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FIG. 1

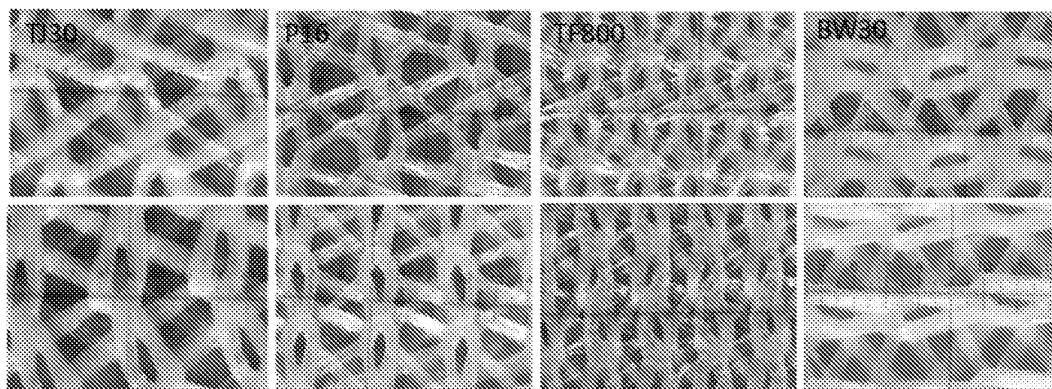


FIG. 2

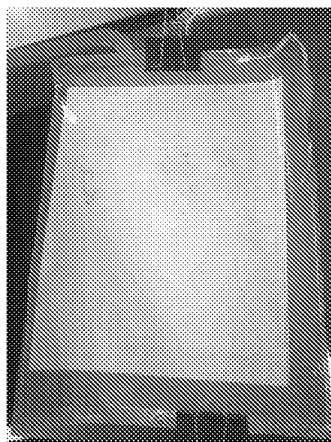


FIG. 3

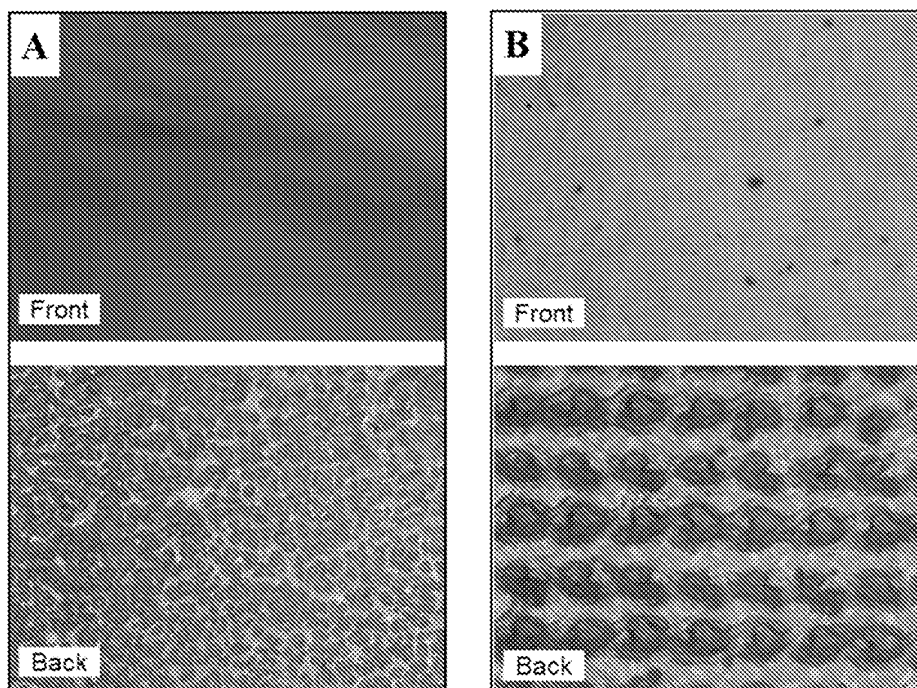
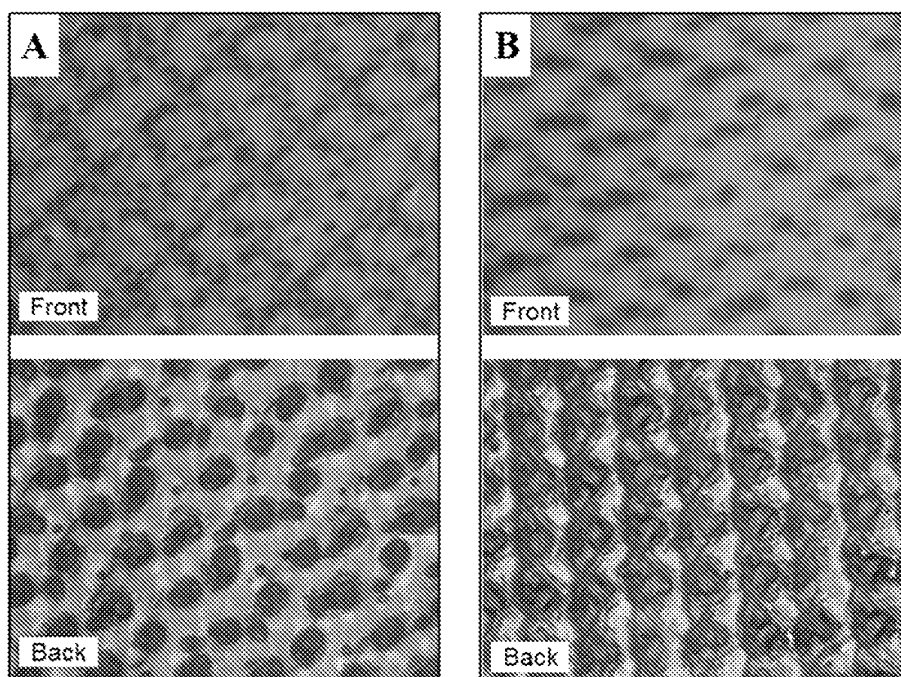


FIG. 4



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FIG. 4 (Continued)

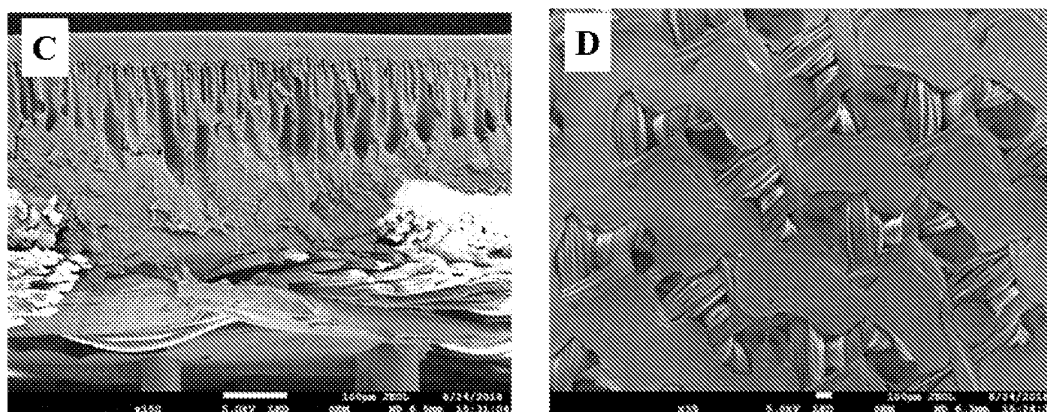
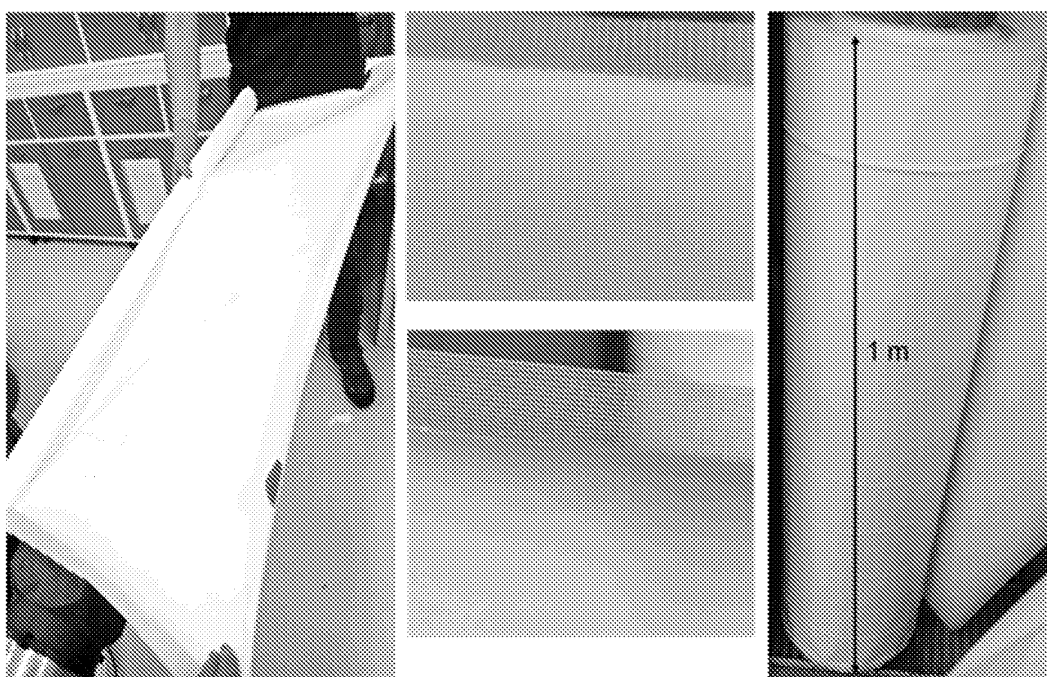


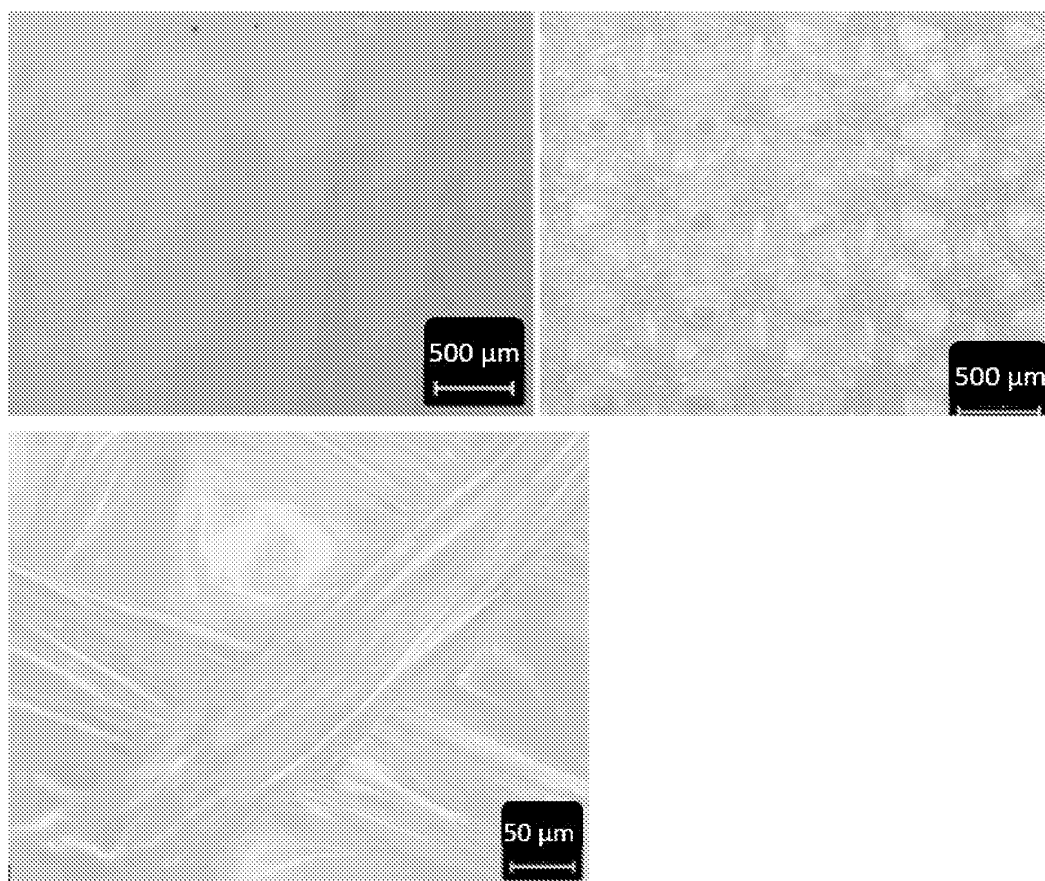
FIG. 5A



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FIG. 5B



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FIG. 5C

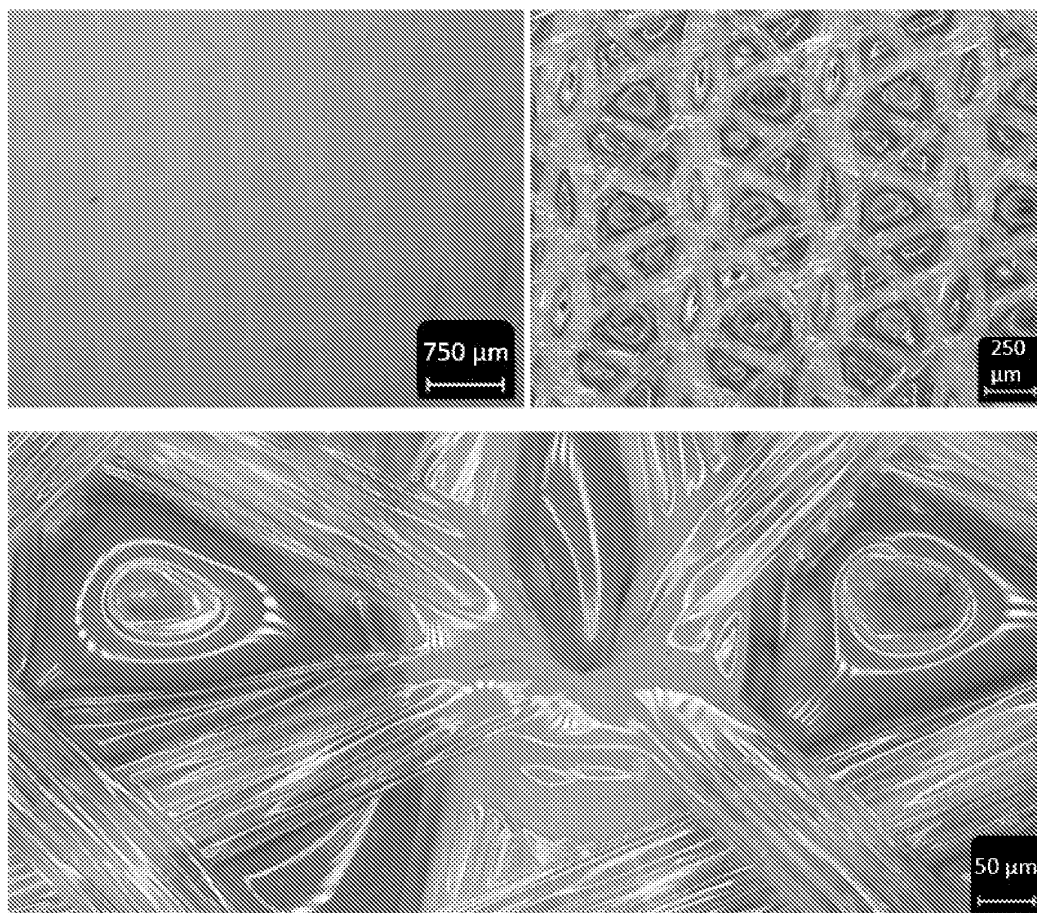


FIG. 6

Reinforced Membrane ID	Casting Thickness (μm)	Casting Thickness (mil)	Casting Angle	Cure Direction	Wetting Solution	Polyamide Type	Backing (Reinforced Material - RM)	Backing Thickness (mil)	Total Thickness (mil)	Total Backing Thickness (mil)	Leaf Set Thickness (mil)	Thickness Reduction (%)	Coupon Flux (LMH)	Coupon Rejection (%)
D130618HF20.2	100	4	45	Down	DI water	RO	TJ-030	11.0	15.1	4.1	61.1	1.5	21.0	97.4
D190618HF21.1	100	4	45	Down	DI water	RO	TJ-030	11.0	15.1	4.1	61.1	1.5	24.4	94.8
D190618HF21.2	250	10	45	Up	DI water	RO	TJ-030	11.0	20.0	9.0	71.0	-14.4	24.5	91.3
D050718HF23.1	100	4	45	Down	DI water	FO	TJ-030	11.0	15.2	4.2	61.4	1.0	25.3	96.4
D050718HF23.2	100	4	90	Up	DI water	RO	TJ-030	11.0	14.1	3.1	59.3	4.4	22.7	97.2
D050718HF23.4	100	4	45	Down	DI water	RO	Non-woven	4.0	10.0	6.0	62.0	0.0	25.8	94.8
D170718HF24.1	100	4	45	Down	DI water	RO	TJ-030	11.0	15.1	4.1	61.1	1.5	16.7	91.2
D170718HF24.2	100	4	45	Down	2.5% SLS	RO	TJ-030	11.0	12.1	1.1	55.2	11.1	Too high	N.A.
D200718HF25.1	100	4	45	Down	0.2% SLS	RO	TJ-030	11.0	15.1	4.1	61.3	1.3	29.2	92.8
D200718HF25.2	100	4	45	Down	80% NMP/H2O	RO	TJ-030	11.0	35.9	24.9	102.7	-65.6	88.1	25.9
D200718HF25.3	100	4	45	Down	20% NMP/H2O	RO	TJ-030	11.0	14.2	3.2	59.3	4.4	27.9	93.6
D260718HF26.1	100	4	45	Down	None	RO	SEFAR	2.6	12.4	9.8	55.9	10.0	27.4	97.4
D260718HF26.2	100	4	45	Down	DI water	RO	SEFAR	2.6	8.6	6.0	48.1	22.5	53.8	62.8
D010818HF27.1	100	4	45	Down	None	RO	SEFAR	6.7	11.4	4.7	53.9	13.1	13.0	96.7
D010818HF27.2	100	4	45	Down	DI water	RO	SEFAR	6.7	11.5	4.8	53.9	13.1	48.0	24.8
D171218HF33.1	200	8	45	Down	DI water	RO	P16	6.0	10.2	4.2	51.5	17.0	75.5	97.1
D211218HF34.1	200	8	45	Down	DI water	RO	P16	6.0	10.2	4.2	51.5	17.0	41.9	92.8
B211218HF35.1	200	8	45	Down	DI water	RO	P16	6.0	10.0	4.0	51.0	17.8	56.1	93.5

FIG. 7

Membrane ID	Org. Pump (Hz)	Wetting (Hz)	Backing Thickness (mil)	Total thickness (mil)	Total - backing thickness (mil)	Leaf set thickness	% reduction	Cell Test Flux (LMH)	Cell Test (% Rel)
*RO250918-01	3.4	N.A.	3.9	6.0	2.1	54		20.5	98.0
D121018TJ30/4.1	12	4x100	N/A	N/A	N/A	N/A	N/A	43.6	89.2
D121018TJ30/4.2	12	4x100	N/A	N/A	N/A	N/A	N/A	49.3	96.2
D121018TJ30/4.2	12	4x100	N/A	N/A	N/A	N/A	N/A	44.5	96.9
D181018TJ30/5.0	13	4x50	11	12.4	1.4	56	-2.8	47.0	96.8
D191018TJ30/6.1A	12	4x50	11	12.5	1.5	56	-3.1	48.0	94.8
D191018TJ30/6.1B	12	4x50	11	12.5	1.5	56	-3.1	50.2	94.4
D191018TJ30/6.2	13	4x50	11	13.2	2.2	57	-5.4	43.1	92.9
D191018TJ30/6.3	14	4x50	11	13.6	2.6	58	-6.9	42.4	95.5
**B100119P16/7.3	8	550	6.6	8.5	1.9	48	9.6	55.7	96.5

FIG. 8

		PRO settings						Power Density (W/m ²)					Reverse Salt Flux, J _s (GMH)					RO	
Method	Dope	Draw (Hz)	Draw (ml/min)	Draw Flow (cm/s)	Feed Flow (ml/min)	Feed Flow (cm/s)	Ratio D:f (xflow velocity)	5	10	15	20	25	5	10	15	20	25	Flux (LMH/ bar)	% Rej
Commercial SEAPS		10	1250	20	400	86	0.23		0.74	1.30	2.03			4	61	63			
RM HF	PS-D	10	1250	20	400	86	0.23		0.00	0.32	1.40			66	24	50			
RM Line	PS-D	10	1250	20	400	86	0.23	0.92	1.04				116	158					
RM HF	PES	10	1250	20	400	86	0.23		1.77	2.20	2.29	2.62		0.02	0.02	0.02	26	<1	95.4
RM HF	PES	17	3750	59	400	86	0.69		2.02	2.51	2.81			16	15	16		<1	95.4
Commercial DOW																		3.1	97.4
RM Line	PS -D																	5.1	90.1
RM HF	PS -D																	3.4	94.1
RM HF	PS -B																	4.9	95.1

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FIG. 9

	FO mode		PRO Mode	
Coupon	Jw (LMH)	Js (GMH)	Jw (LMH)	Js (GMH)
A	5.05	9.37	2.68	4.60
A	4.68	10.46	2.39	3.54
A	4.72	10.78	2.25	2.60
B	5.10	4.72	3.96	7.32
B	4.58	5.08		

FIG. 10A

Run	Coupon		Element		IP mode
	Rejection	Flow (LMH)	Rejection	Flow (LPM)	
RM6	96.1%	68.6	66.3%	0.261	HF
RM7	91.9%	34.6	77.0%	0.209	Line
RM8	93.5%	64.7	89.1%	0.357	HF
RM9	97.1%	31.2	84.8%	0.333	HF
			91.4%	0.133	
RM10	92.1%	39.6	93.0%	0.316	Line
			81.5%	0.333	

FIG. 10B

Run	Coupon		Element		IP mode
	Rejection	Flow (LMH)	Rejection	Flow (LPM)	
RM2	91.6%	35.1	86.6%	0.024	Line
RM10	92.1%	39.6	72.3%	0.040	Line

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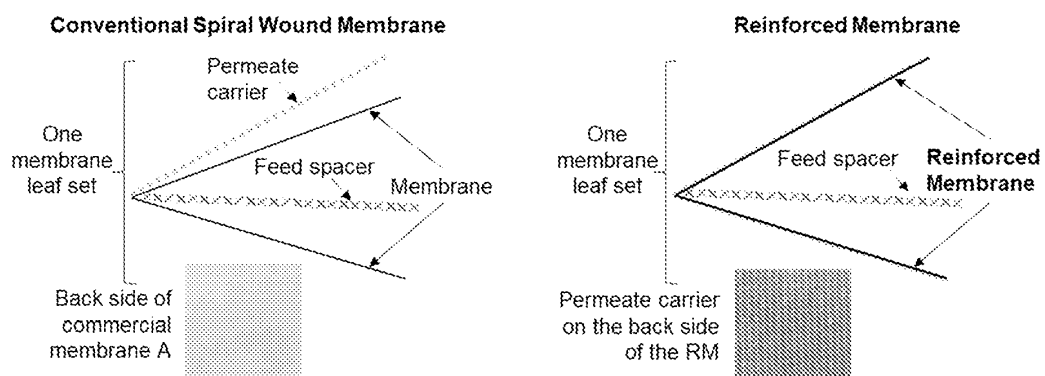
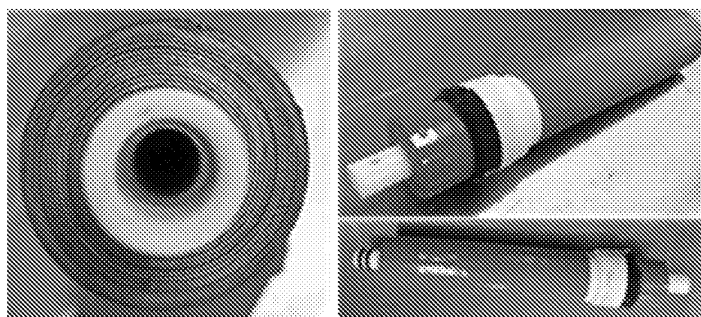
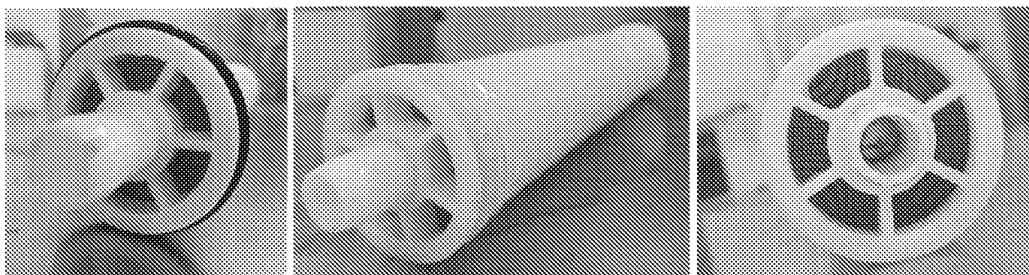
FIG. 11A**FIG. 11B****FIG. 11C**

FIG. 12A

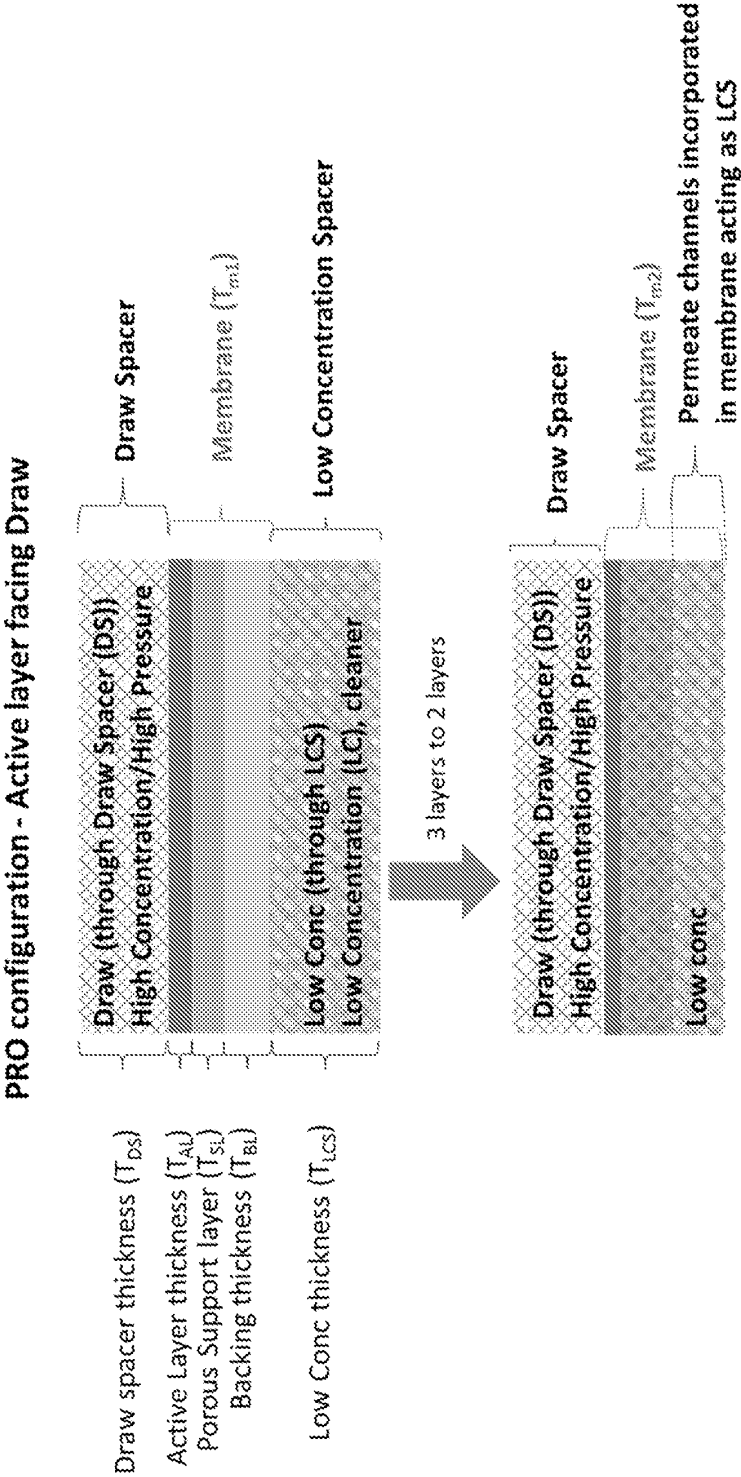
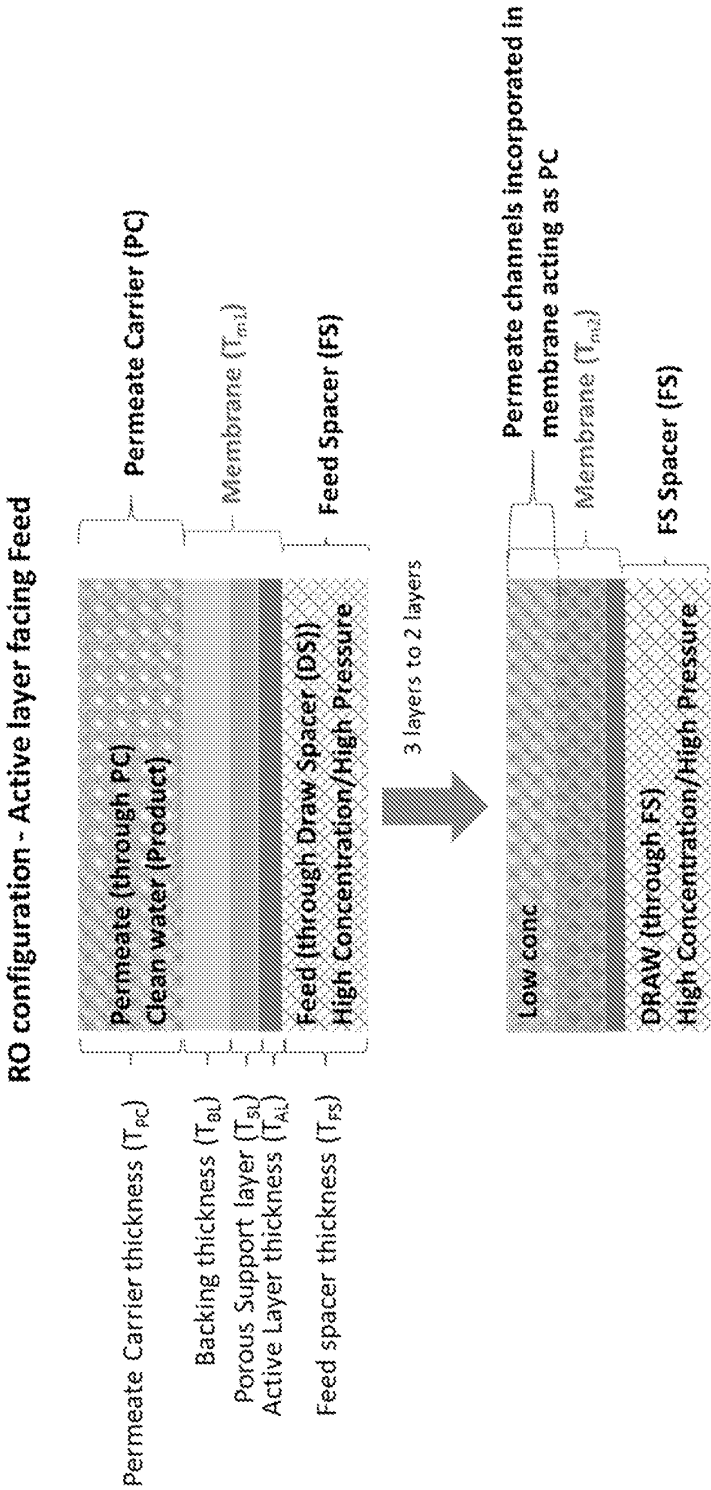
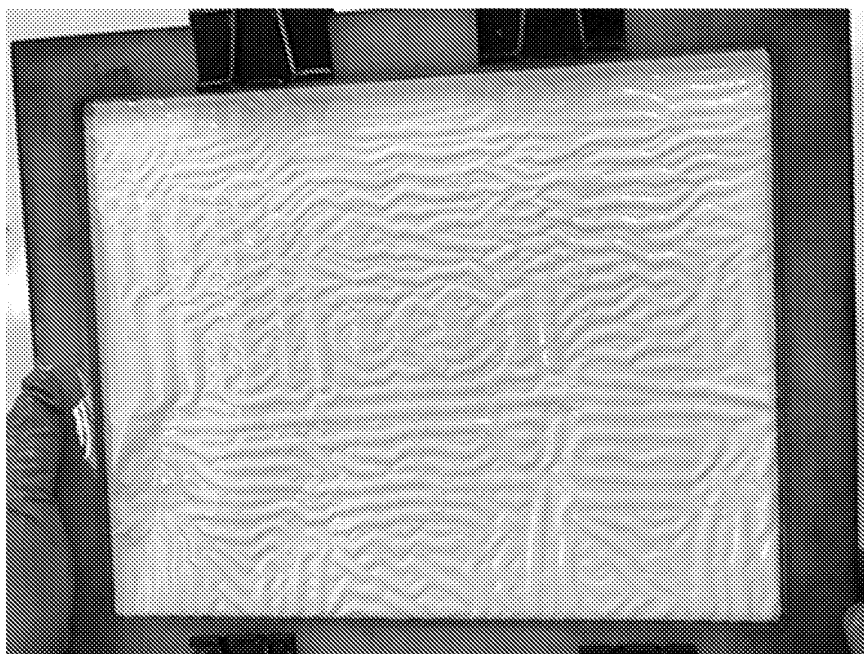


FIG. 12B



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FIG. 13



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