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^3
C_{eo}	Initial solute concentration in the external phase, feed concentration, mg/dm^3 also mol/dm^3 or kmol/m^3.
C_i	Solute concentration in the internal depleted reagent droplets. Advancing front model.
C_{io}	Initial internal phase reagent concentration, M, kmol/m^3
C_m	Solute concentration in the membrane phase of emulsion globules
d_{32}	Sauter mean diameter, m, mm, μm.
D_i	Solute diffusivity in the internal phase, m^2/s
D_m	Solute diffusivity in the membrane phase, m^2/s
D_{eff}	Effective diffusivity in the emulsion, m^2/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
K	Equilibrium constant, dm^3/eq.
M	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

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