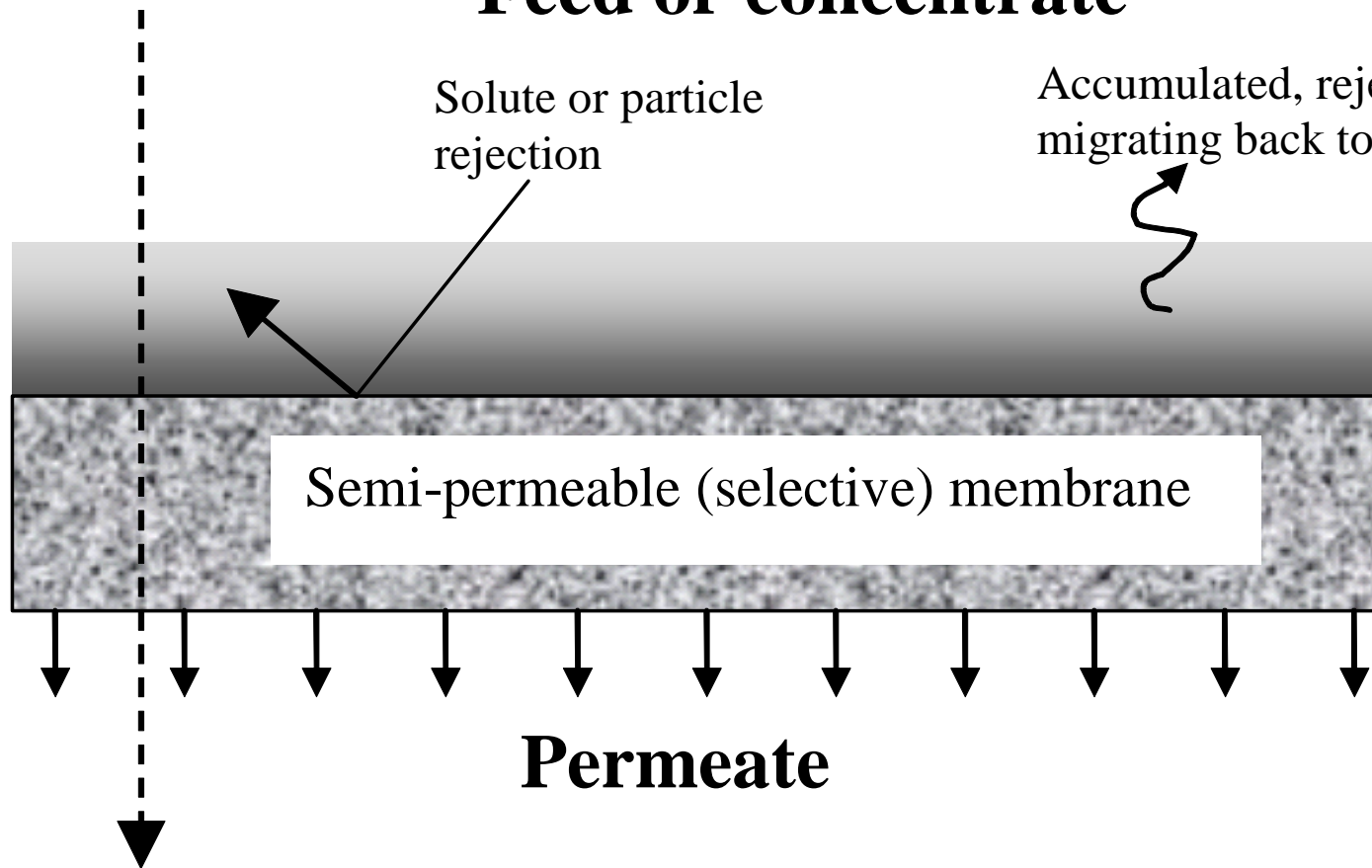


**Physical, chemical,
and/or electrical
driving force**

Feed or concentrate

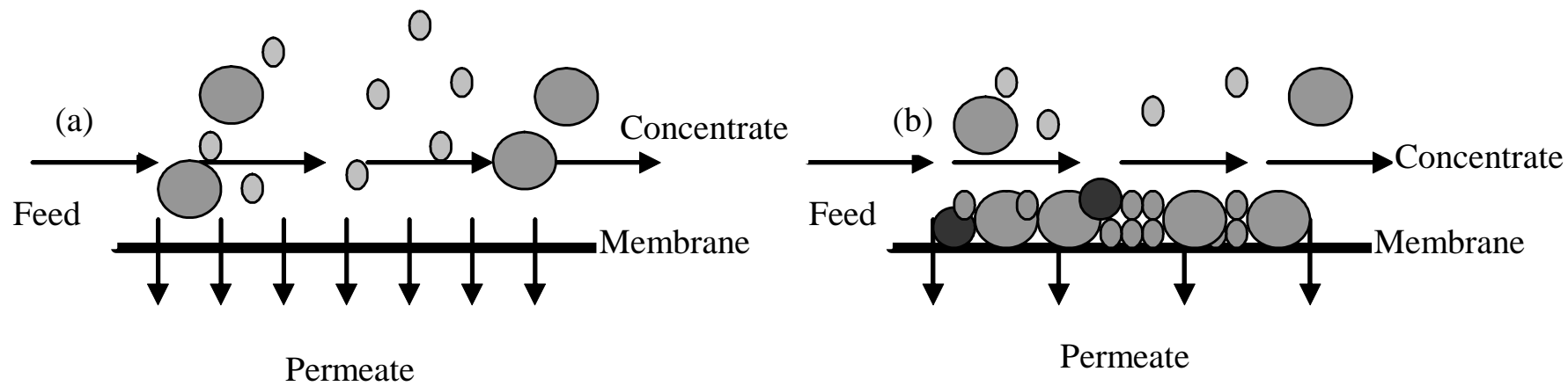
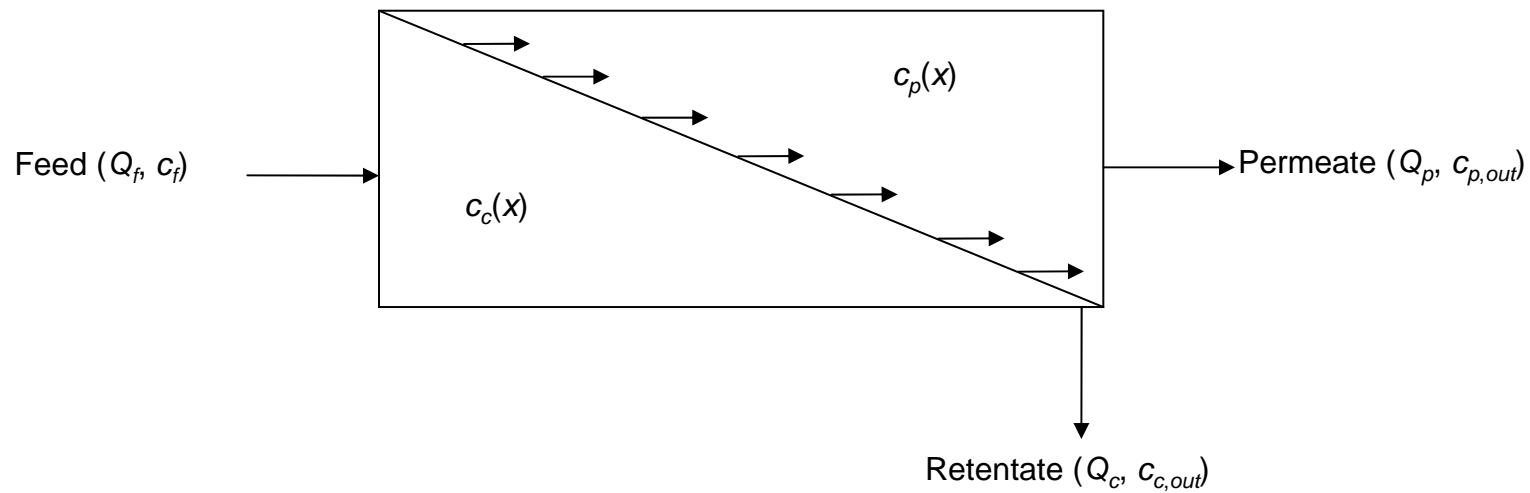
Solute or particle
rejection

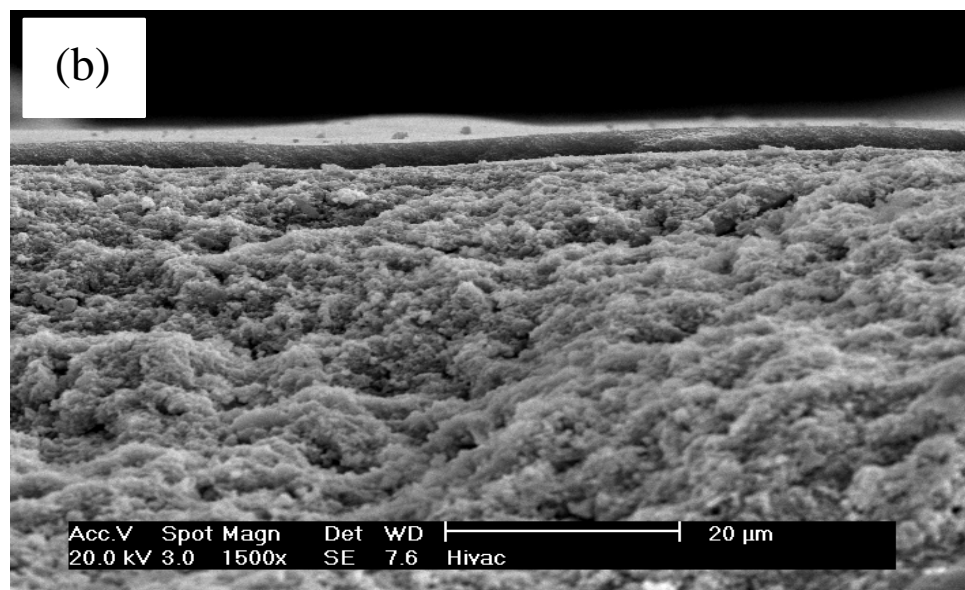
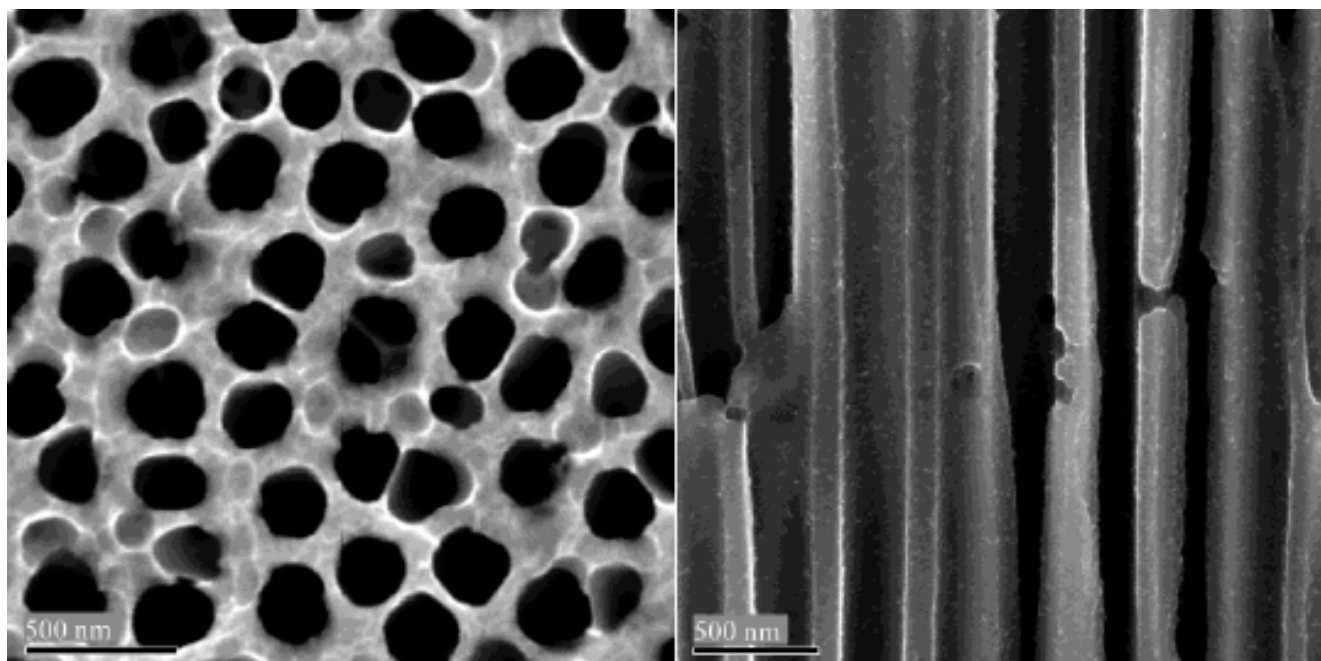
Accumulated, rejected material,
migrating back to bulk solution



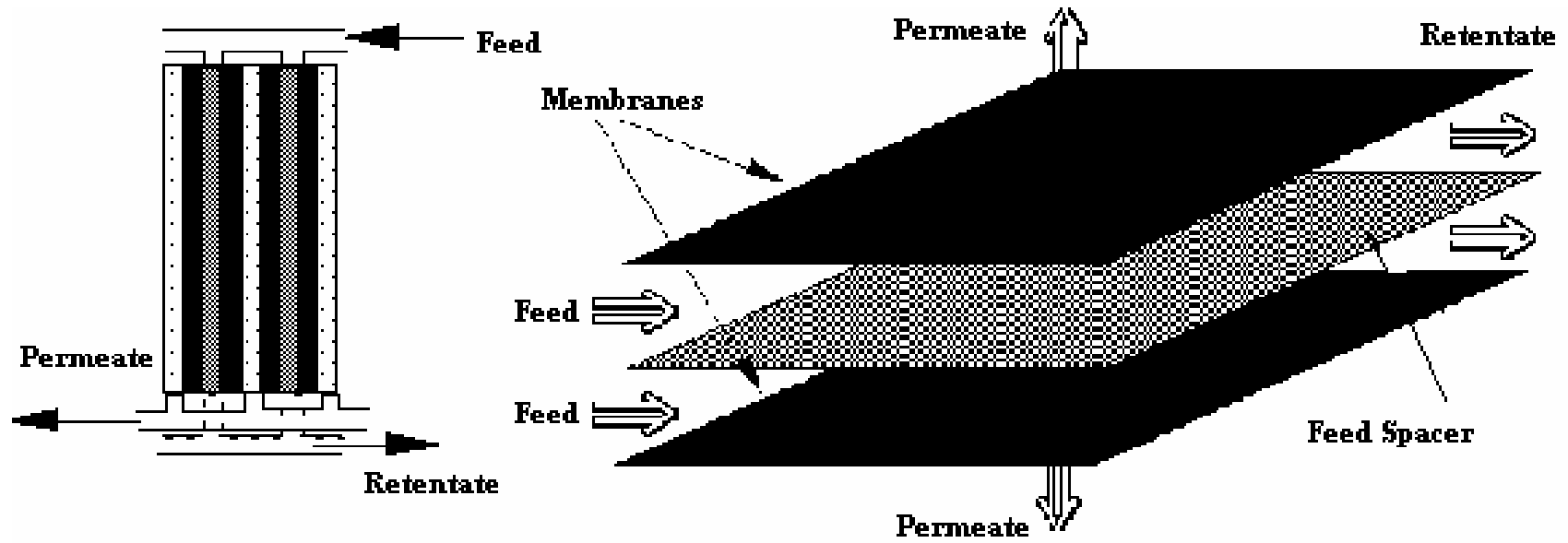
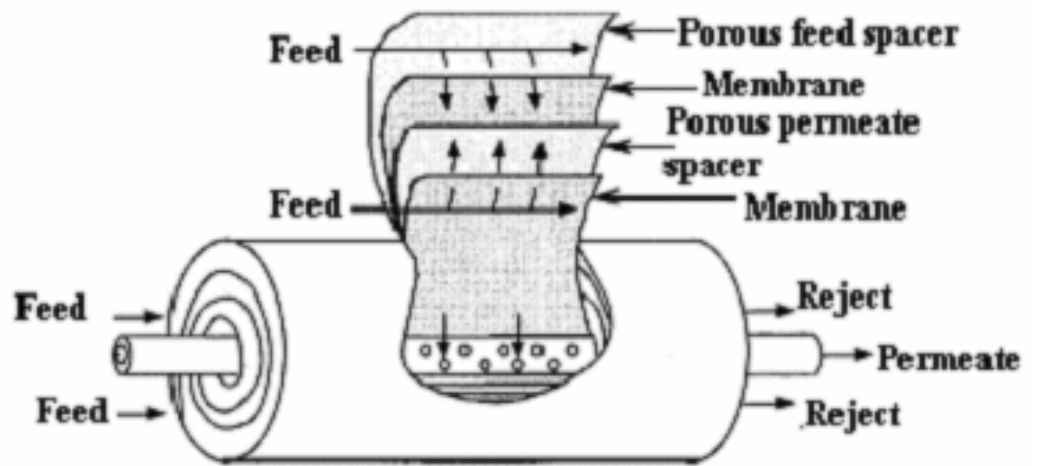
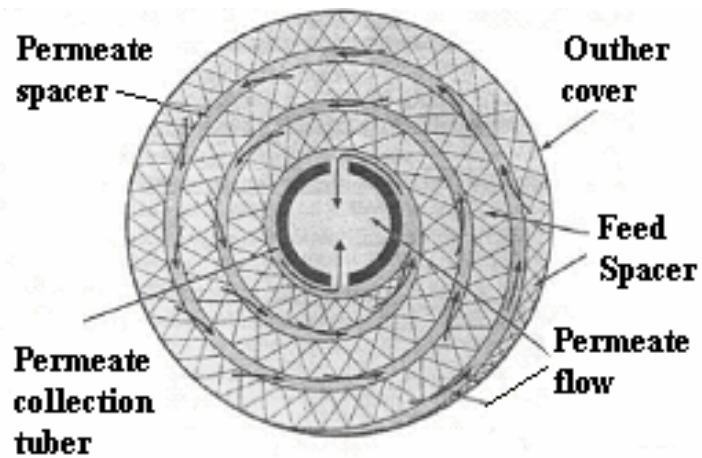
Semi-permeable (selective) membrane

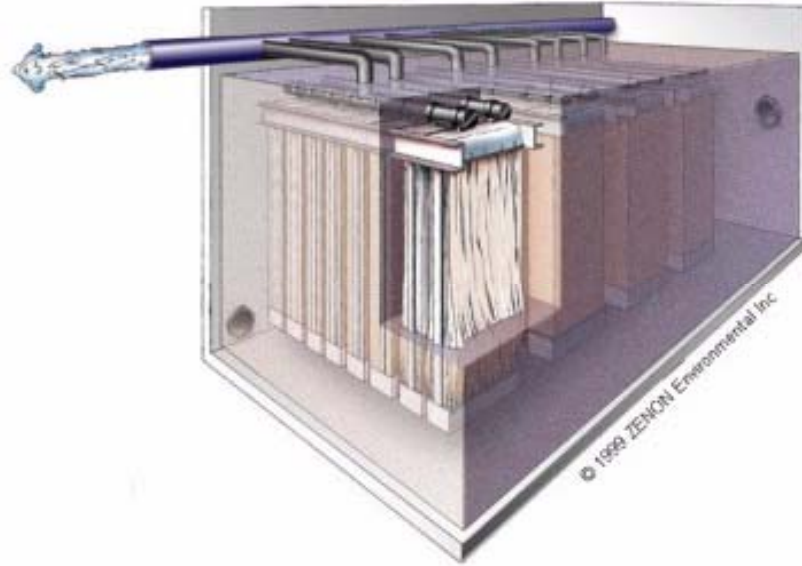
Permeate





Membrane
cross section





Membrane Geometry	Approximate Packing Density (m²/m³)
Capillary	5000-8000
Spiral wound	700-2000
Hollow fiber	1000-2000
Flat (plate and frame)	200-500
Tubular	100-300

<i>Membrane Process</i>	<i>Transmembrane Pressure, ΔP_{tot} (kPa)</i>	<i>System Recovery (%)^(a)</i>
Microfiltration	25 to 300	90 to 99+
Ultrafiltration	50 to 1000	85 to 95+
Nanofiltration	300 to 1500	75 to 90+
Reverse Osmosis	500 to 8000	60 to 90

(a) Defined as the ratio of permeate flow rate to feed flow rate