

COMSOL was employed to model cyclic voltammetry of adsorption-coupled electron-transfer reactions [1]. The symbols used in the COMSOL simulation correspond to those of the model reported in Supplementary Materials of ref. 1 as follows.

[1] D.C. Janda, K. Barma, N. Kurapati, O.V. Klymenko, A. Oleinick, I. Svir, C. Amatore, S. Amemiya, Systematic assessment of adsorption-coupled electron transfer toward voltammetric discrimination between concerted and non-concerted mechanisms, *Electrochim. Acta*, 428 (2022) 140912.

## Case II

### Non-Concerted Mechanim

COMSOL	Model
lamdades	$\lambda_{des}^0$
kappa	$\kappa$
rho	$\rho_0$
lamdaIS	$\Lambda_{IS}^{0ads}$
Esw	switching potential
Erange	potential scan range
alpha	$\alpha$
Vet	$V_{IS}^{0ads}$
Vads	$V_{ads}^0$
Es	$E - E_{IS}^{0',0ads}$
theta	$\xi_{OS}^0$
c	$C_0$
u	$\theta_0$
u2	$\theta_R$

### Concerted Mechanim

COMSOL	Model
lamdaC	$\Lambda_C^0$
thetaC	$\xi_C^0$

### Case III

#### Non-Concerted Mechanim

COMSOL	Model
lamdades	$\lambda_{\text{des}}^{\text{R}}$
kappa	$\kappa$
rho	$\rho_{\text{R}}$
lamdaOS	$\Lambda_{\text{OS}}^{\text{O}}$
Esw	switching potential
Erange	potential scan range
alpha	$\alpha$
Vet	$V_{\text{OS}}^{\text{O}}$
Vads	$V_{\text{ads}}^{\text{R}}$
Es	$E - E_{\text{OS}}^{\text{O},\text{O}}$
theta	$\xi_{\text{OS}}^{\text{O}}$
c	$C_{\text{O}}$
c2	$C_{\text{R}}$
u	$\theta_{\text{R}}$

#### Concerted Mechanim

COMSOL	Model
lamdaC	$\Lambda_{\text{C}}^{\text{O}}$
thetaC	$\xi_{\text{C}}^{\text{O}}$