251	221
TDS (mg/Litre)	170	156	220	175
Salinity (ppm)	109	112	186	162

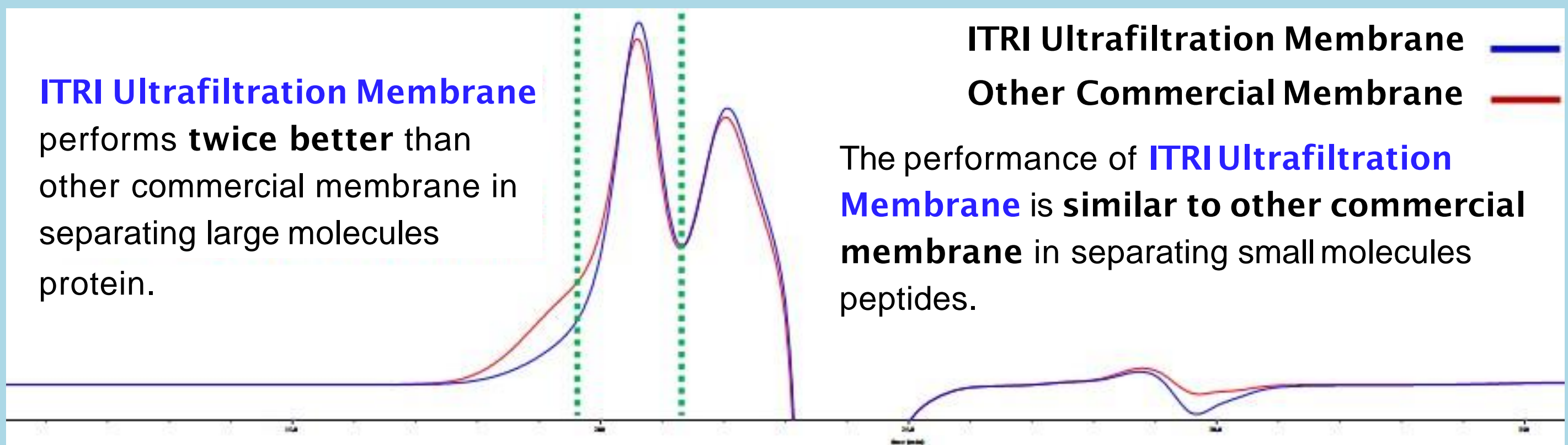


# Separation of Peptides from Wastewater

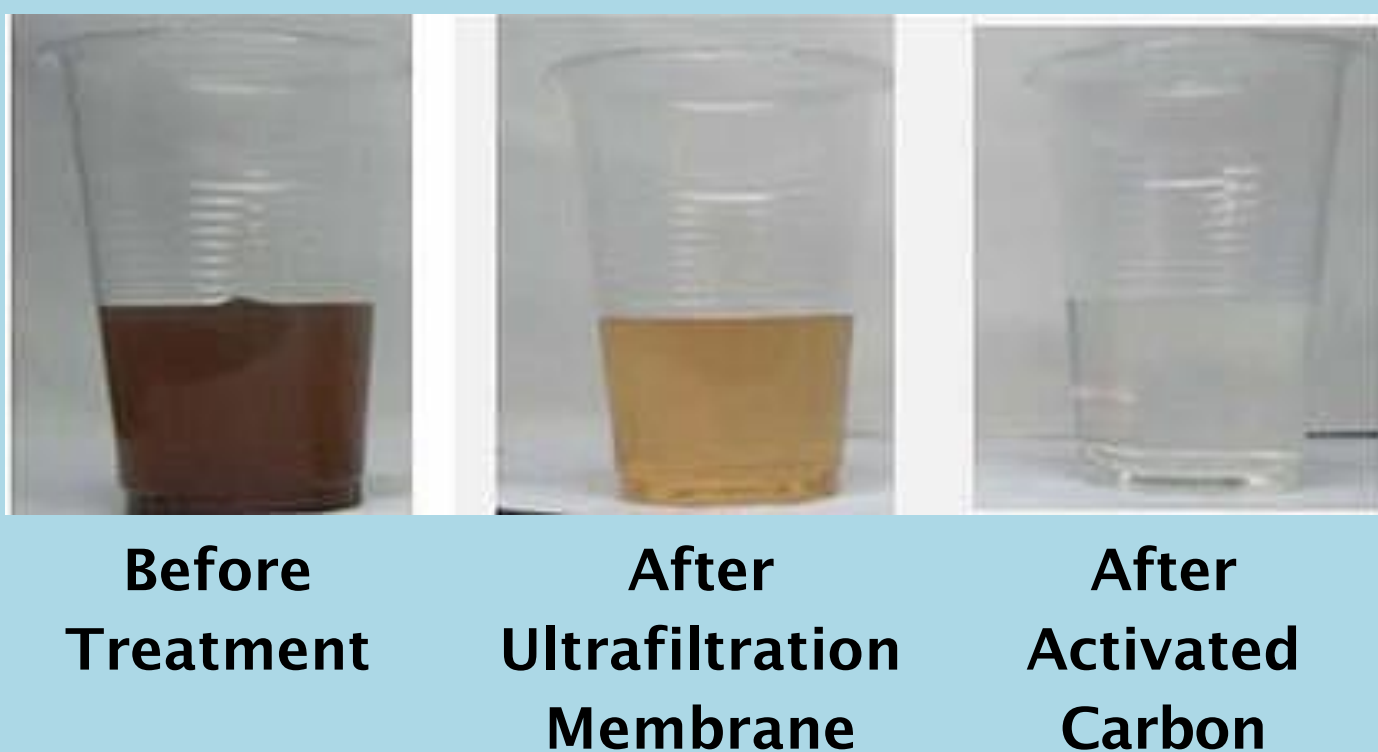
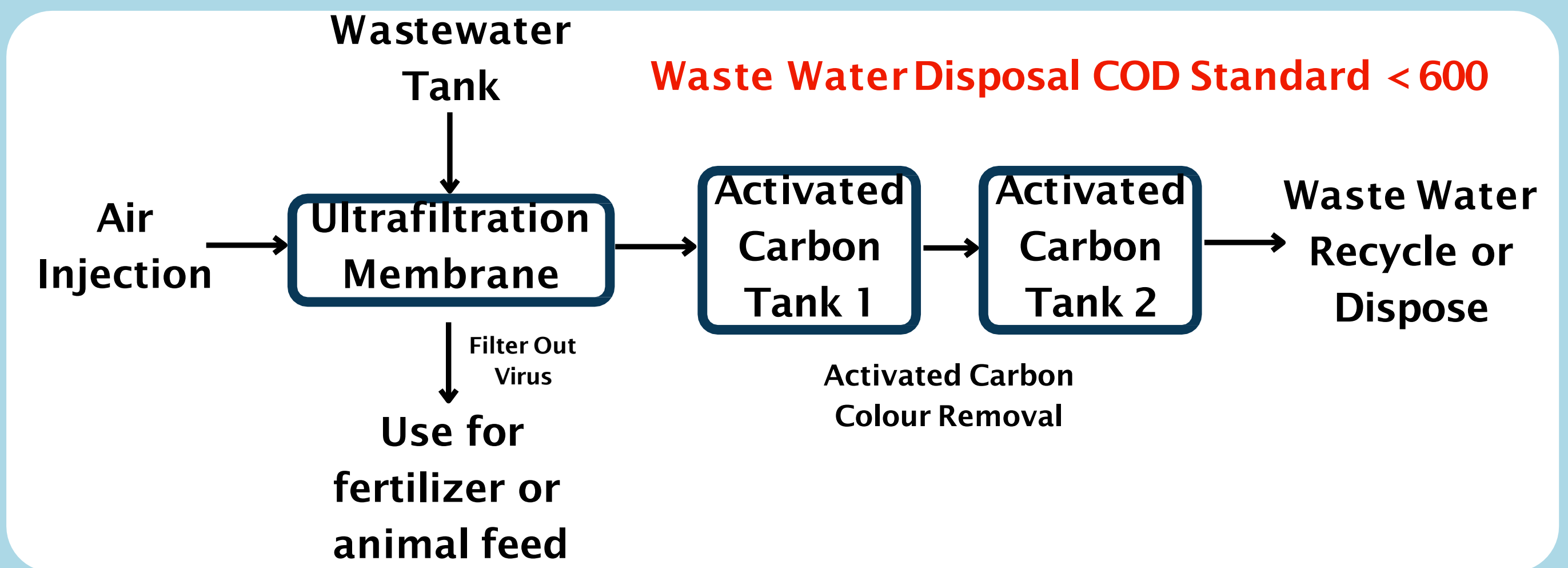
## Application of Ultrafilter Membrane in Aquaculture Wastewater



Aquaculture industry requires to separate large molecules protein (MW>100K) and small molecules peptide (MW<10K)



# Livestock Farming Wastewater Treatment



**SGS** 超微量工業安全實驗室  
 Ultra Trace Industrial Safety Hygiene

Parameters	Before	After
COD (mg/L)	13,652	110
Turbidity (NTU)	335	87
Total Bacteria (cfu/ml)	1.48x10 <sup>6</sup>	4
E.Coli (cfu/100ml)	2.43x10 <sup>6</sup>	<1.0



# Cutting Fluid Recycling Testimonial



Cutting fluid recycled and reused

# Nitrophosphate Water Filtration System



## Turbidity(NTU) Test Result

Sample	Before	After
T - 401	97.4	0.06
T - 406	11.6	0.05
T - 409	621	0.02

## COD(mg/L) Test Result

Sample	Before	After
T - 401	13,930	389
T - 406	1,611	1,037
T - 409	1,491	227

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