$$k'_{ET} = \sum_{j=1}^{\#dye} \left(\frac{R_0}{R_j} \right)^6 \quad (3)$$

$$k_D = \tau_D^{-1} \quad (2)$$

$$p = 1 - e^{-(k_D + k'_{ET})\Delta_t} \quad (1)$$

$$P_{TE} = \frac{k_{TE}}{k_{TE} + k_D} \quad (4)$$

$$P_D = \frac{k_D}{k_{TE} + k_D} \quad (5)$$

$$N = \frac{D}{\epsilon} \quad (1)$$

$$N\Delta_t = \tau_D \quad (2)$$

$$N = D/\epsilon \quad (3)$$

$$R_j \quad (4)$$

$$R_{j_{new}} \tag{5}$$

$$p = 1 - e^{-k_{ET}\Delta t} \tag{4}$$

$$p = 1 - e^{-k'_{ET}\Delta t} \tag{5}$$

$$L_D \tag{5}$$

$$L_{D_{simulado}} \tag{5}$$

$$L_{D_{simulado}} = \sqrt{\frac{\sum_{i=1}^{j} d_i^2}{j}} \tag{7}$$

$$L_D = \sqrt{N}\epsilon = \sqrt{D\epsilon} \tag{6}$$

$$k_D \tag{5}$$

$$E = \sum_{j=1}^{3} \frac{1}{n_j} \sum_{i=1}^{n_j} (Q_{e_i} - Q_{s_i})^2 \tag{8}$$