Supporting Information:

Enhancing the separation performance of Aqueous Phase Separation based membranes through polyelectrolyte multilayer coatings and interfacial polymerization

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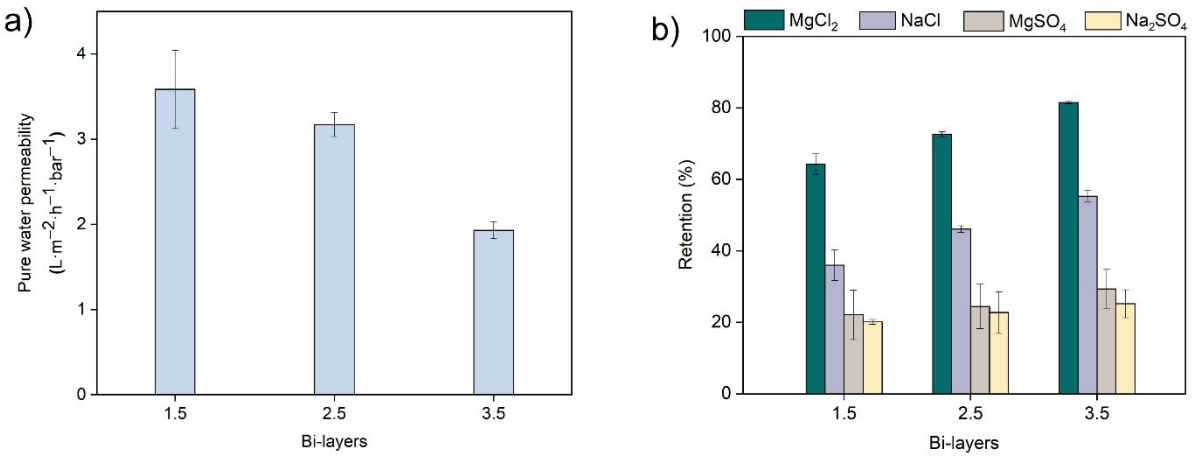

Figure S1. a) Pure water permeability and b) salt retentions of the PSS-PAH multilayer membranes showing the effect of number of bilayers on the membrane permeability and salt retentions.

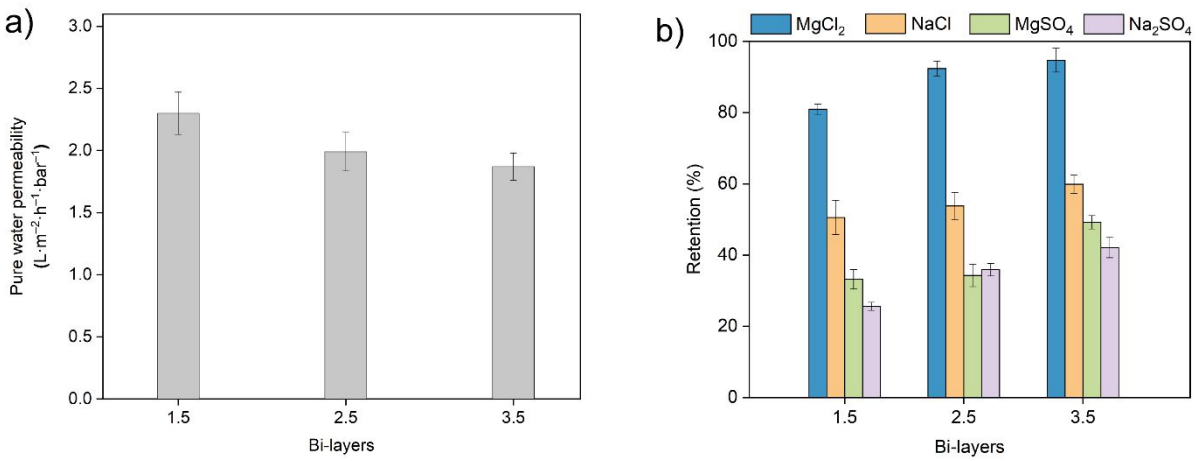

Figure S2. a) Pure water permeability and b) salt retentions of the PSS-PDADMAC multilayer membranes showing the effect of number of bilayers on the membrane permeability and separation performance.

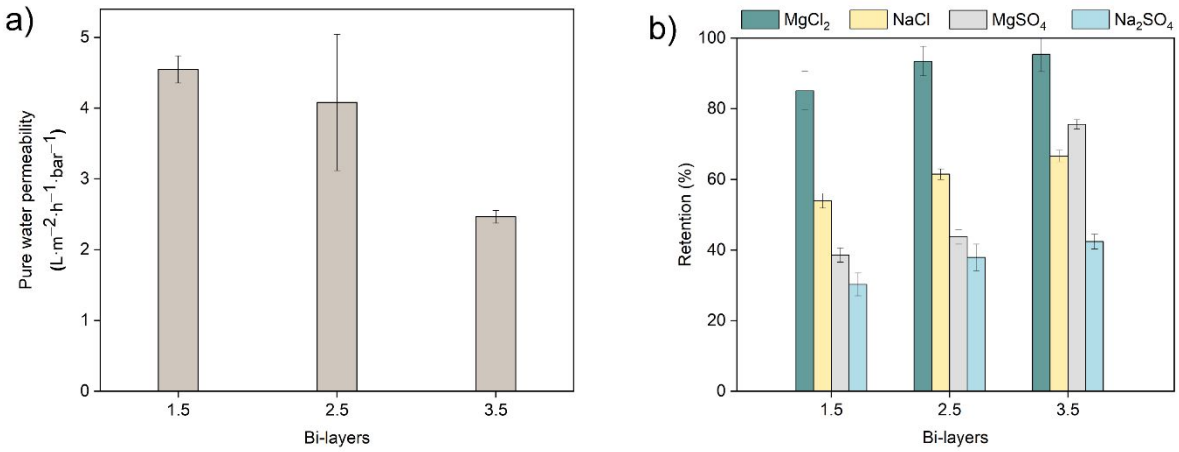

Figure S3. a) Pure water permeability and b) salt retentions of the PSS-PEI multilayer membranes showing the effect of number of bilayers on the membrane permeability and separation performance.

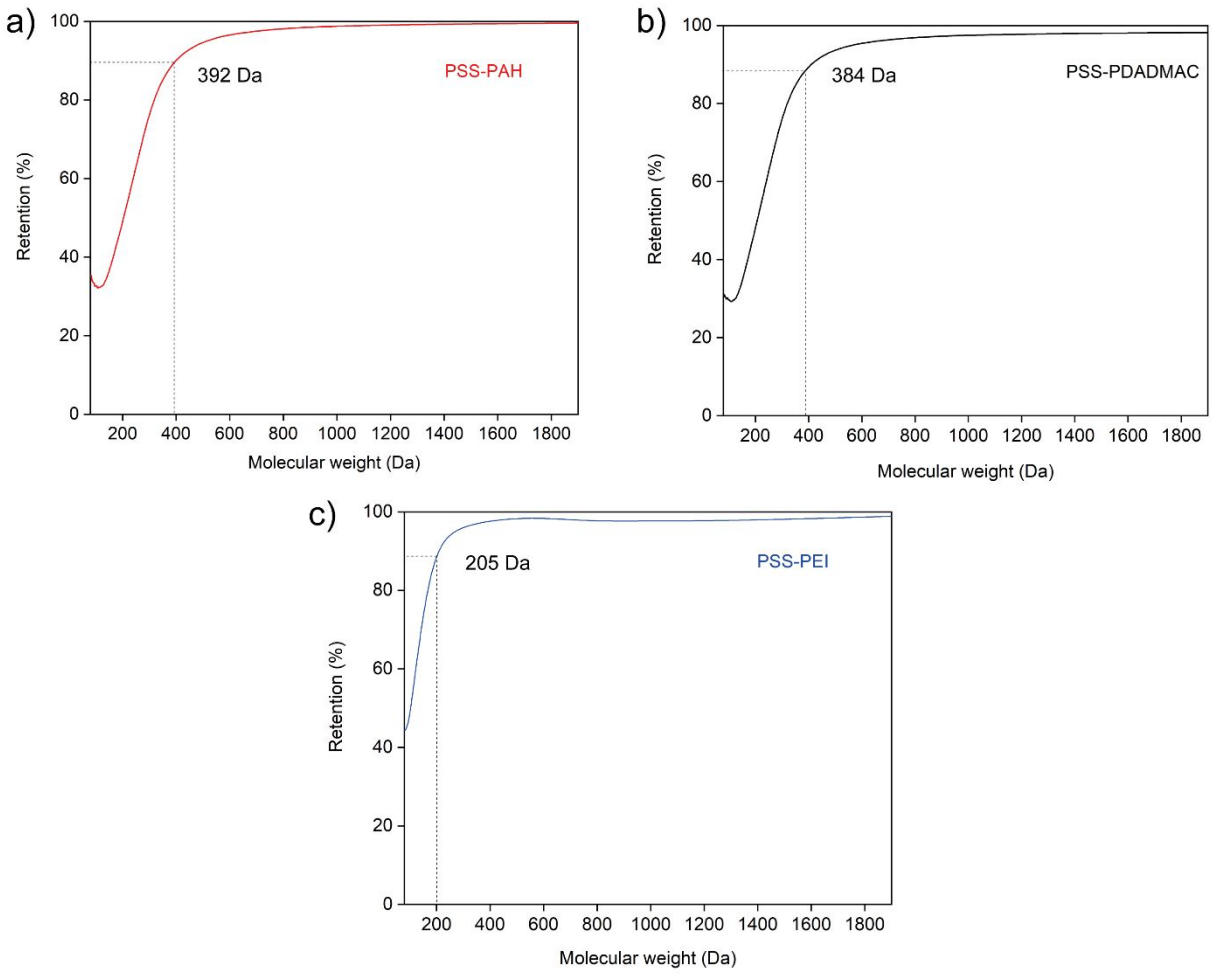

Figure S4. Sieving curves obtained by gel permeation chromatography showing the retention of Polyethylene glycol (PEG) as a function of its molecular weight for three types of multilayer coatings. a) PSS-PAH$_{(4.5)}$, PSS-PDADMAC$_{(4.5)}$, and PSS-PEI$_{(4.5)}$. The molecular weight cut-off was estimated by taking the 90th percentile of the maximum retention obtained.

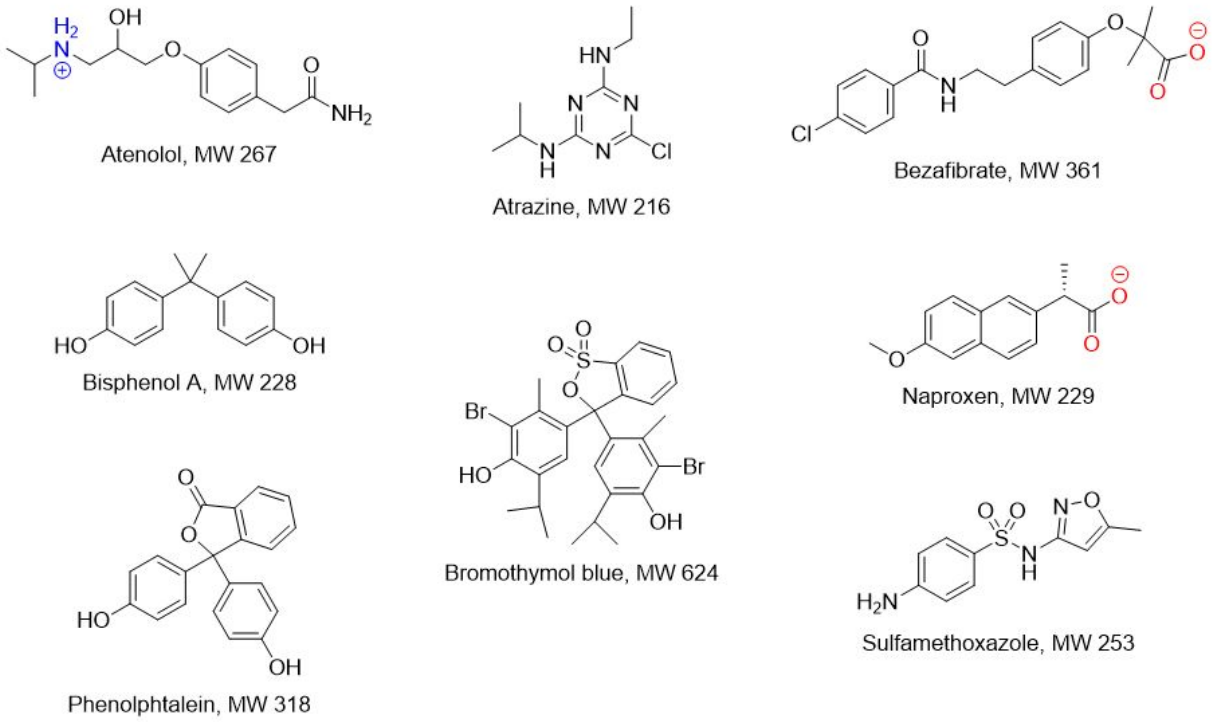

Figure S5. Chemical structures and molecular weights of the eight types of micropollutants used in this work.

Table S1. Comparison of pure water permeability and retention of NIPS based commercial membranes with APS membranes coated in this work.

Membrane	Material	Manufacturer	Pure water permeability ($L \cdot m^{-2} \cdot h^{-1} \cdot bar^{-1}$)	NaCl retention (%)	Reference
NF270	Polyamide TFC	Dow Filmtec	11	80	Dang et al. [1]
TFC-HR	Polyamide TFC	Koch	3.5	99	Xu et al. [2]
XLE	Polyamide TFC	Dow Filmtec	9	99	Xu et al. [2]
SC-3100	Cellulose acetate	Toray	1.3	94	Kimura et al. [3]
NF90	Polyamide TFC	Dow Filmtec	6	93	Yüksel et al. [4]
Desal HL	Polyamide TFC	GE osmonics	10.5	55	Caus et al. [5]
APS IP	Polyamide TFC	This work	1.1	58	This work
	PSS-PAH	This work	1.7	58	This work
APS PEM	PSS-PDADMAC	This work	1.7	64	This work
	PSS-PEI	This work	1.4	70	This work

References

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