NOMENCLATURE

$a$ osmotic coefficient  
c solute concentration (mg/L) or (kg/m$^3$)  
c$_m$ membrane surface concentration (mg/L) (kg/m$^3$)  
c$_o$ feed concentration (mg/L) (kg/m$^3$)  
c$_p$ permeate concentration (mg/L) (kg/m$^3$)  
$c_p$ specific heat of solvent  
$D$ diffusivity (m$^2$/s)  
d$_e$ equivalent diameter (m)  
$J$ volumetric flux (m$^3$/m$^2$s)  
$J_{crit}$ critical flux  
$J_{lim}$ limiting flux  
$J_w$ water flux (m$^3$/m$^2$s)  
k mass transfer coefficient (m/s)  
$L$ effective membrane length (m)  
$L_m$ thickness of membrane skin (m)  
$L_p$ membrane permeability (m$^3$/m$^2$s Pa)  
$M$ total mass of the medium in ultrasonic bath  
m$_1$,m$_2$,m$_3$ exponents in Eq. 4.26  
$M_w$ molecular weight of solute  
n$_1$,n$_2$,n$_3$ exponents in Eq. 4.25  
$N_s$ shear stress number  
$R$ universal gas constant (J/K mole)  
$R_{ad}$ adsorption resistance (m$^{-1}$)  
$R_{cp}$ concentration polarization resistance  
$R_{cp\text{ spar}}$ concentration polarization resistance during sparging conditions (m$^{-1}$)  
$R_{cp\text{ lam}}$ concentration polarization resistance in laminar flow conditions (m$^{-1}$)  
$R_e$ Reynolds number, $u_d$$\rho$/$\mu$ (dimensionless)  
$R_m$ intrinsic membrane resistance (m$^{-1}$)  
$R_{osm}$ osmotic pressure resistance (m$^{-1}$)  
$R_p$ pore blocking resistance (m$^{-1}$)  
$R_r$ real retention  
$R_{tot}$ summation of a number of resistances