

Aspen Plus® and CFD Coupled Simulation for the Optimisation of Vacuum Membrane Distillation Process

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Introduction	Thermal driven membrane separation process, such as	
Intro		
Objective		
	Normal VMD (Pre-heating/OneUnit): • Energy is recycled from retentate stream.	
	 Alternative submerged VMD(Post-heating): Additional energy is required for submerge VMD to provide heat for evaporation. 	
	 The alternative process utilizes heat from permeate by further heating up to 100 °C and re- direct back to the submerged VMD. Alternative Cross-flow VMD (FourUnit): 	
	 Cross-flow VMD relies heat from high inlet feed flowrate to support evaporation, which limits the water recovery level. The alternative process mimics the RO process 	
	 The alternative process mimics the RO process design ideology for increasing water recovery by putting several units in series. 	
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