

FIG. 1

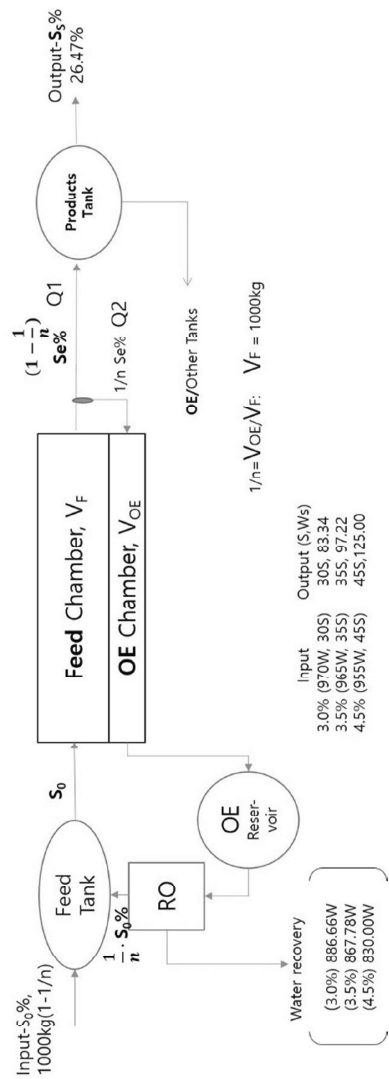


FIG. 2

M- $\Delta\pi$ =RO System

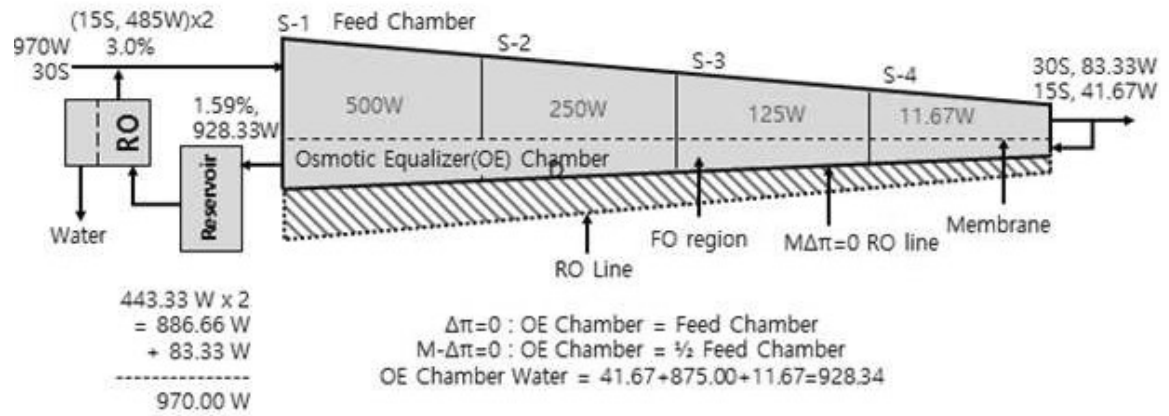


FIG. 3

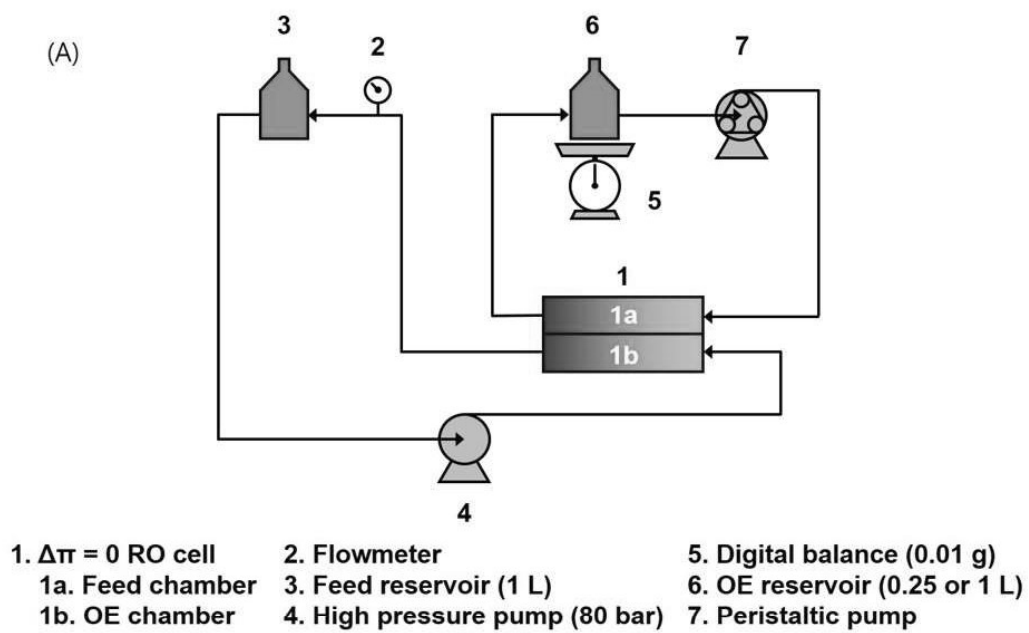


FIG. 4

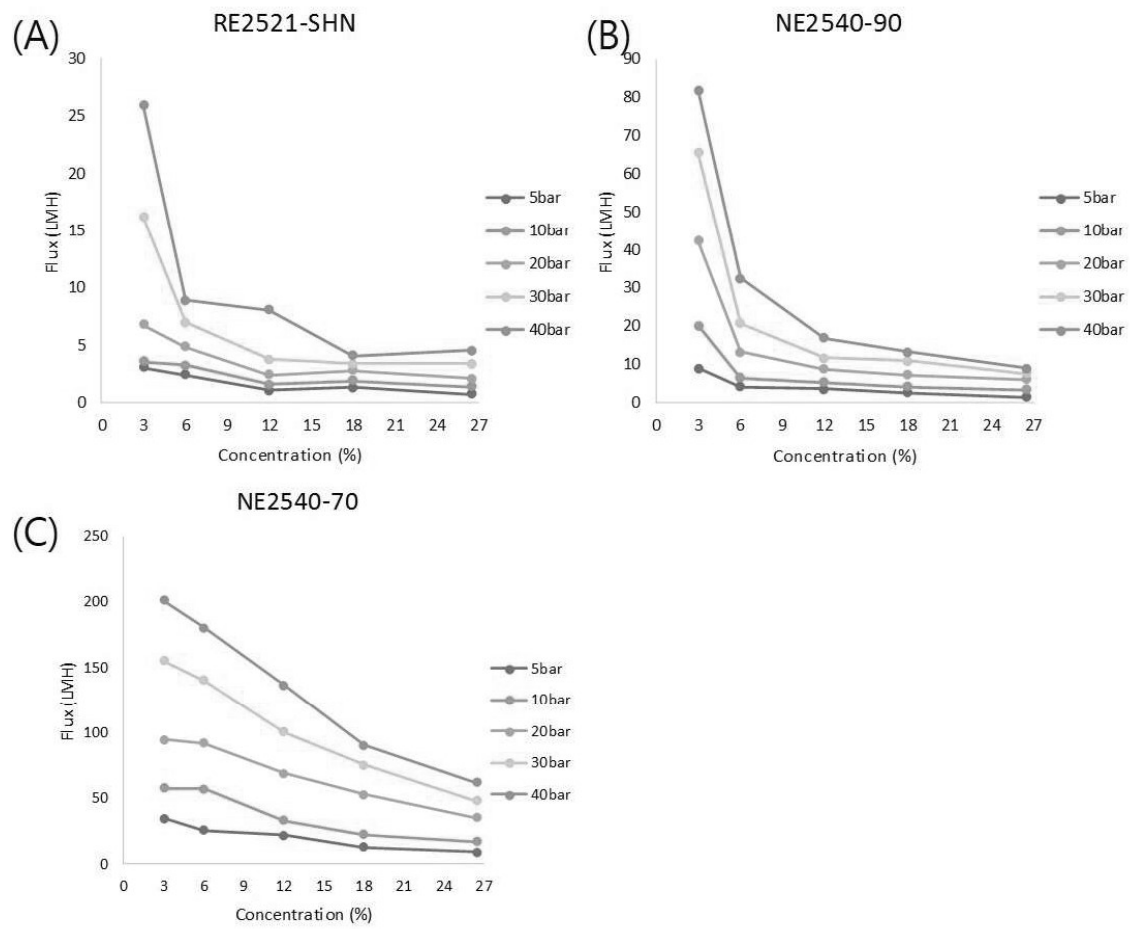


FIG. 5

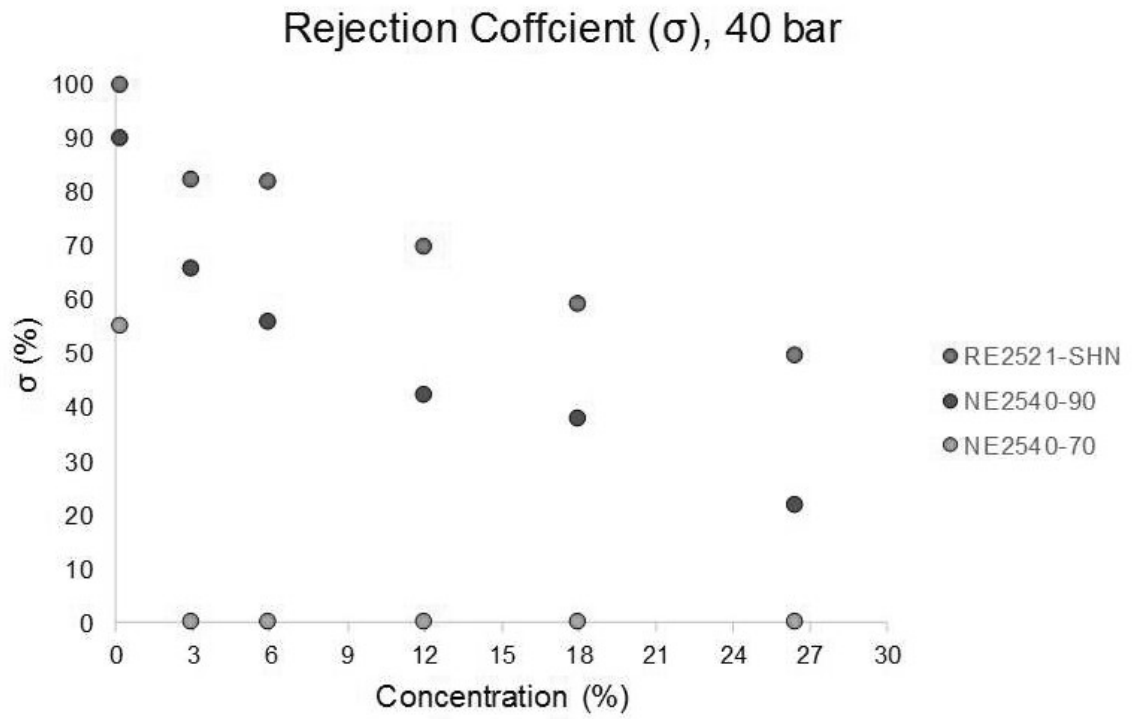


FIG. 6

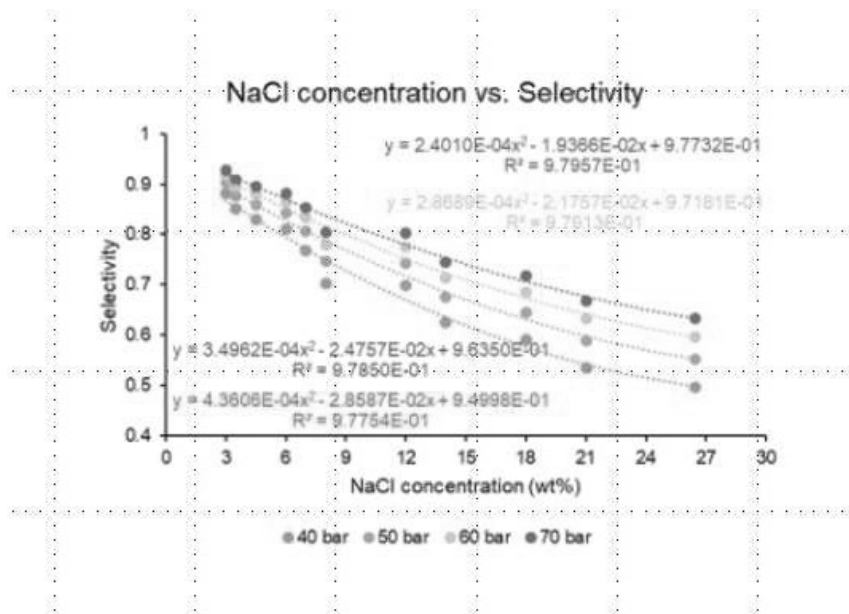


FIG. 7

$\Delta\pi$ -0 Reverse Osmosis : flux and residence time 02.28-2020									
#EXP		$\Delta P - \Delta\pi$	ΔP	$\Delta\pi$	OE-velocity	x1	x2	x3	π
1	1% $\Delta\pi = 0$	40	40		Q-m/ Θ c	0.468	0.721	1.093	7.609
					RM	1.000	1.558	2.296	
2	2% $\Delta\pi = 0$	40	40			0.159	0.215	0.579	15.518
						1.000	1.347	3.634	
3	3% RO ?	16.258	40	23.742		0.168	0.114	0.308	
						1.000	0.682	1.839	
4	3% $\Delta\pi = 0$	40	40			0.121	0.272	0.695	23.742
						1.000	2.251	5.756	
5	3-1.5% RO	28.437	40	11.563		0.096	0.234	0.695	23.742
						1.000	0.412	7.213	
6	6-3% RO	16.258	40	23.742		0.050	0.017	0.093	50.467
						1.000	0.335	1.878	
7	6% RO	16.258	40	23.742					50.467
8	6% $\Delta\pi = 0$	70	70			0.194	0.417	0.802	50.647
						1.000	2.152	4.134	
9	9-6% RO	-10.467	40	50.467		0.022	0.046	0.073	80.61
						1.000	2.052	3.240	
10	9% $\Delta\pi = 0$	70	70			0.041	0.204	0.550	80.601
						1.000	4.985	13.435	
11	9-6% RO	19.533	70	50.467		0.007	0.203	1.916	
						1.000	2.898	9.625	

FIG. 8

Flow diagram of M- $\Delta\pi=0$ RO system

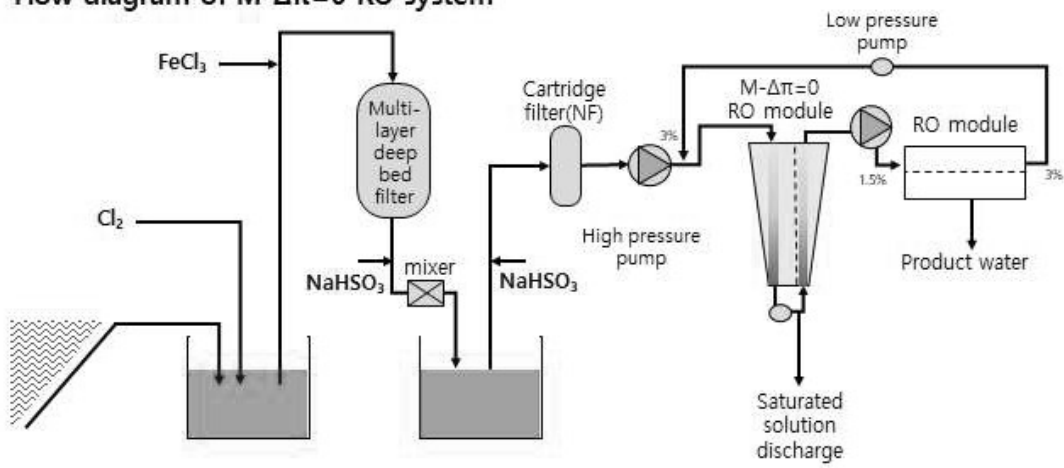
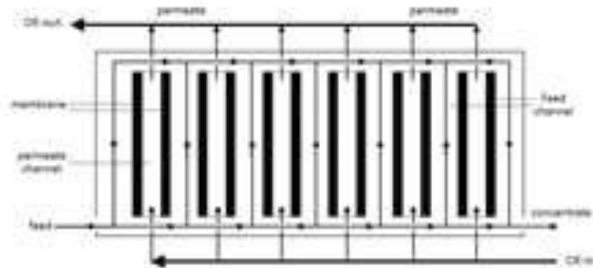
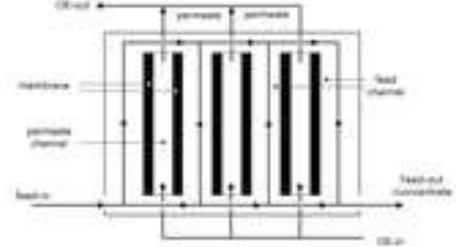


FIG. 9

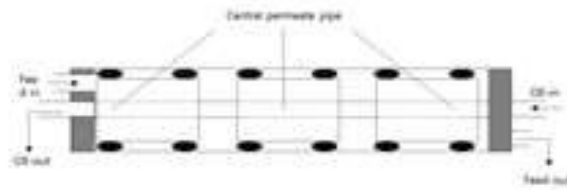
1. plate-and-frame module (6 modules)



1. plate-and-frame module (3 modules)



2. Spiral-wound module in series



3. Hollow Fiber module

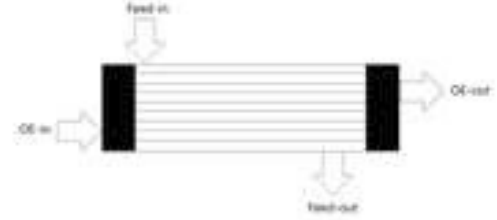
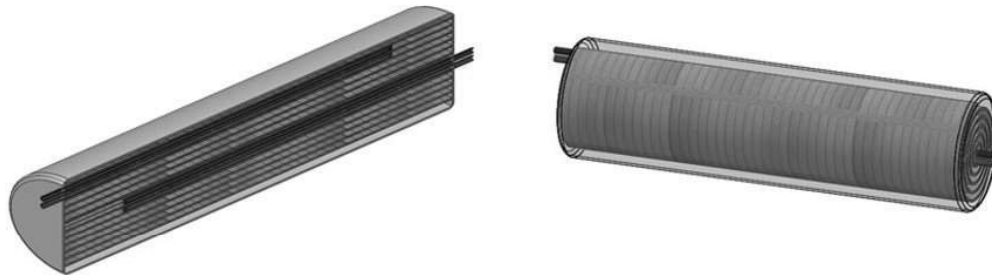


FIG. 10

(A)



(B) FOS-CC system using envelope-type flat membrane

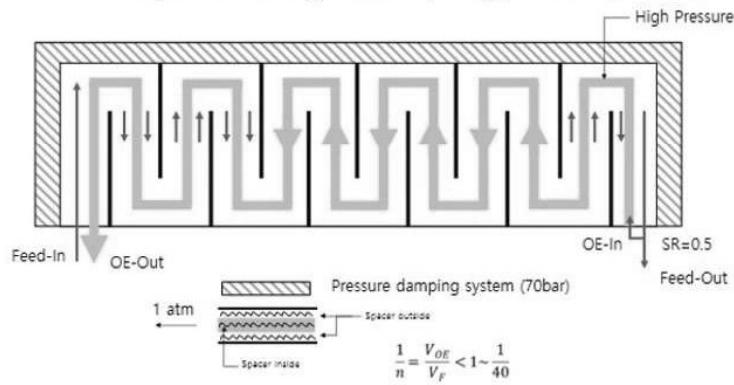
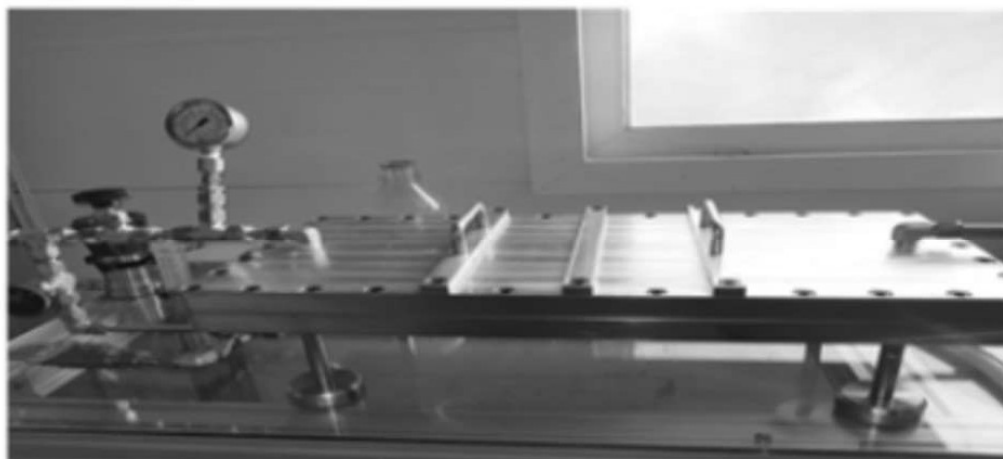


FIG. 11

(A)



(B)

