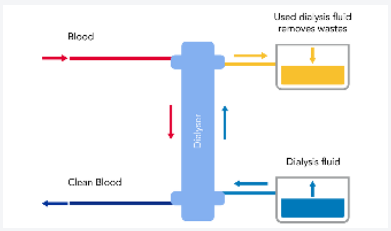
Dissolving/handling solvents

APPLICATIONS

THEORY, KNOWLEDGE, & MODELS

CAPABILITIES

Hemodialysis and Biopharma



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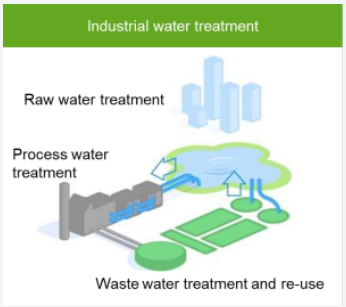
Wastewater treatment

Dope solution preparation: polymer, solvent and additive(s)

Dope and polymeric solution viscosity



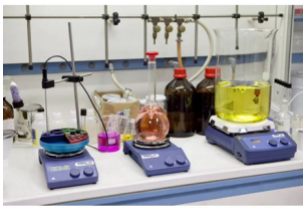
Food and beverage

(Micro and ultra filtration)

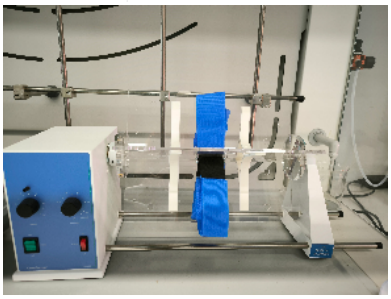
Gas separation

Solution and dope preparation

Solution/dope preparation by magnetic stirring



Solution/dope preparation by mechanical stirring



Solution/dope preparation by Ultrasound bath

Reverse osmosis (RO)

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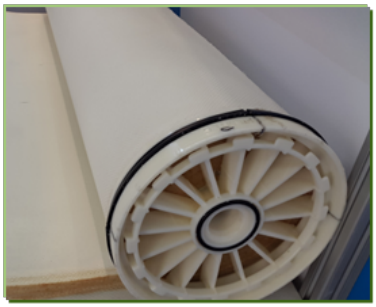
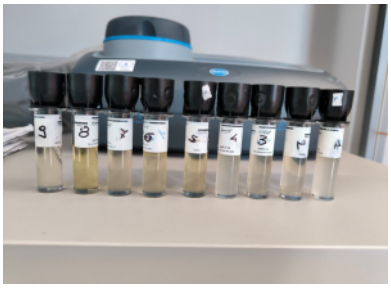


Solution and dope stability study

Qualitative inspection



Quantitative inspection by spectrophotometric testing. Preliminary investigation of NIPS process by analysis of coagulation bath to determine eventual releasing during the polymer precipitation and membrane formation

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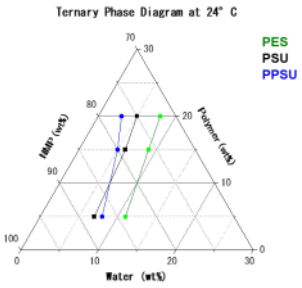
Polymer screening : support to design polymers in membrane application

1. Moisture content, MW, TGA, DSC
2. Polymer solubility in common membrane manufacturing solvents (NMP, DMAc and DMF) and in green solvent (DMC, DMI, Polar Clean)
3. Water as non solvent
4. Dissolution time
5. Polymer leaching
6. Polymer-Polymer compatibility
7. Polymer-Additive compatibility
8. Long term solution stability
9. Hydrophilicity assessment (ie: CAB, Ternary phase diagram)