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APPENDICES

APPENDIX A

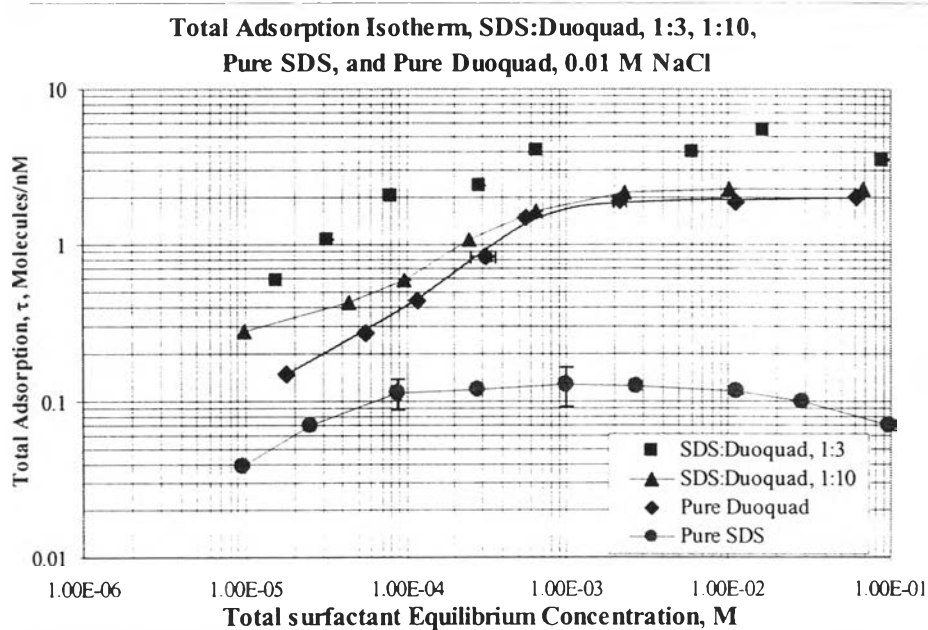


Figure A-1 Total Adsorption Isotherm, SDS/Duoquad (or PADD), 1:3, 1:10, pure SDS and pure Duoquad onto silica surface at electrolyte concentration of 0.01 M NaCl, temperature 25°C.

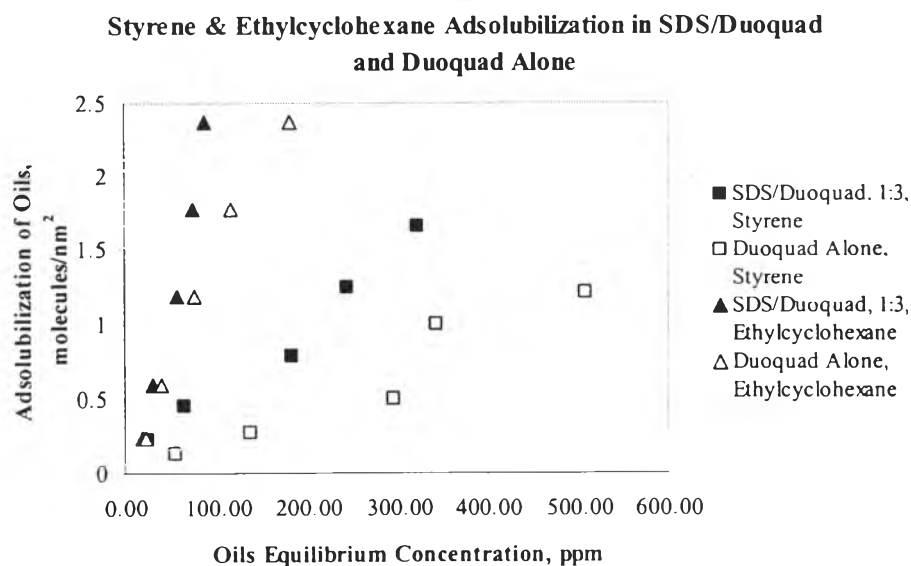


Figure A-2 Adsolubilization of styrene and ethylcyclohexane in SDS/Duoquad (or PADD) and Duoquad alone onto silica surface at electrolyte concentration of 0.01 M NaCl, temperature 25°C.

APPENDIX B

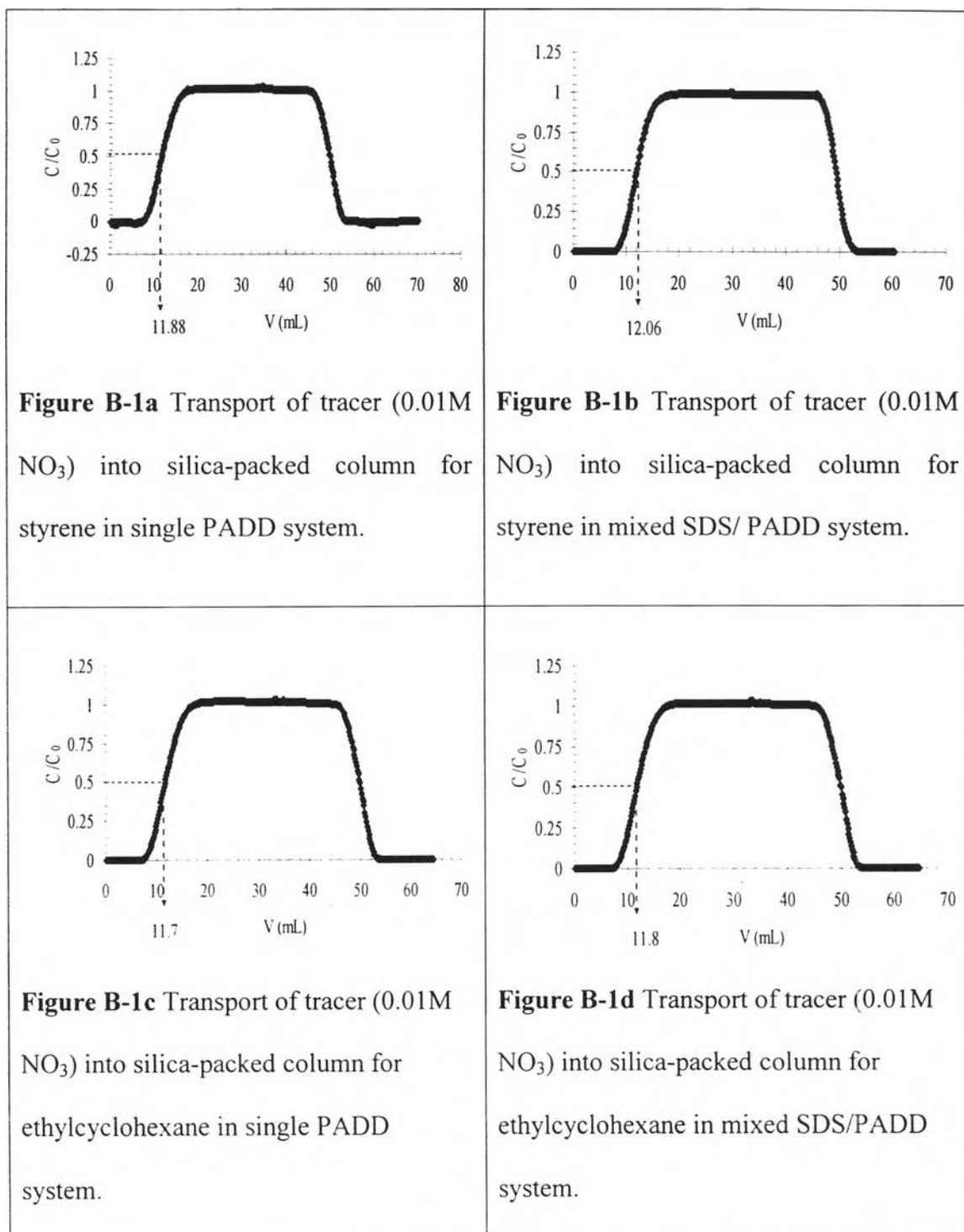


Figure B-1 Transports of tracer (0.01M NO_3) into silica-packed columns.

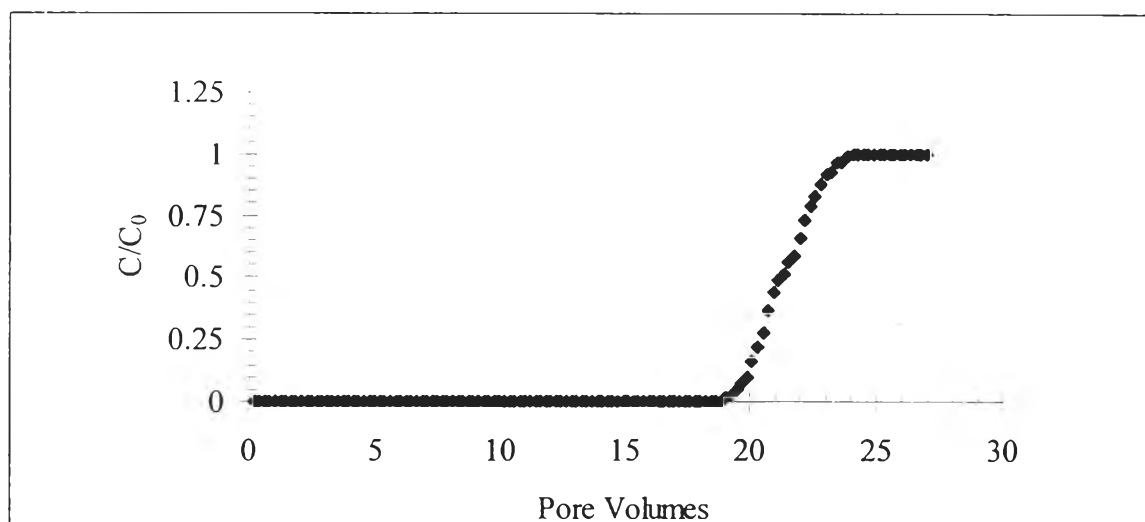


Figure B-2a Adsorption of individual cationic surfactants (PADD) 3 mM onto silica surface in the mixed surfactants system at electrolyte concentration of 0.01 M NaCl and temperature of 25 °C.

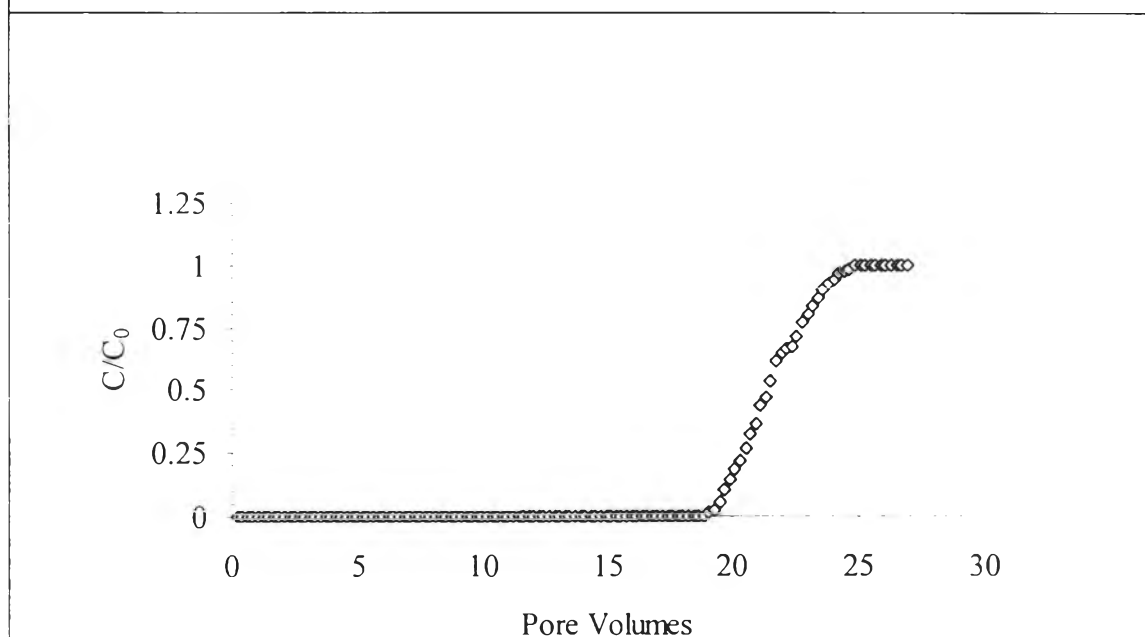


Figure B-2b Adsorption of individual anionic surfactants (SDS) 1 mM into silica-packed column in the mixed surfactants system at electrolyte concentration of 0.01 M NaCl and temperature of 25 °C.

Figure B-2 Adsorption of individual anionic and cationic surfactants onto silica surface in the mixed surfactants system at electrolyte concentration of 0.01 M NaCl and temperature of 25 °C.

APPENDIX C

Equation C-1 Calculations of the adsorption of surfactants and adsolubilization of organic solutes by using mass balance (Knox et al., 1993).

$$\text{Mass of chemical adsorbed } (q) = (\text{Mass entering column} - \text{Mass exiting column} - \text{Mass in pore water}) / Wg$$

Therefore

$$q = \frac{(C_0 \cdot V - [CdV - C_0 \cdot V_{pw}])}{Wg}$$

where

q = Mass of chemical adsorbed (mole/g)

C_0 = Initial chemical concentration (M)

V = Volume of Chemical injected (L)

V_{pw} = Volume of pore water (L)

Wg = Weight of solid surface (g)

The adsorption of surfactants and adsolubilization of organic solutes can also be expressed as molecules/surface area as this equation (adapted from Scamhorn, et al., 1981).

$$q_{\text{molecules/nm}^2} = q_{\text{mole/gram}} \times \text{Avogadro's_number}_{\text{molecules/mole}} \times \frac{1}{SSA} \times \frac{1_{\text{m}^2}}{10^{18}_{\text{nm}^2}}$$

Where: SSA = Specific surface area of the adsorbent, m²/g.

Table C-1 The adsorption of single PADD 20 mM into silica-packed column at electrolyte concentration of 0.01 M NaCl and temperature 25 °C.

Sample	Absorbance (PADD) (V)	Concentration (PADD) (M)	C/C0	Vadjusted (L)	Pore Volume (Vadjusted/V0)	Timeadjusted (min.)	Area (jCdV) (mole)
1	0.0000	0.0000	0.0000	0.0001	0.0085	0.2778	0.00E+00
2	0.0000	0.0000	0.0000	0.0003	0.0250	0.8111	0.00E+00
3	0.0000	0.0000	0.0000	0.0005	0.0414	1.3444	0.00E+00
4	0.0000	0.0000	0.0000	0.0007	0.0578	1.8778	0.00E+00
5	0.0000	0.0000	0.0000	0.0009	0.0742	2.4111	0.00E+00
6	0.0000	0.0000	0.0000	0.0011	0.0906	2.9444	0.00E+00
7	0.0000	0.0000	0.0000	0.0013	0.1070	3.4778	0.00E+00
8	0.0000	0.0000	0.0000	0.0014	0.1234	4.0111	0.00E+00
9	0.0000	0.0000	0.0000	0.0016	0.1398	4.5444	0.00E+00
10	0.0000	0.0000	0.0000	0.0018	0.1562	5.0778	0.00E+00
11	0.0000	0.0000	0.0000	0.0020	0.1726	5.6111	0.00E+00
12	0.0000	0.0000	0.0000	0.0022	0.1891	6.1444	0.00E+00
13	0.0000	0.0000	0.0000	0.0024	0.2055	6.6778	0.00E+00
14	0.0000	0.0000	0.0000	0.0026	0.2219	7.2111	0.00E+00
15	0.0000	0.0000	0.0000	0.0028	0.2383	7.7444	0.00E+00
16	0.0000	0.0000	0.0000	0.0030	0.2547	8.2778	0.00E+00
17	0.0000	0.0000	0.0000	0.0032	0.2711	8.8111	0.00E+00
18	0.0000	0.0000	0.0000	0.0034	0.2875	9.3444	0.00E+00
19	0.0000	0.0000	0.0000	0.0036	0.3039	9.8778	0.00E+00
20	0.0000	0.0000	0.0000	0.0037	0.3203	10.4111	0.00E+00
21	0.0000	0.0000	0.0000	0.0039	0.3368	10.9444	0.00E+00
22	0.0000	0.0000	0.0000	0.0041	0.3532	11.4778	0.00E+00
23	0.0000	0.0000	0.0000	0.0043	0.3696	12.0111	0.00E+00
24	0.0000	0.0000	0.0000	0.0045	0.3860	12.5444	0.00E+00

Table C-1 The adsorption of single PADD 20 mM into silica-packed column at electrolyte concentration of 0.01 M NaCl and temperature 25 °C.

(Continue).

Sample	Absorbance (PADD) (V)	Concentration (PADD) (M)	C/C0	Vadjusted (L)	Pore Volume (Vadjusted/V0)	Timeadjusted (min.)	Area (∫CdV) (mole)
25	0.0000	0.0000	0.0000	0.0047	0.4024	13.0778	0.00E+00
26	0.0000	0.0000	0.0000	0.0049	0.4188	13.6111	0.00E+00
27	0.0000	0.0000	0.0000	0.0051	0.4352	14.1444	0.00E+00
28	0.0000	0.0000	0.0000	0.0053	0.4516	14.6778	0.00E+00
29	0.0000	0.0000	0.0000	0.0055	0.4680	15.2111	0.00E+00
30	0.0000	0.0000	0.0000	0.0057	0.4844	15.7444	0.00E+00
31	0.0000	0.0000	0.0000	0.0059	0.5009	16.2778	0.00E+00
32	0.0000	0.0000	0.0000	0.0061	0.5173	16.8111	0.00E+00
33	0.0000	0.0000	0.0000	0.0062	0.5337	17.3444	0.00E+00
34	0.0000	0.0000	0.0000	0.0064	0.5501	17.8778	0.00E+00
35	0.0000	0.0000	0.0000	0.0066	0.5665	18.4111	0.00E+00
36	0.0000	0.0000	0.0000	0.0068	0.5829	18.9444	0.00E+00
37	0.0000	0.0000	0.0000	0.0070	0.5993	19.4778	0.00E+00
38	0.0000	0.0000	0.0000	0.0072	0.6157	20.0111	0.00E+00
39	0.0000	0.0000	0.0000	0.0074	0.6321	20.5444	0.00E+00
40	0.0000	0.0000	0.0000	0.0076	0.6485	21.0778	0.00E+00
41	0.0000	0.0000	0.0000	0.0078	0.6650	21.6111	0.00E+00
42	0.0000	0.0000	0.0000	0.0080	0.6814	22.1444	0.00E+00
43	0.0000	0.0000	0.0000	0.0082	0.6978	22.6778	0.00E+00
44	0.0000	0.0000	0.0000	0.0084	0.7142	23.2111	0.00E+00
45	0.0000	0.0000	0.0000	0.0085	0.7306	23.7444	0.00E+00
46	0.0000	0.0000	0.0000	0.0087	0.7470	24.2778	0.00E+00

Table C-1 The adsorption of single PADD 20 mM into silica-packed column at electrolyte concentration of 0.01 M NaCl and temperature 25 °C.

(Continue).

Sample	Absorbance (PADD) (V)	Concentration (PADD) (M)	C/C0	Vadjusted (L)	Pore Volume (Vadjusted/V0)	Timeadjusted (min.)	Area (\int CdV) (mole)
47	0.0000	0.0000	0.0000	0.0089	0.7634	24.8111	0.00E+00
48	0.0000	0.0000	0.0000	0.0091	0.7798	25.3444	0.00E+00
49	0.0000	0.0000	0.0000	0.0093	0.7962	25.8778	0.00E+00
50	0.0000	0.0000	0.0000	0.0095	0.8126	26.4111	0.00E+00
51	0.0000	0.0000	0.0000	0.0097	0.8291	26.9444	0.00E+00
52	0.0000	0.0000	0.0000	0.0099	0.8455	27.4778	0.00E+00
53	0.0000	0.0000	0.0000	0.0101	0.8619	28.0111	0.00E+00
54	0.0000	0.0000	0.0000	0.0103	0.8783	28.5444	0.00E+00
55	0.0000	0.0000	0.0000	0.0105	0.8947	29.0778	0.00E+00
56	0.0000	0.0000	0.0000	0.0107	0.9111	29.6111	0.00E+00
57	0.0000	0.0000	0.0000	0.0109	0.9275	30.1444	0.00E+00
58	0.0000	0.0000	0.0000	0.0110	0.9439	30.6778	0.00E+00
59	0.0000	0.0000	0.0000	0.0112	0.9603	31.2111	0.00E+00
60	0.0000	0.0000	0.0000	0.0114	0.9768	31.7444	0.00E+00
61	0.0000	0.0000	0.0000	0.0116	0.9932	32.2778	0.00E+00
62	0.0000	0.0000	0.0000	0.0118	1.0096	32.8111	0.00E+00
63	0.0000	0.0000	0.0000	0.0120	1.0260	33.3444	0.00E+00
64	0.0000	0.0000	0.0000	0.0122	1.0424	33.8778	0.00E+00
65	0.0000	0.0000	0.0000	0.0124	1.0588	34.4111	0.00E+00
66	0.0000	0.0000	0.0000	0.0126	1.0752	34.9444	0.00E+00
67	0.0000	0.0000	0.0000	0.0128	1.0916	35.4778	0.00E+00
68	0.0000	0.0000	0.0000	0.0130	1.1080	36.0111	0.00E+00

Table C-1 The adsorption of single PADD 20 mM into silica-packed column at electrolyte concentration of 0.01 M NaCl and temperature 25 °C.

(Continue).

Sample	Absorbance (PADD) (V)	Concentration (PADD) (M)	C/C0	Vadjusted (L)	Pore Volume (Vadjusted/V0)	Timeadjusted (min.)	Area (∫CdV) (mole)
69	0.0000	0.0000	0.0000	0.0132	1.1244	36.5444	0.00E+00
70	0.0000	0.0000	0.0000	0.0133	1.1409	37.0778	0.00E+00
71	0.0000	0.0000	0.0000	0.0135	1.1573	37.6111	0.00E+00
72	0.0000	0.0000	0.0000	0.0137	1.1737	38.1444	0.00E+00
73	0.0000	0.0000	0.0000	0.0139	1.1901	38.6778	0.00E+00
74	0.0000	0.0000	0.0000	0.0141	1.2065	39.2111	0.00E+00
75	0.0000	0.0000	0.0000	0.0143	1.2229	39.7444	0.00E+00
76	0.0000	0.0000	0.0000	0.0145	1.2393	40.2778	0.00E+00
77	0.0000	0.0000	0.0000	0.0147	1.2557	40.8111	0.00E+00
78	0.0000	0.0000	0.0000	0.0149	1.2721	41.3444	0.00E+00
79	0.0000	0.0000	0.0000	0.0151	1.2885	41.8778	0.00E+00
80	0.0000	0.0000	0.0000	0.0153	1.3050	42.4111	0.00E+00
81	0.0000	0.0000	0.0000	0.0155	1.3214	42.9444	0.00E+00
82	0.0000	0.0000	0.0000	0.0157	1.3378	43.4778	0.00E+00
83	0.0000	0.0000	0.0000	0.0158	1.3542	44.0111	0.00E+00
84	0.0000	0.0000	0.0000	0.0160	1.3706	44.5444	0.00E+00
85	0.0000	0.0000	0.0000	0.0162	1.3870	45.0778	0.00E+00
86	0.0000	0.0000	0.0000	0.0164	1.4034	45.6111	0.00E+00
87	0.0000	0.0000	0.0000	0.0166	1.4198	46.1444	0.00E+00
88	0.0000	0.0000	0.0000	0.0168	1.4362	46.6778	0.00E+00
89	0.0000	0.0000	0.0000	0.0170	1.4526	47.2111	0.00E+00
90	0.0000	0.0000	0.0000	0.0172	1.4691	47.7444	0.00E+00

Table C-1 The adsorption of single PADD 20 mM into silica-packed column at electrolyte concentration of 0.01 M NaCl and temperature 25 °C.

(Continue).

Sample	Absorbance (PADD) (V)	Concentration (PADD) (M)	C/C0	Vadjusted (L)	Pore Volume (Vadjusted/V0)	Timeadjusted (min.)	Area (∫CdV) (mole)
91	0.0000	0.0000	0.0000	0.0174	1.4855	48.2778	0.00E+00
92	0.0000	0.0000	0.0000	0.0176	1.5019	48.8111	0.00E+00
93	0.0000	0.0000	0.0000	0.0178	1.5183	49.3444	0.00E+00
94	0.0000	0.0000	0.0000	0.0180	1.5347	49.8778	0.00E+00
95	0.0000	0.0000	0.0000	0.0181	1.5511	50.4111	0.00E+00
96	0.0000	0.0000	0.0000	0.0183	1.5675	50.9444	0.00E+00
97	0.0010	0.0001	0.0025	0.0185	1.5839	51.4778	4.80E-09
98	0.0010	0.0001	0.0025	0.0187	1.6003	52.0111	9.60E-09
99	0.0010	0.0001	0.0025	0.0189	1.6168	52.5444	9.60E-09
100	0.0020	0.0001	0.0050	0.0191	1.6332	53.0778	1.44E-08
101	0.0020	0.0001	0.0050	0.0193	1.6496	53.6111	1.92E-08
102	0.0030	0.0002	0.0075	0.0195	1.6660	54.1444	2.40E-08
103	0.0030	0.0002	0.0075	0.0197	1.6824	54.6778	2.88E-08
104	0.0040	0.0002	0.0100	0.0199	1.6988	55.2111	3.36E-08
105	0.0040	0.0002	0.0100	0.0201	1.7152	55.7444	3.84E-08
106	0.0050	0.0003	0.0125	0.0203	1.7316	56.2778	4.32E-08
107	0.0050	0.0003	0.0125	0.0205	1.7480	56.8111	4.80E-08
108	0.0060	0.0003	0.0150	0.0206	1.7644	57.3444	5.28E-08
109	0.0060	0.0003	0.0150	0.0208	1.7809	57.8778	5.76E-08
110	0.0070	0.0004	0.0175	0.0210	1.7973	58.4111	6.24E-08
111	0.0080	0.0004	0.0200	0.0212	1.8137	58.9444	7.20E-08
112	0.0080	0.0004	0.0200	0.0214	1.8301	59.4778	7.68E-08

Table C-1 The adsorption of single PADD 20 mM into silica-packed column at electrolyte concentration of 0.01 M NaCl and temperature 25 °C.

(Continue).

Sample	Absorbance (PADD) (V)	Concentration (PADD) (M)	C/C0	Vadjusted (L)	Pore Volume (Vadjusted/V0)	Timeadjusted (min.)	Area (∫CdV) (mole)
113	0.0100	0.0005	0.0250	0.0216	1.8465	60.0111	8.64E-08
114	0.0100	0.0005	0.0250	0.0218	1.8629	60.5444	9.60E-08
115	0.0110	0.0006	0.0275	0.0220	1.8793	61.0778	1.01E-07
116	0.0120	0.0006	0.0300	0.0222	1.8957	61.6111	1.10E-07
117	0.0120	0.0006	0.0300	0.0224	1.9121	62.1444	1.15E-07
118	0.0130	0.0007	0.0325	0.0226	1.9285	62.6778	1.20E-07
119	0.0140	0.0007	0.0350	0.0228	1.9450	63.2111	1.30E-07
120	0.0150	0.0008	0.0375	0.0229	1.9614	63.7444	1.39E-07
121	0.0160	0.0008	0.0400	0.0231	1.9778	64.2778	1.49E-07
122	0.0160	0.0008	0.0400	0.0233	1.9942	64.8111	1.54E-07
123	0.0170	0.0009	0.0425	0.0235	2.0106	65.3444	1.58E-07
124	0.0180	0.0009	0.0450	0.0237	2.0270	65.8778	1.68E-07
125	0.0190	0.0010	0.0475	0.0239	2.0434	66.4111	1.78E-07
126	0.0270	0.0014	0.0675	0.0241	2.0598	66.9444	2.21E-07
127	0.0220	0.0011	0.0550	0.0243	2.0762	67.4778	2.35E-07
128	0.0290	0.0015	0.0725	0.0245	2.0926	68.0111	2.45E-07
129	0.0240	0.0012	0.0600	0.0247	2.1091	68.5444	2.54E-07
130	0.0260	0.0013	0.0650	0.0249	2.1255	69.0778	2.40E-07
131	0.0270	0.0014	0.0675	0.0251	2.1419	69.6111	2.54E-07
132	0.0360	0.0018	0.0900	0.0253	2.1583	70.1444	3.02E-07
133	0.0310	0.0016	0.0775	0.0254	2.1747	70.6778	3.22E-07
134	0.0340	0.0017	0.0850	0.0256	2.1911	71.2111	3.12E-07

Table C-1 The adsorption of single PADD 20 mM into silica-packed column at electrolyte concentration of 0.01 M NaCl and temperature 25 °C.

(Continue).

Sample	Absorbance (PADD) (V)	Concentration (PADD) (M)	C/C0	Vadjusted (L)	Pore Volume (Vadjusted/V0)	Timeadjusted (min.)	Area (∫CdV) (mole)
135	0.0440	0.0022	0.1100	0.0258	2.2075	71.7444	3.74E-07
136	0.0400	0.0020	0.1000	0.0260	2.2239	72.2778	4.03E-07
137	0.0510	0.0026	0.1275	0.0262	2.2403	72.8111	4.37E-07
138	0.0480	0.0024	0.1200	0.0264	2.2568	73.3444	4.75E-07
139	0.0520	0.0026	0.1300	0.0266	2.2732	73.8778	4.80E-07
140	0.0560	0.0028	0.1400	0.0268	2.2896	74.4111	5.18E-07
141	0.0600	0.0030	0.1500	0.0270	2.3060	74.9444	5.57E-07
142	0.0640	0.0032	0.1600	0.0272	2.3224	75.4778	5.95E-07
143	0.0700	0.0035	0.1750	0.0274	2.3388	76.0111	6.43E-07
144	0.0740	0.0037	0.1850	0.0276	2.3552	76.5444	6.91E-07
145	0.0800	0.0040	0.2000	0.0277	2.3716	77.0778	7.39E-07
146	0.0840	0.0042	0.2100	0.0279	2.3880	77.6111	7.87E-07
147	0.0910	0.0046	0.2275	0.0281	2.4044	78.1444	8.40E-07
148	0.0970	0.0049	0.2425	0.0283	2.4209	78.6778	9.02E-07
149	0.1030	0.0052	0.2575	0.0285	2.4373	79.2111	9.60E-07
150	0.1100	0.0055	0.2750	0.0287	2.4537	79.7444	1.02E-06
151	0.1150	0.0058	0.2875	0.0289	2.4701	80.2778	1.08E-06
152	0.1230	0.0062	0.3075	0.0291	2.4865	80.8111	1.14E-06
153	0.1300	0.0065	0.3250	0.0293	2.5029	81.3444	1.21E-06
154	0.1390	0.0070	0.3475	0.0295	2.5193	81.8778	1.29E-06
155	0.1470	0.0074	0.3675	0.0297	2.5357	82.4111	1.37E-06
156	0.1580	0.0079	0.3950	0.0299	2.5521	82.9444	1.46E-06

Table C-1 The adsorption of single PADD 20 mM into silica-packed column at electrolyte concentration of 0.01 M NaCl and temperature 25 °C.

(Continue).

Sample	Absorbance (PADD) (V)	Concentration (PADD) (M)	C/C0	Vadjusted (L)	Pore Volume (Vadjusted/V0)	Timeadjusted (min.)	Area (ICdV) (mole)
157	0.1690	0.0085	0.4225	0.0301	2.5685	83.4778	1.57E-06
158	0.1790	0.0090	0.4475	0.0302	2.5850	84.0111	1.67E-06
159	0.1930	0.0097	0.4825	0.0304	2.6014	84.5444	1.79E-06
160	0.2070	0.0104	0.5175	0.0306	2.6178	85.0778	1.92E-06
161	0.2230	0.0112	0.5575	0.0308	2.6342	85.6111	2.06E-06
162	0.2350	0.0118	0.5875	0.0310	2.6506	86.1444	2.20E-06
163	0.2480	0.0124	0.6200	0.0312	2.6670	86.6778	2.32E-06
164	0.2600	0.0130	0.6500	0.0314	2.6834	87.2111	2.44E-06
165	0.2700	0.0135	0.6750	0.0316	2.6998	87.7444	2.54E-06
166	0.2800	0.0140	0.7000	0.0318	2.7162	88.2778	2.64E-06
167	0.2880	0.0144	0.7200	0.0320	2.7326	88.8111	2.73E-06
168	0.2960	0.0148	0.7400	0.0322	2.7491	89.3444	2.80E-06
169	0.3040	0.0152	0.7600	0.0324	2.7655	89.8778	2.88E-06
170	0.3120	0.0156	0.7800	0.0325	2.7819	90.4111	2.96E-06
171	0.3180	0.0159	0.7950	0.0327	2.7983	90.9444	3.02E-06
172	0.3240	0.0162	0.8100	0.0329	2.8147	91.4778	3.08E-06
173	0.3300	0.0165	0.8250	0.0331	2.8311	92.0111	3.14E-06
174	0.3350	0.0168	0.8375	0.0333	2.8475	92.5444	3.19E-06
175	0.3390	0.0170	0.8475	0.0335	2.8639	93.0778	3.24E-06
176	0.3430	0.0172	0.8575	0.0337	2.8803	93.6111	3.27E-06
177	0.3470	0.0174	0.8675	0.0339	2.8968	94.1444	3.31E-06
178	0.3500	0.0175	0.8750	0.0341	2.9132	94.6778	3.35E-06

Table C-1 The adsorption of single PADD 20 mM into silica-packed column at electrolyte concentration of 0.01 M NaCl and temperature 25 °C.

(Continue).

Sample	Absorbance (PADD) (V)	Concentration (PADD) (M)	C/C0	Vadjusted (L)	Pore Volume (Vadjusted/V0)	Timeadjusted (min.)	Area (∫CdV) (mole)
179	0.3540	0.0177	0.8850	0.0343	2.9296	95.2111	3.38E-06
180	0.3560	0.0178	0.8900	0.0345	2.9460	95.7444	3.41E-06
181	0.3600	0.0180	0.9000	0.0347	2.9624	96.2778	3.44E-06
182	0.3620	0.0181	0.9050	0.0349	2.9788	96.8111	3.47E-06
183	0.3660	0.0183	0.9150	0.0350	2.9952	97.3444	3.49E-06
184	0.3680	0.0184	0.9200	0.0352	3.0116	97.8778	3.52E-06
185	0.3700	0.0185	0.9250	0.0354	3.0280	98.4111	3.54E-06
186	0.3720	0.0186	0.9300	0.0356	3.0444	98.9444	3.56E-06
187	0.3740	0.0187	0.9350	0.0358	3.0609	99.4778	3.58E-06
188	0.3760	0.0188	0.9400	0.0360	3.0773	100.0111	3.60E-06
189	0.3770	0.0189	0.9425	0.0362	3.0937	100.5444	3.61E-06
190	0.3800	0.0190	0.9500	0.0364	3.1101	101.0778	3.63E-06
191	0.3810	0.0191	0.9525	0.0366	3.1265	101.6111	3.65E-06
192	0.3830	0.0192	0.9575	0.0368	3.1429	102.1444	3.67E-06
193	0.3840	0.0192	0.9600	0.0370	3.1593	102.6778	3.68E-06
194	0.3850	0.0193	0.9625	0.0372	3.1757	103.2111	3.69E-06
195	0.3870	0.0194	0.9675	0.0373	3.1921	103.7444	3.71E-06
196	0.3880	0.0194	0.9700	0.0375	3.2085	104.2778	3.72E-06
197	0.3890	0.0195	0.9725	0.0377	3.2250	104.8111	3.73E-06
198	0.3910	0.0196	0.9775	0.0379	3.2414	105.3444	3.74E-06
199	0.3910	0.0196	0.9775	0.0381	3.2578	105.8778	3.75E-06
200	0.3920	0.0196	0.9800	0.0383	3.2742	106.4111	3.76E-06

Table C-1 The adsorption of single PADD 20 mM into silica-packed column at electrolyte concentration of 0.01 M NaCl and temperature 25 °C.

(Continue).

Sample	Absorbance (PADD) (V)	Concentration (PADD) (M)	C/C0	Vadjusted (L)	Pore Volume (Vadjusted/V0)	Timeadjusted (min.)	Area ([CdV) (mole)
201	0.3930	0.0197	0.9825	0.0385	3.2906	106.9444	3.77E-06
202	0.3940	0.0197	0.9850	0.0387	3.3070	107.4778	3.78E-06
203	0.3950	0.0198	0.9875	0.0389	3.3234	108.0111	3.79E-06
204	0.3950	0.0198	0.9875	0.0391	3.3398	108.5444	3.79E-06
205	0.3960	0.0198	0.9900	0.0393	3.3562	109.0778	3.80E-06
206	0.3970	0.0199	0.9925	0.0395	3.3726	109.6111	3.81E-06
207	0.3980	0.0199	0.9950	0.0397	3.3891	110.1444	3.82E-06
208	0.3980	0.0199	0.9950	0.0398	3.4055	110.6778	3.82E-06
209	0.3990	0.0200	0.9975	0.0400	3.4219	111.2111	3.83E-06
210	0.4000	0.0200	1.0000	0.0402	3.4383	111.7444	3.84E-06
211	0.4000	0.0200	1.0000	0.0404	3.4547	112.2778	3.84E-06
212	0.4010	0.0201	1.0025	0.0406	3.4711	112.8111	3.84E-06
213	0.4010	0.0201	1.0025	0.0408	3.4875	113.3444	3.85E-06
214	0.4040	0.0202	1.0100	0.0410	3.5039	113.8778	3.86E-06
215	0.4040	0.0202	1.0100	0.0412	3.5203	114.4111	3.88E-06
216	0.4020	0.0201	1.0050	0.0414	3.5368	114.9444	3.87E-06
217	0.4010	0.0201	1.0025	0.0416	3.5532	115.4778	3.85E-06
218	0.4000	0.0200	1.0000	0.0418	3.5696	116.0111	3.84E-06
219	0.4000	0.0200	1.0000	0.0420	3.5860	116.5444	3.84E-06
220	0.4000	0.0200	1.0000	0.0421	3.6024	117.0778	3.84E-06
221	0.4000	0.0200	1.0000	0.0423	3.6188	117.6111	3.84E-06
222	0.4000	0.0200	1.0000	0.0425	3.6352	118.1444	3.84E-06

Table C-1 The adsorption of single PADD 20 mM into silica-packed column at electrolyte concentration of 0.01 M NaCl and temperature 25 °C.

(Continuc).

Sample	Absorbance (PADD) (V)	Concentration (PADD) (M)	C/C0	Vadjusted (L)	Pore Volume (Vadjusted/V0)	Timeadjusted (min.)	Area ($\int C dV$) (mole)
223	0.4000	0.0200	1.0000	0.0427	3.6516	118.6778	3.84E-06
224	0.4000	0.0200	1.0000	0.0429	3.6680	119.2111	3.84E-06
225	0.4000	0.0200	1.0000	0.0431	3.6844	119.7444	3.84E-06
226	0.4000	0.0200	1.0000	0.0433	3.7009	120.2778	3.84E-06
227	0.4000	0.0200	1.0000	0.0435	3.7173	120.8111	3.84E-06
228	0.4000	0.0200	1.0000	0.0437	3.7337	121.3444	3.84E-06
229	0.4000	0.0200	1.0000	0.0439	3.7501	121.8778	3.84E-06
230	0.4000	0.0200	1.0000	0.0441	3.7665	122.4111	3.84E-06
231	0.4000	0.0200	1.0000	0.0443	3.7829	122.9444	3.84E-06
232	0.4000	0.0200	1.0000	0.0445	3.7993	123.4778	3.84E-06
233	0.4000	0.0200	1.0000	0.0446	3.8157	124.0111	3.84E-06
234	0.4000	0.0200	1.0000	0.0448	3.8321	124.5444	3.84E-06
235	0.4000	0.0200	1.0000	0.0450	3.8485	125.0778	3.84E-06
236	0.4000	0.0200	1.0000	0.0452	3.8650	125.6111	3.84E-06
237	0.4000	0.0200	1.0000	0.0454	3.8814	126.1444	3.84E-06
238	0.4000	0.0200	1.0000	0.0456	3.8978	126.6778	3.84E-06
239	0.4000	0.0200	1.0000	0.0458	3.9142	127.2111	3.84E-06
240	0.4000	0.0200	1.0000	0.0460	3.9306	127.7444	3.84E-06
241	0.4000	0.0200	1.0000	0.0462	3.9470	128.2778	3.84E-06
242	0.4000	0.0200	1.0000	0.0464	3.9634	128.8111	3.84E-06
243	0.4000	0.0200	1.0000	0.0466	3.9798	129.3444	3.84E-06
244	0.4000	0.0200	1.0000	0.0468	3.9962	129.8778	3.84E-06

Table C-1 The adsorption of single PADD 20 mM into silica-packed column at electrolyte concentration of 0.01 M NaCl and temperature 25 °C.

(Continue).

Sample	Absorbance (PADD) (V)	Concentration (PADD) (M)	C/C0	Vadjusted (L)	Pore Volume (Vadjusted/V0)	Timeadjusted (min.)	Area (JCdV) (mole)
245	0.4000	0.0200	1.0000	0.0469	4.0126	130.4111	3.84E-06
246	0.4000	0.0200	1.0000	0.0471	4.0291	130.9444	3.84E-06
247	0.4000	0.0200	1.0000	0.0473	4.0455	131.4778	3.84E-06
248	0.4000	0.0200	1.0000	0.0475	4.0619	132.0111	3.84E-06
249	0.4000	0.0200	1.0000	0.0477	4.0783	132.5444	3.84E-06
250	0.4000	0.0200	1.0000	0.0479	4.0947	133.0778	3.84E-06
251	0.4000	0.0200	1.0000	0.0481	4.1111	133.6111	3.84E-06
252	0.4000	0.0200	1.0000	0.0483	4.1275	134.1444	3.84E-06
253	0.4000	0.0200	1.0000	0.0485	4.1439	134.6778	3.84E-06
254	0.4000	0.0200	1.0000	0.0487	4.1603	135.2111	3.84E-06
255	0.4000	0.0200	1.0000	0.0489	4.1768	135.7444	3.84E-06
256	0.4000	0.0200	1.0000	0.0491	4.1932	136.2778	3.84E-06
257	0.4000	0.0200	1.0000	0.0493	4.2096	136.8111	3.84E-06
258	0.4000	0.0200	1.0000	0.0494	4.2260	137.3444	3.84E-06
259	0.4000	0.0200	1.0000	0.0496	4.2424	137.8778	3.84E-06
260	0.4000	0.0200	1.0000	0.0498	4.2588	138.4111	3.84E-06
261	0.4000	0.0200	1.0000	0.0500	4.2752	138.9444	3.84E-06
262	0.4000	0.0200	1.0000	0.0502	4.2916	139.4778	3.84E-06
263	0.4000	0.0200	1.0000	0.0504	4.3080	140.0111	3.84E-06
264	0.4000	0.0200	1.0000	0.0506	4.3244	140.5444	3.84E-06
265	0.4000	0.0200	1.0000	0.0508	4.3409	141.0778	3.84E-06
266	0.4000	0.0200	1.0000	0.0510	4.3573	141.6111	3.84E-06

Table C-1 The adsorption of single PADD 20 mM into silica-packed column at electrolyte concentration of 0.01 M NaCl and temperature 25 °C.

(Continue).

Sample	Absorbance (PADD) (V)	Concentration (PADD) (M)	C/C0	Vadjusted (L)	Pore Volume (Vadjusted/V0)	Timeadjusted (min.)	Area (I _{CdV}) (mole)
267	0.4000	0.0200	1.0000	0.0512	4.3737	142.1444	3.84E-06
268	0.4000	0.0200	1.0000	0.0514	4.3901	142.6778	3.84E-06
269	0.4000	0.0200	1.0000	0.0516	4.4065	143.2111	3.84E-06
270	0.4000	0.0200	1.0000	0.0517	4.4229	143.7444	3.84E-06
271	0.4000	0.0200	1.0000	0.0519	4.4393	144.2778	3.84E-06
272	0.4000	0.0200	1.0000	0.0521	4.4557	144.8111	3.84E-06
273	0.4000	0.0200	1.0000	0.0523	4.4721	145.3444	3.84E-06
274	0.4000	0.0200	1.0000	0.0525	4.4885	145.8778	3.84E-06
275	0.4000	0.0200	1.0000	0.0527	4.5050	146.4111	3.84E-06
276	0.4000	0.0200	1.0000	0.0529	4.5214	146.9444	3.84E-06
277	0.4000	0.0200	1.0000	0.0531	4.5378	147.4778	3.84E-06
278	0.4000	0.0200	1.0000	0.0533	4.5542	148.0111	3.84E-06
279	0.4000	0.0200	1.0000	0.0535	4.5706	148.5444	3.84E-06
280	0.4000	0.0200	1.0000	0.0537	4.5870	149.0778	3.84E-06
281	0.4000	0.0200	1.0000	0.0539	4.6034	149.6111	3.84E-06
282	0.4000	0.0200	1.0000	0.0541	4.6198	150.1444	3.84E-06
283	0.4000	0.0200	1.0000	0.0542	4.6362	150.6778	3.84E-06
284	0.4000	0.0200	1.0000	0.0544	4.6526	151.2111	3.84E-06
285	0.4000	0.0200	1.0000	0.0546	4.6691	151.7444	3.84E-06
286	0.4000	0.0200	1.0000	0.0548	4.6855	152.2778	3.84E-06
287	0.4000	0.0200	1.0000	0.0550	4.7019	152.8111	3.84E-06
288	0.4000	0.0200	1.0000	0.0552	4.7183	153.3444	3.84E-06

Table C-1 The adsorption of single PADD 20 mM into silica-packed column at electrolyte concentration of 0.01 M NaCl and temperature 25 °C.

(Continue).

Sample	Absorbance (PADD) (V)	Concentration (PADD) (M)	C/C0	Vadjusted (L)	Pore Volume (Vadjusted/V0)	Timeadjusted (min.)	Area (∫CdV) (mole)
289	0.4000	0.0200	1.0000	0.0554	4.7347	153.8778	3.84E-06
290	0.4000	0.0200	1.0000	0.0556	4.7511	154.4111	3.84E-06
291	0.4000	0.0200	1.0000	0.0558	4.7675	154.9444	3.84E-06
292	0.4000	0.0200	1.0000	0.0560	4.7839	155.4778	3.84E-06
293	0.4000	0.0200	1.0000	0.0562	4.8003	156.0111	3.84E-06
294	0.4000	0.0200	1.0000	0.0564	4.8168	156.5444	3.84E-06
295	0.4000	0.0200	1.0000	0.0565	4.8332	157.0778	3.84E-06
296	0.4000	0.0200	1.0000	0.0567	4.8496	157.6111	3.84E-06
297	0.4000	0.0200	1.0000	0.0569	4.8660	158.1444	3.84E-06
298	0.4000	0.0200	1.0000	0.0571	4.8824	158.6778	3.84E-06
299	0.4000	0.0200	1.0000	0.0573	4.8988	159.2111	3.84E-06
300	0.4000	0.0200	1.0000	0.0575	4.9152	159.7444	3.84E-06
301	0.4000	0.0200	1.0000	0.0577	4.9316	160.2778	3.84E-06
302	0.4000	0.0200	1.0000	0.0579	4.9480	160.8111	3.84E-06
303	0.4000	0.0200	1.0000	0.0581	4.9644	161.3444	3.84E-06
304	0.4000	0.0200	1.0000	0.0583	4.9809	161.8778	3.84E-06
305	0.4000	0.0200	1.0000	0.0585	4.9973	162.4111	3.84E-06
306	0.4000	0.0200	1.0000	0.0587	5.0137	162.9444	3.84E-06
307	0.4000	0.0200	1.0000	0.0589	5.0301	163.4778	3.84E-06
308	0.4000	0.0200	1.0000	0.0590	5.0465	164.0111	3.84E-06
309	0.4000	0.0200	1.0000	0.0592	5.0629	164.5444	3.84E-06
310	0.4000	0.0200	1.0000	0.0594	5.0793	165.0778	3.84E-06

Table C-2 The adsorption of mixed (1:3) SDS/PADD 4 mM into silica-packed column at electrolyte concentration of 0.01 M NaCl and temperature 25 °C.

Sample	Conductivity PADD (V)	Concentration PADD (M)	Conductivity SDS (V)	Concentration SDS (M)	Concentration mixed SDS/PADD (M)	C_{mixed}/C_0	V_{adjusted} (L)	Pore Volume (V_{adjusted}/V_0)	$\text{Time}_{\text{adjusted}}$ (min.)	Area ($\int \text{CdV}$) (mole)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-0.0022	0.2104	-6.1111	0.00E+00
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0003	0.4209	0.8333	0.00E+00
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0028	0.6313	7.7778	0.00E+00
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0053	0.8418	14.7222	0.00E+00
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0078	1.0522	21.6667	0.00E+00
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0103	1.2626	28.6111	0.00E+00
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0128	1.4731	35.5556	0.00E+00
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0153	1.6835	42.5000	0.00E+00
9	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0178	1.8939	49.4444	0.00E+00
10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0203	2.1044	56.3889	0.00E+00
11	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0228	2.3148	63.3333	0.00E+00
12	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0253	2.5253	70.2778	0.00E+00
13	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0278	2.7357	77.2222	0.00E+00
14	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0303	2.9461	84.1667	0.00E+00
15	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0328	3.1566	91.1111	0.00E+00
16	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0353	3.3670	98.0556	0.00E+00
17	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0378	3.5774	105.0000	0.00E+00
18	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0403	3.7879	111.9444	0.00E+00
19	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0428	3.9983	118.8889	0.00E+00
20	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0453	4.2088	125.8333	0.00E+00
21	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0478	4.4192	132.7778	0.00E+00
22	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0503	4.6296	139.7222	0.00E+00

Table C-2 The adsorption of mixed (1:3) SDS/PADD 4 mM into silica-packed column at electrolyte concentration of 0.01 M NaCl and temperature 25 °C (Continue).

Sample	Conductivity PADD (V)	Concentration PADD (M)	Conductivity SDS (V)	Concentration SDS (M)	Concentration mixed SDS/PADD (M)	C_{mixed}/C_0	V_{adjusted} (L)	Pore Volume (V_{adjusted}/V_0)	Time _{adjusted} (min.)	Area (jCdV) (mole)
23	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0528	4.8401	146.6667	0.00E+00
24	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0553	5.0505	153.6111	0.00E+00
25	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0578	5.2609	160.5556	0.00E+00
26	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0603	5.4714	167.5000	0.00E+00
27	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0628	5.6818	174.4444	0.00E+00
28	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0653	5.8923	181.3889	0.00E+00
29	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0678	6.1027	188.3333	0.00E+00
30	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0703	6.3131	195.2778	0.00E+00
31	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0728	6.5236	202.2222	0.00E+00
32	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0753	6.7340	209.1667	0.00E+00
33	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0778	6.9444	216.1111	0.00E+00
34	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0803	7.1549	223.0556	0.00E+00
35	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0828	7.3653	230.0000	0.00E+00
36	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0853	7.5758	236.9444	0.00E+00
37	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0878	7.7862	243.8889	0.00E+00
38	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0903	7.9966	250.8333	0.00E+00
39	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0928	8.2071	257.7778	0.00E+00
40	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0953	8.4175	264.7222	0.00E+00
41	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0978	8.6279	271.6667	0.00E+00
42	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1003	8.8384	278.6111	0.00E+00
43	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1028	9.0488	285.5556	0.00E+00
44	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1053	9.2593	292.5000	0.00E+00

Table C-2 The adsorption of mixed (1:3) SDS/PADD 4 mM into silica-packed column at electrolyte concentration of 0.01 M NaCl and temperature 25 °C (Continue).

Sample	Conductivity PADD (V)	Concentration PADD (M)	Conductivity SDS (V)	Concentration SDS (M)	Concentration mixed SDS/PADD (M)	C_{mixed}/C_0	$V_{adjusted}$ (L)	Pore Volume ($V_{adjusted}/V_0$)	Time _{adjusted} (min.)	Area ($\int CdV$) (mole)
45	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1078	9.4697	299.4444	0.00E+00
46	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1103	9.6801	306.3889	0.00E+00
47	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1128	9.8906	313.3333	0.00E+00
48	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1153	10.1010	320.2778	0.00E+00
49	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1178	10.3114	327.2222	0.00E+00
50	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1203	10.5219	334.1667	0.00E+00
51	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1228	10.7323	341.1111	0.00E+00
52	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1253	10.9428	348.0556	0.00E+00
53	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1278	11.1532	355.0000	0.00E+00
54	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1303	11.3636	361.9444	0.00E+00
55	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1328	11.5741	368.8889	0.00E+00
56	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1353	11.7845	375.8333	0.00E+00
57	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1378	11.9949	382.7778	0.00E+00
58	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1403	12.2054	389.7222	0.00E+00
59	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1428	12.4158	396.6667	0.00E+00
60	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1453	12.6263	403.6111	0.00E+00
61	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1478	12.8367	410.5556	0.00E+00
62	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1503	13.0471	417.5000	0.00E+00
63	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1528	13.2576	424.4444	0.00E+00
64	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1553	13.4680	431.3889	0.00E+00
65	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1578	13.6785	438.3333	0.00E+00
66	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1603	13.8889	445.2778	0.00E+00

Table C-2 The adsorption of mixed (1:3) SDS/PADD 4 mM into silica-packed column at electrolyte concentration of 0.01 M NaCl and temperature 25 °C (Continue).

Sample	Conductivity PADD (V)	Concentration PADD (M)	Conductivity SDS (V)	Concentration SDS (M)	Concentration mixed SDS/PADD (M)	C_{mixed}/C_0	V_{adjusted} (L)	Pore Volume (V_{adjusted}/V_0)	Time _{adjusted} (min.)	Area (jCdV) (mole)
67	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1628	14.0993	452.2222	0.00E+00
68	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1653	14.3098	459.1667	0.00E+00
69	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1678	14.5202	466.1111	0.00E+00
70	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1703	14.7306	473.0556	0.00E+00
71	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1728	14.9411	480.0000	0.00E+00
72	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1753	15.1515	486.9444	0.00E+00
73	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1778	15.3620	493.8889	0.00E+00
74	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1803	15.5724	500.8333	0.00E+00
75	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1828	15.7828	507.7778	0.00E+00
76	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1853	15.9933	514.7222	0.00E+00
77	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1878	16.2037	521.6667	0.00E+00
78	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1903	16.4141	528.6111	0.00E+00
79	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1928	16.6246	535.5556	0.00E+00
80	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1953	16.8350	542.5000	0.00E+00
81	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1978	17.0455	549.4444	0.00E+00
82	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.2003	17.2559	556.3889	0.00E+00
83	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.2028	17.4663	563.3333	0.00E+00
84	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.2053	17.6768	570.2778	0.00E+00
85	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.2078	17.8872	577.2222	0.00E+00
86	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.2103	18.0976	584.1667	0.00E+00
87	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.2128	18.3081	591.1111	0.00E+00
88	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.2153	18.5185	598.0556	0.00E+00

Table C-2 The adsorption of mixed (1:3) SDS/PADD 4 mM into silica-packed column at electrolyte concentration of 0.01 M NaCl and temperature 25 °C (Continue).

Sample	Conductivity PADD (V)	Concentration PADD (M)	Conductivity SDS (V)	Concentration SDS (M)	Concentration mixed SDS/PADD (M)	C_{mixed}/C_0	$V_{adjusted}$ (L)	Pore Volume ($V_{adjusted}/V_0$)	$Time_{adjusted}$ (min.)	Area ($\int CdV$) (mole)
89	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.2178	18.7290	605.0000	0.00E+00
90	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.2203	18.9394	611.9444	0.00E+00
91	0.0000	0.0000	0.0056	0.0000	0.0000	0.0001	0.2228	19.1498	618.8889	3.56E-10
92	0.6035	0.0000	0.3118	0.0000	0.0001	0.0150	0.2253	19.3603	625.8333	7.54E-08
93	1.1000	0.0001	0.5284	0.0000	0.0001	0.0268	0.2278	19.5707	632.7778	2.09E-07
94	1.9424	0.0001	1.0509	0.0001	0.0002	0.0489	0.2303	19.7811	639.7222	3.79E-07
95	3.0966	0.0002	2.0239	0.0001	0.0003	0.0825	0.2328	19.9916	646.6667	6.57E-07
96	4.0500	0.0003	2.9001	0.0001	0.0004	0.1111	0.2353	20.2020	653.6111	9.68E-07
97	6.7339	0.0005	3.7003	0.0002	0.0007	0.1703	0.2378	20.4125	660.5556	1.41E-06
98	8.9891	0.0007	4.2005	0.0002	0.0009	0.2179	0.2403	20.6229	667.5000	1.94E-06
99	11.4088	0.0008	5.1512	0.0003	0.0011	0.2742	0.2428	20.8333	674.4444	2.46E-06
100	15.0514	0.0011	6.3780	0.0003	0.0014	0.3564	0.2453	21.0438	681.3889	3.15E-06
101	18.0443	0.0013	7.0987	0.0004	0.0017	0.4203	0.2478	21.2542	688.3333	3.88E-06
102	19.8667	0.0015	8.6001	0.0004	0.0019	0.4728	0.2503	21.4646	695.2778	4.47E-06
103	20.9147	0.0015	9.1884	0.0005	0.0020	0.4995	0.2528	21.6751	702.2222	4.86E-06
104	22.9130	0.0017	10.5100	0.0005	0.0022	0.5529	0.2553	21.8855	709.1667	5.26E-06
105	24.1114	0.0018	11.9987	0.0006	0.0024	0.5938	0.2578	22.0960	716.1111	5.73E-06
106	27.1000	0.0020	12.6630	0.0006	0.0026	0.6569	0.2603	22.3064	723.0556	6.25E-06
107	30.1003	0.0022	12.9800	0.0007	0.0029	0.7157	0.2628	22.5168	730.0000	6.86E-06
108	32.2033	0.0024	13.1000	0.0007	0.0030	0.7556	0.2653	22.7273	736.9444	7.36E-06
109	34.1220	0.0025	13.8644	0.0007	0.0032	0.8004	0.2678	22.9377	743.8889	7.78E-06
110	36.1000	0.0026	14.9822	0.0008	0.0034	0.8508	0.2703	23.1481	750.8333	8.26E-06

Table C-2 The adsorption of mixed (1:3) SDS/PADD 4 mM into silica-packed column at electrolyte concentration of 0.01 M NaCl and temperature 25 °C (Continue).

Sample	Conductivity PADD (V)	Concentration PADD (M)	Conductivity SDS (V)	Concentration SDS (M)	Concentration mixed SDS/PADD (M)	C_{mixed}/C_0	$V_{adjusted}$ (L)	Pore Volume ($V_{adjusted}/V_0$)	Time _{adjusted} (min.)	Area ($\int CdV$) (mole)
111	37.6650	0.0027	15.7000	0.0008	0.0036	0.8886	0.2728	23.3586	757.7778	8.70E-06
112	38.1000	0.0028	16.2935	0.0008	0.0036	0.9041	0.2753	23.5690	764.7222	8.96E-06
113	39.5677	0.0029	16.8723	0.0009	0.0038	0.9383	0.2778	23.7795	771.6667	9.21E-06
114	39.8466	0.0029	17.5656	0.0009	0.0038	0.9523	0.2803	23.9899	778.6111	9.45E-06
115	40.7000	0.0030	18.1000	0.0009	0.0039	0.9748	0.2828	24.2003	785.5556	9.64E-06
116	41.1000	0.0030	18.4300	0.0009	0.0039	0.9863	0.2853	24.4108	792.5000	9.81E-06
117	41.1000	0.0030	18.8900	0.0010	0.0040	0.9922	0.2878	24.6212	799.4444	9.89E-06
118	41.1000	0.0030	18.9788	0.0010	0.0040	0.9933	0.2903	24.8316	806.3889	9.93E-06
119	41.1000	0.0030	19.2000	0.0010	0.0040	0.9962	0.2928	25.0421	813.3333	9.95E-06
120	41.1000	0.0030	19.3988	0.0010	0.0040	0.9987	0.2953	25.2525	820.2778	9.97E-06
121	41.1000	0.0030	19.5000	0.0010	0.0040	1.0000	0.2978	25.4630	827.2222	9.99E-06
122	41.1000	0.0030	19.5000	0.0010	0.0040	1.0000	0.3003	25.6734	834.1667	1.00E-05
123	41.1000	0.0030	19.5000	0.0010	0.0040	1.0000	0.3028	25.8838	841.1111	1.00E-05
124	41.1000	0.0030	19.5000	0.0010	0.0040	1.0000	0.3053	26.0943	848.0556	1.00E-05
125	41.1000	0.0030	19.5000	0.0010	0.0040	1.0000	0.3078	26.3047	855.0000	1.00E-05
126	41.1000	0.0030	19.5000	0.0010	0.0040	1.0000	0.3103	26.5152	861.9444	1.00E-05
127	41.1000	0.0030	19.5000	0.0010	0.0040	1.0000	0.3128	26.7256	868.8889	1.00E-05
128	41.1000	0.0030	19.5000	0.0010	0.0040	1.0000	0.3153	26.9360	875.8333	1.00E-05
129	41.1000	0.0030	19.5000	0.0010	0.0040	1.0000	0.3178	27.1465	882.7778	1.00E-05
130	41.1000	0.0030	19.5000	0.0010	0.0040	1.0000	0.3203	27.3569	889.7222	1.00E-05

BIOGRAPHY

Miss Sita Krajangpan was born in Bangkok, Thailand, on 18 March 1979. In year 2001, she graduated in Bachelor of Science, Major in Environmental Science, Department of General Science, Faculty of Science at Chulalongkorn University, Bangkok, Thailand. Moreover in 1999, she got a Diploma of Analytical Chemistry Training, Major in Analytical Chemistry, Faculty of Science from Chulalongkorn University. After graduation, she had experiences in environmental issues at a consultant agency. In At the time of this study, she was an M.S. student with a major in Environmental Management at the National Research Center for Environmental and Hazardous Waste Management (NRC-EHWM), Chulalongkorn University, Bangkok, Thailand.

