## ———— FULL POLIMERIZATION —

Initiation:	$D^{\bullet} + M \xrightarrow{k_{init}} R^{\bullet}$	$\mathbf{k_{init}}$	$\approx M^{-1}c^{-1}$
Propagation:	$R^{\bullet} + M \xrightarrow{k_{prop}} \sim P_1^{\bullet}$	$\mathbf{k_{prop}}$	$\approx M^{-1}c^{-1}$
	$\sim P_n^{\bullet} + M \xrightarrow{k_{prop}} \sim P_{n+1}^{\bullet}$	$k_{prop}$	$\approx M^{-1}c^{-1}$
	$\sim P_n^{\bullet} + X \xrightarrow{k_{trans}} X^{\bullet} + \sim P_n$	$\mathbf{k_{trans}}$	$\approx M^{-1}c^{-1}$
Termination:	$\sim P_n^{\bullet} \xrightarrow{k_{ter-lin}} \sim P_n$	$\mathbf{k_{ter-l}}$	$\approx M^{-1}c^{-1}$
	$\sim P_n^{\bullet} + \sim P_k^{\bullet} \xrightarrow{k_{ter-rec}} \sim P_n - P_k \sim$		$\approx M^{-1}c^{-1}$
	$\sim P_n^{\bullet} + \sim P_k^{\bullet} \xrightarrow{k_{ter-disp}} \sim P_{n-1} = CH_2 + \sim P_{k-1} - CH_3$	$k_{ m ter-disp}$	$\approx M^{-1}c^{-1}$

Activation: 
$$Q = \frac{h\nu, k_l}{k_{-l}}$$
  $^3Q = \frac{\mathbf{k_l}}{\mathbf{k_{-l}}} \approx 1e8 - 1e10 \quad c^{-1}$ 

Quenching:

energing:
$${}^{3}Q + DH \xrightarrow{k_{diff}} [{}^{3}Q, DH] \xrightarrow{k_{qE}} [Q^{\bullet-}, DH^{\bullet+}]_{s} \xrightarrow{k_{H+}} [QH^{\bullet}, D^{\bullet}]_{s} \xrightarrow{k_{diff}} QH^{\bullet} + D^{\bullet} \xrightarrow{k_{qE}} \approx 1e8 - 1e10 \quad M^{-1}c^{-1}$$

$$\downarrow k_{diff} \approx 1e8 - 1e10 \quad c^{-1}$$

$$\downarrow k_{diff} \approx 1e8 - 1e10 \quad c^{-1}$$

$$\downarrow k_{diff} \approx 1e8 - 1e10 \quad c^{-1}$$

$$Q_s^{\bullet-} + DH_s^{\bullet+}$$

$$^3Q+QHH$$
  $\xrightarrow{k_{qH}}$   $^2QH^{\bullet}$   $\xrightarrow{k_{dispQ}}$   $\xrightarrow{k_{dispQ}}$   $Q+QHH$   $\xrightarrow{k_{\mathbf{qH}}}$   $\approx 1e5 - 1e9$   $M^{-1}c^{-1}$   $\xrightarrow{k_{\mathbf{red/oxQ}}}$   $\approx 1e3$   $M^{-1}c^{-1}$   $\xrightarrow{k_{\mathbf{dispQ}}}$   $\approx 1e9$   $M^{-1}c^{-1}$ 

$$^3Q + QHD \xrightarrow{k_{qQD}} QH^{\bullet} + QD^{\bullet} \xrightarrow{\mathbf{k_{qQD}}} \approx ? M^{-1}c^{-1}$$
 $^3Q \xrightarrow{k_{qPh}} \text{prod} \xrightarrow{\mathbf{k_{qPh}}} \approx 1e9 (1e-5) c^{-1}$ 

Others

her:  

$$Q + D^{\bullet} \xrightarrow{k_D} QD^{\bullet} \xrightarrow{\mathbf{k_D}} \approx ?(1) \xrightarrow{M^{-1}c^{-1}}$$

$$QH^{\bullet} + D^{\bullet} \xrightarrow{k_r} QHD \xrightarrow{k_p} QHH + \text{N-prod} \xrightarrow{\mathbf{k_r}} \approx ?(1e9) \xrightarrow{M^{-1}c^{-1}}$$

$$\mathbf{k_p} \approx 1e-5 - 1e-3 \xrightarrow{c^{-1}}$$

$$2D^{\bullet} \xrightarrow{k_{rD}} \text{N-prod} \quad \underline{\mathbf{k_{rD}}} \approx ? \text{ (1e9)} \quad M^{-1}c^{-1}$$

\_\_\_\_\_\_ SIMPLE SYSTEM —

**Activation:** 
$$Q = \frac{h\nu, k_l}{k_{-l}}$$
  $^3Q = \frac{\mathbf{k_l}}{\mathbf{k_{-l}}} \approx 1e8 - 1e10 \quad c^{-1}$ 

Quenching:

$${}^{3}Q+DH \xrightarrow{k_{H+}} QH^{\bullet}+D^{\bullet} \xrightarrow{\mathbf{k_{H+}}} \approx 1e8 - 1e10 \quad M^{-1}c^{-1}$$

$${}^{3}Q+QHH \xrightarrow{k_{qH}} 2QH^{\bullet} \xrightarrow{k_{redQ}} Q+QHH \xrightarrow{\mathbf{k_{qH}}} \approx 1e5 - 1e9 \quad M^{-1}c^{-1}$$

$${}^{4}\mathbf{k_{redQ}} \approx 1e9 \quad M^{-1}c^{-1}$$

Other:

her:
$$QH^{\bullet} + D^{\bullet} \xrightarrow{k_r} QHD \quad \mathbf{k_r} \approx ?(1e9) \quad c^{-1}$$

$$2D^{\bullet} \xrightarrow{k_{rD}} \text{N-prod} \quad \mathbf{k_{rD}} \approx ? (1e9) \quad c^{-1}$$