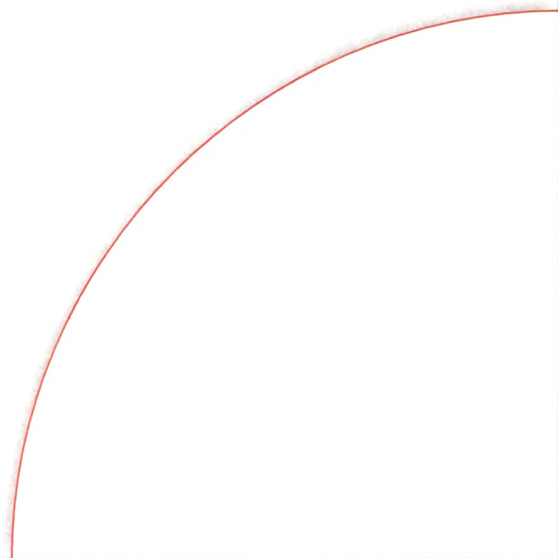




# **Nomenclature**



# NOMENCLATURE

A	Solute
B	Parameter defined by Eq.(6.14)
	Reagent
C	Solute concentration
$C_C$	Carrier concentration ( % volume based on membrane phase)
$C_e$	Instantaneous solute concentration in the external phase, M, kmol/m <sup>3</sup>
$C_{eo}$	Initial solute concentration in the external phase, feed concentration, mg/dm <sup>3</sup> also mol/dm <sup>3</sup> or kmol/m <sup>3</sup> .
$C_i$	Solute concentration in the internal depleted reagent droplets. Advancing front model.
$C_{io}$	Initial internal phase reagent concentration, M, kmol/m <sup>3</sup>
$C_m$	Solute concentration in the membrane phase of emulsion globules
$d_{32}$	Sauter mean diameter, m, mm, $\mu$ m.
$D_i$	Solute diffusivity in the internal phase, m <sup>2</sup> /s
$D_m$	Solute diffusivity in the membrane phase, m <sup>2</sup> /s
$D_{eff}$	Effective diffusivity in the emulsion, m <sup>2</sup> /s
E	Parameter defined by Eq. (6.10) in advancing front model
$h_0$	zero order perturbation term for h, defined by Eq. (6.10)
K	Distribution coefficient
<b>K</b>	Equilibrium constant, dm <sup>3</sup> /eq.
<i>M</i>	Molar ratio of NaOH to phenols
n	Total number of emulsion globules dispersed in the external continuous phase
N	Stirring speed, rpm
r	Radial coordinate, m
R	Globule radius, m
$R_f$	Reaction front position , m.
t	Time, s

TR	Treat ratio, volume of emulsion to volume of feed.
$V_e$	External phase volume, $m^3$
$V_i$	Total volume of the internal reagent phase, $m^3$
$V_m$	Total membrane phase volume, $m^3$
$W_{surf}$	Surfactant concentration in the membrane phase, % wt based on membrane phase. Usually denotes Span 80 concentration in the membrane phase.

#### Greek alphabets

$\alpha$	Distribution coefficient for solute between the external phase and the exhausted emulsion mixture at equilibrium, used in advancing front model.
$\alpha'$	Distribution coefficient for the solute between the external and membrane phases at equilibrium, $\alpha' = K$ .
$\varepsilon$	Perturbation parameter defined by Eq. (6.10)
$\phi$	Internal phase volume fraction of the emulsion.
$\eta$	Viscosity, mPa s also $r/R$ defined in Eq. (6.10)
$\tau$	Dimensionless time defined as $\varepsilon D_{eff}/R^2$