

# Mechanistic Analysis of Ion Association between Dendrigrraft Poly- l -lysine and 8-Anilino-1-naphthalenesulfonate at Liquid|Liquid Interfaces

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**Supporting Information**

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Dendrigraft Poly-L-lysine and 8-Anilino-1-naphthalenesulfonate  
at Liquid|Liquid Interfaces**

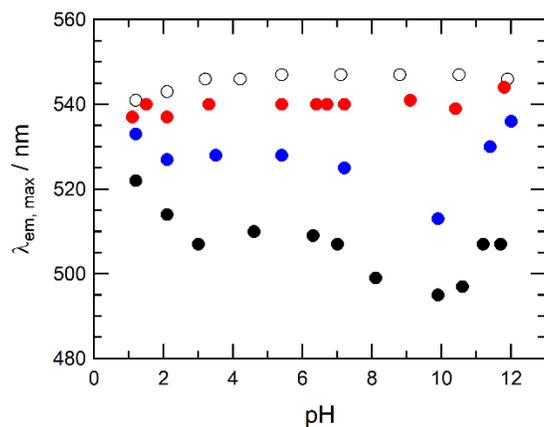
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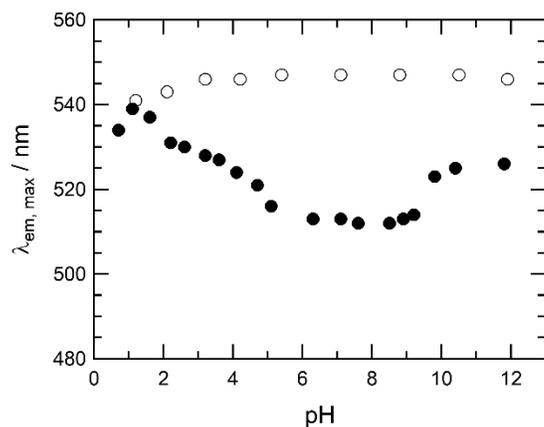
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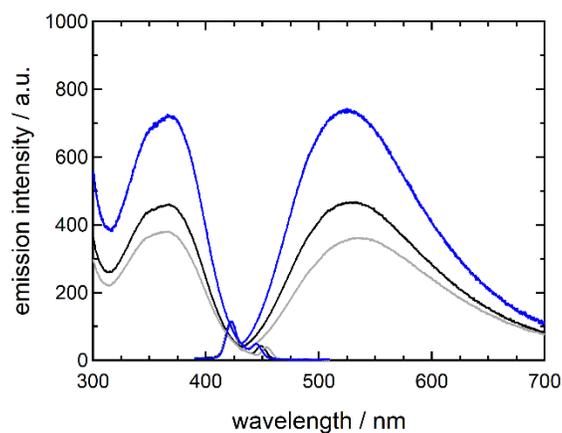
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**Figure S1.** The pH dependences of emission maximum wavelength ( $\lambda_{em,max}$ ) of ANS in the presence of DGL-G2 (red), G3 (blue), and G4 (black) in the aqueous solution. The open circles refer to ANS in the absence of DGL. The concentration of ANS and DGLs was  $1.0 \times 10^{-5} \text{ mol dm}^{-3}$ . The excitation wavelength was 370 nm.



**Figure S2.** The pH dependences of emission maximum wavelength ( $\lambda_{em,max}$ ) of ANS in the presence of the G4 PAMAM dendrimer in the aqueous solution. The closed and open circles depict the G4 PAMAM-ANS and ANS systems. The concentration of ANS and the G4 PAMAM dendrimer was  $1.0 \times 10^{-5} \text{ mol dm}^{-3}$ . The excitation wavelength was 370 nm.



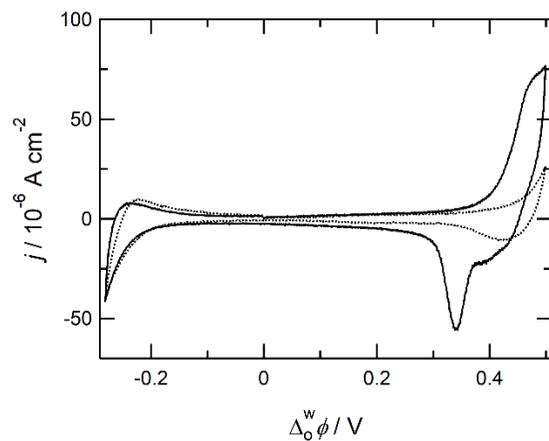
**Figure S3.** Excitation and emission spectra of ANS in aqueous solution in the presence of equimolar DGL-G3. The blue lines refer to the DGL-G3-ANS (pH 7.2) system in the absence of phosphate buffer. The black and gray lines depict the spectra measured in the presence of  $1.0 \times 10^{-3}$  mol dm $^{-3}$  (pH 7.0) and  $5.0 \times 10^{-3}$  mol dm $^{-3}$  phosphate buffers (pH 7.1), respectively.

**Table S1. Emission maximum wavelength ( $\lambda_{em,max}$ ) of ANS and relative fluorescence intensity ( $I_{em,DGL+ANS}/I_{em,ANS}$ ) at pH 7 in the presence of dendritic polymer**

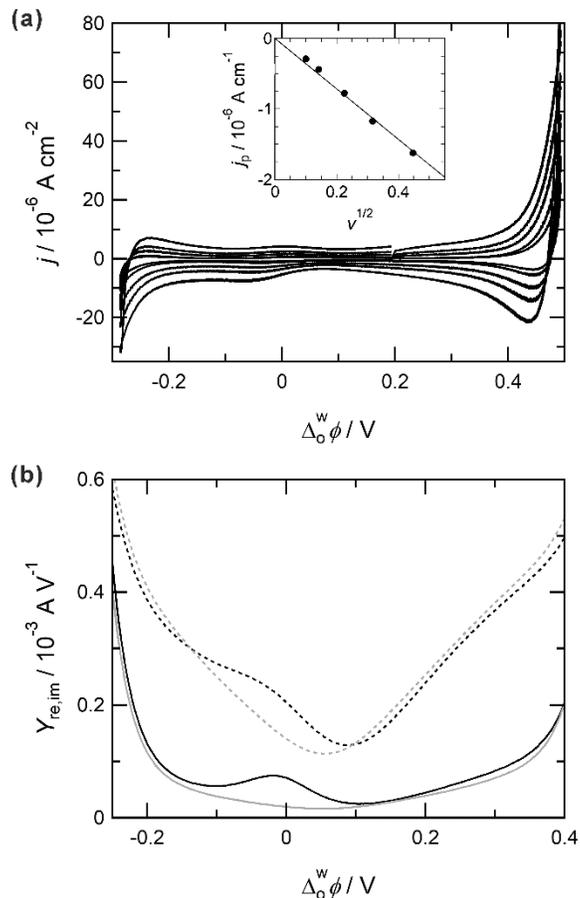
	$\lambda_{em,max} / \text{nm}^a$	$I_{em,D+ANS}/I_{em,ANS}^b$
DGL-G4 + ANS	507	9.3
DGL-G3 + ANS	525	2.8
DGL-G2 + ANS	540	1.3
G4 PAMAM + ANS	513	5.9
ANS	547	

<sup>a</sup>  $\lambda_{em,max}$  was measured at pH 7.0–7.2.

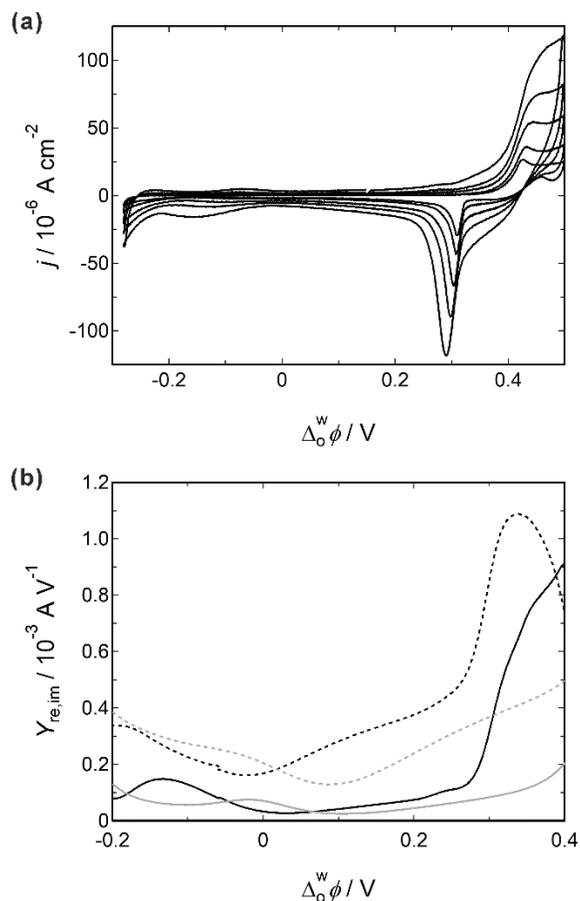
<sup>b</sup>  $I_{em,D+ANS}$  and  $I_{em,ANS}$  denote the emission intensities in the presence and absence of the dendritic polymer.



**Figure S4.** Effects of the organic electrolyte concentration on the cyclic voltammogram of DGL-G3. The concentrations of BTTPATPFB in DCE were  $5.0 \times 10^{-6} \text{ mol dm}^{-3}$  (solid line) and  $1.0 \times 10^{-6} \text{ mol dm}^{-3}$  (dotted line), respectively. The potential sweep rate was  $0.10 \text{ V s}^{-1}$ .



**Figure S5.** (a) Typical cyclic and (b) ac voltammograms measured for ANS at pH 7.2. (a) Inset: Linear relationship between negative peak currents ( $j_p$ ) and square root of potential sweep rates ( $v^{1/2}$ ). The potential sweep rates were (a) 0.010, 0.020, 0.050, 0.10, 0.20  $\text{V s}^{-1}$  and (b) 0.005  $\text{V s}^{-1}$ , respectively. The concentration of ANS was  $1.0 \times 10^{-5} \text{ mol dm}^{-3}$ . (b) The solid and dashed lines refer to the real ( $Y_{\text{re}}$ ) and imaginary ( $Y_{\text{im}}$ ) components of the admittance. The black and gray lines depict the admittance in the presence and absence of ANS. The amplitude of ac potential modulation was 10 mV at 7 Hz.



**Figure S6.** (a) Typical cyclic and (b) ac voltammograms measured in the presence of equimolar G4 PAMAM dendrimer and ANS at pH 7.0. The potential sweep rates were (a) 0.010, 0.020, 0.050, 0.10, 0.20  $\text{V s}^{-1}$  and (b) 0.005  $\text{V s}^{-1}$ , respectively. The concentration of ANS and the G4 PAMAM dendrimer was  $1.0 \times 10^{-5} \text{ mol dm}^{-3}$ . (b) The solid and dashed lines refer to the real ( $Y_{\text{re}}$ ) and imaginary ( $Y_{\text{im}}$ ) components of the admittance. The black and gray lines depict the admittance in the presence and absence of the G4 PAMAM dendrimer. The amplitude of ac potential modulation was 10 mV at 7 Hz.