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APPENDICES

APPENDIX A

Experimental Data of Contact Angle for Non-Stoichiometric Ratios of Surfactant and Counterion

Table A-1 The contact angle of sodium dodecyl sulfate (NaDS).

[Na] = 4.05 M, [DS] = 1.44×10^{-4} M

Volume (μL)	Advancing angle	Receding angle
20	64.9	14.1
30	65.4	25.4
40	66.5	32.4
50	66.9	41.4
60	69	50.4
70	67.6	58.5

Table A-2 The contact angle of sodium dodecyl sulfate (NaDS).

[Na] = 1.25 M, [DS] = 2.10×10^{-4} M

Volume (μL)	Advancing angle	Receding angle
20	50	4
30	51.4	11.3
40	50.1	23
50	48.4	27
60	48.6	35.1
70	49.4	39.8

Table A-3 The contact angle of sodium dodecyl sulfate (NaDS).[Na] = 2.54 M, [DS] = 1.85×10^{-4} M

Volume (μL)	Advancing angle	Receding angle
20	57.2	9.4
30	53.5	18.7
40	55.9	27.4
50	57.9	38.5
60	57.3	41.6
70	55.8	50.2

Table A-4 The contact angle of sodium dodecyl sulfate (NaDS).[Na] = 2.84 M, [DS] = 2.39×10^{-4} M

Volume (μL)	Advancing angle	Receding angle
20	57.8	9.5
30	57.5	20.1
40	57.4	29.2
50	57.7	35.3
60	58.6	48.8
70	56.3	54.8

Table A-5 The contact angle of sodium dodecyl sulfate (NaDS).[Na] = 1.51 M, [DS] = 1.54×10^{-4} M

Volume (μL)	Advancing angle	Receding angle
20	53.8	11.4
30	52.2	17.7
40	55.2	29.3
50	54.8	35.9
60	53.2	45.1
70	57.3	53.6

Table A-6 The contact angle of sodium dodecyl sulfate (NaDS).[Na] = 1.33 M, [DS] = 1.72×10^{-4} M

Volume (μL)	Advancing angle	Receding angle
20	53.6	7.5
30	50.7	18.3
40	53.2	24.2
50	53.6	37.1
60	53.9	42.9
70	56.9	49.8

Table A-7 The contact angle of calcium dodecyl sulfate (CaDS).[Ca] = 9.23×10^{-4} M. [DS] = 1.94×10^{-4} M

Volume (μL)	Advancing angle	Receding angle
20	42.8	16.9
30	43.3	23.6
40	43.5	28.1
50	45.7	34.9
60		43.6
70	48.7	

Table A-8 The contact angle of calcium dodecyl sulfate (CaDS).[Ca] = 2.00×10^{-4} M. [DS] = 3.64×10^{-4} M

Volume (μL)	Advancing angle	Receding angle
20	39.9	6.6
30	44.8	16
40	48.6	24.4
50	46.4	35.3
60	47.9	37.2
70	47.2	

Table A-9 The contact angle of calcium dodecyl sulfate (CaDS).[Ca] = 4.49×10^{-4} M, [DS] = 2.11×10^{-4} M

Volume (μL)	Advancing angle	Receding angle
20	53.6	15.8
30	50.1	24.2
40	50.6	30.3
50	46.1	35.9
60	46.4	43.1
70	49.6	

Table A-10 The contact angle of calcium dodecyl sulfate (CaDS).[Ca] = 8.73×10^{-4} M, [DS] = 1.01×10^{-3} M

Volume (μL)	Advancing angle	Receding angle
20	46.8	
30	49.7	7.6
40	47.4	14.6
50	47.2	26.9
60	48.3	38.4
70	48.6	

Table A-11 The contact angle of calcium dodecyl sulfate (CaDS).[Ca] = 8.38×10^{-4} M, [DS] = 4.72×10^{-4} M

Volume (μL)	Advancing angle	Receding angle
20	43.6	2
30	43.6	4.9
40	42.8	17.6
50	43.2	28.7
60	42.6	34.1
70	43.2	38.5

Table A-12 The contact angle of calcium dodecyl sulfate (CaDS).[Ca] = 7.06×10^{-4} M, [DS] = 5.60×10^{-4} M

Volume (μ L)	Advancing angle	Receding angle
20	48.8	4
30	47.2	15
40	47	19.7
50	46.2	28.7
60	47.1	36.7
70	46	43.8

Table A-13 The contact angle of sodium tetradecyl sulfate (NaTS).[Na] = 1.13×10^{-3} M, [TS] = 1.06×10^{-3} M

Volume (μ L)	Advancing angle	Receding angle
20	47.2	
30	51	9.7
40	45	24.1
50	44.8	32.6
60	51	37.1
70	44.1	41.2

Table A-14 The contact angle of sodium tetradecyl sulfate (NaTS).[Na] = 7.83×10^{-3} M, [TS] = 6.66×10^{-4} M

Volume (μ L)	Advancing angle	Receding angle
20	49	8.4
30	47.6	17.3
40	48	22.3
50	46.6	32.6
60	48.9	36.2
70	49.4	43

Table A-15 The contact angle of sodium tetradecyl sulfate (NaTS).[Na] = 5.65×10^{-3} M. [TS] = 6.51×10^{-4} M

Volume (μL)	Advancing angle	Receding angle
20	49.7	6.5
30	51.7	13
40	48.8	23.3
50	49.6	27.3
60	49.4	36.9
70	51.7	42

Table A-16 The contact angle of sodium tetradecyl sulfate (NaTS).[Na] = 1.43×10^{-3} M. [TS] = 8.65×10^{-4} M

Volume (μL)	Advancing angle	Receding angle
20	51.2	11.6
30	51.4	19.5
40	51.5	28.3
50	49.8	33.9
60	52.4	40.9
70	53.3	47.7

Table A-17 The contact angle of sodium tetradecyl sulfate (NaTS).[Na] = 2.17×10^{-3} M. [TS] = 8.54×10^{-4} M

Volume (μL)	Advancing angle	Receding angle
20	52.7	7.7
30	49.4	13
40	48.4	27.3
50	49.8	28.8
60	48.9	38.6
70	48.4	45.9

Table A-18 The contact angle of sodium tetradecyl sulfate (NaTS).

$[\text{Na}] = 2.09 \times 10^{-3} \text{ M}$, $[\text{TS}] = 1.10 \times 10^{-3} \text{ M}$

Volume (μL)	Advancing angle	Receding angle
20	50.1	9
30	48.8	19.2
40	48.6	30
50	49.5	35.3
60	51.8	41.2
70	50.2	48.2

Table A-19 The contact angle of calcium tetradecyl sulfate (CaTS).

$[\text{Ca}] = 6.09 \times 10^{-4} \text{ M}$, $[\text{TS}] = 1.26 \times 10^{-4} \text{ M}$

Volume (μL)	Advancing angle	Receding angle
20	49.4	10
30	51.6	17.2
40	54.2	23.9
50	51.1	41.2
60	50.2	40.1
70		

Table A-20 The contact angle of calcium tetradecyl sulfate (CaTS).

$[\text{Ca}] = 2.99 \times 10^{-4} \text{ M}$, $[\text{TS}] = 1.08 \times 10^{-4} \text{ M}$

Volume (μL)	Advancing angle	Receding angle
20	55.1	3.9
30	56.4	13.8
40	52.9	23.7
50	52.8	26.7
60	50	30
70	49.7	32.6

Table A-21 The contact angle of calcium tetradecyl sulfate (CaTS).[Ca] = 3.29×10^{-4} M, [TS] = 1.02×10^{-4} M

Volume (μ L)	Advancing angle	Receding angle
20	46.8	
30	41.4	5.5
40	49.2	16.8
50	48.2	29.7
60	52.1	35.7
70	49.6	41.8

Table A-22 The contact angle of calcium tetradecyl sulfate (CaTS).[Ca] = 1.22×10^{-3} M, [TS] = 1.10×10^{-4} M

Volume (μ L)	Advancing angle	Receding angle
20	45	
30	50.9	
40	43.4	8.9
50	42	16.6
60	46.1	23.4
70	41.2	34.9

Table A-23 The contact angle of calcium tetradecyl sulfate (CaTS).[Ca] = 6.11×10^{-4} M, [TS] = 1.12×10^{-4} M

Volume (μ L)	Advancing angle	Receding angle
20	47.6	
30	49.9	11.2
40	44.5	13
50	43.7	24.2
60	36.5	29.1
70	39.1	33.4

Table A-24 The contact angle of calcium tetradecyl sulfate (CaTS).[Ca] = 7.88×10^{-4} M, [TS] = 9.58×10^{-5} M

Volume (μL)	Advancing angle	Receding angle
20	46.1	
30	45.3	2.8
40	46.8	9.8
50	41.9	18.3
60	41.8	21.7
70	41.2	27.6

Table A-25 The contact angle of sodium octadecyl sulfate (NaOS).[Na] = 2.61×10^{-4} M, [OS] = 9.36×10^{-5} M

Volume (μL)	Advancing angle	Receding angle
20	73	13.1
30	74.3	24.5
40	78.5	37.9
50	72.7	44.1
60	77.7	59
70	75.4	68

Table A-26 The contact angle of sodium octadecyl sulfate (NaOS).[Na] = 6.26×10^{-4} M, [OS] = 5.99×10^{-5} M

Volume (μL)	Advancing angle	Receding angle
20	69.2	21.4
30	73.1	31.5
40	75.8	40.2
50	75.5	46.5
60	73.3	61
70	76.1	73.1

Table A-27 The contact angle of sodium octadecyl sulfate (NaOS).[Na] = 5.74×10^{-4} M. [OS] = 6.97×10^{-5} M

Volume (μ L)	Advancing angle	Receding angle
20	72.8	13
30	70.2	26.1
40	73	33.2
50	73.1	45.9
60	68.8	49.8
70	71.4	64.8

Table A-28 The contact angle of sodium octadecyl sulfate (NaOS).[Na] = 1.17×10^{-3} M. [OS] = 7.54×10^{-5} M

Volume (μ L)	Advancing angle	Receding angle
20	70.9	11.7
30	69.3	22.4
40	72	38.7
50	73.2	50.2
60	67.4	54.1
70	71.5	66.3

Table A-29 The contact angle of sodium octadecyl sulfate (NaOS).[Na] = 1.96×10^{-3} M. [OS] = 5.04×10^{-5} M

Volume (μ L)	Advancing angle	Receding angle
20	73.1	11.8
30	74.5	22.4
40	69.8	37.9
50	71.8	43.7
60	72.5	51.8
70	71.2	61.8

Table A-30 The contact angle of sodium octadecyl sulfate (NaOS).[Na] = 3.50×10^{-3} M, [OS] = 5.16×10^{-5} M

Volume (μL)	Advancing angle	Receding angle
20	68.8	13.6
30	69.2	23.3
40	68.4	35.2
50	68.6	43.5
60	70.1	54.7
70	69.1	66.4

Table A-31 The contact angle of calcium octadecyl sulfate (CaOS).[Ca] = 1.17×10^{-4} M, [OS] = 3.16×10^{-5} M

Volume (μL)	Advancing angle	Receding angle
20	91.8	38.6
30	97.1	50.4
40	102.6	65.8
50	102.8	74.6
60	103.5	84.4
70	99.6	98.2

Table A-32 The contact angle of calcium octadecyl sulfate (CaOS).[Ca] = 1.70×10^{-4} M, [OS] = 2.87×10^{-5} M

Volume (μL)	Advancing angle	Receding angle
20	99.6	28.5
30	94.6	44.7
40	94.4	53.1
50	93.4	64.3
60	93.4	77.7
70	91.4	83.4

Table A-33 The contact angle of calcium octadecyl sulfate (CaOS).[Ca] = 8.86×10^{-5} M, [OS] = 2.93×10^{-5} M

Volume (μL)	Advancing angle	Receding angle
20	102	32.7
30	92.9	47.5
40	93.8	62.1
50	94	72.5
60	92.8	83.7
70	93.5	92.7

Table A-34 The contact angle of calcium octadecyl sulfate (CaOS).[Ca] = 9.98×10^{-5} M, [OS] = 2.42×10^{-5} M

Volume (μL)	Advancing angle	Receding angle
20	92.6	33.7
30	91.9	46.4
40	94.3	60.5
50	94.1	76
60	95.7	80.9
70	94.7	94.3

Table A-35 The contact angle of calcium octadecyl sulfate (CaOS).[Ca] = 3.54×10^{-4} M, [OS] = 1.87×10^{-5} M

Volume (μL)	Advancing angle	Receding angle
20	98.1	30.3
30	90.9	44.1
40	91.4	54
50	94	78.2
60	93.5	76.8
70	99.9	87.6

Table A-36 The contact angle of calcium octadecyl sulfate (CaOS).[Ca] = 3.46×10^{-4} M, [OS] = 2.00×10^{-5} M

Volume (μ L)	Advancing angle	Receding angle
20	94.5	52.5
30	91.6	70.6
40	95.2	81.9
50	99.7	97.7
60	99.9	
70		

Table A-37 The contact angle of calcium octanoate (CaC₈).[Ca] = 4.86×10^{-3} M, [C₈] = 1.32×10^{-2} M

Volume (μ L)	Advancing angle	Receding angle
20	93	38.6
30	93.5	48.7
40	88.6	62.2
50	90.5	67.3
60	91.5	79.6
70	95.2	87.6

Table A-38 The contact angle of calcium octanoate (CaC₈).[Ca] = 2.74×10^{-3} M, [C₈] = 0.68×10^{-2} M

Volume (μ L)	Advancing angle	Receding angle
20		53.5
30	94.8	66.6
40	94.4	74.1
50	94	86.3
60	92.3	89.6
70	91.9	

Table A-39 The contact angle of calcium octanoate (CaC_8).

$[\text{Ca}] = 4.64 \times 10^{-3} \text{ M}$. $[\text{C}_8] = 0.91 \times 10^{-2} \text{ M}$

Volume (μL)	Advancing angle	Receding angle
20		
30	93.2	
40	89.9	51.4
50	90.9	62.6
60	92	72.8
70	91.2	82.1

Table A-40 The contact angle of calcium octanoate (CaC_8).

$[\text{Ca}] = 5.31 \times 10^{-3} \text{ M}$. $[\text{C}_8] = 1.03 \times 10^{-2} \text{ M}$

Volume (μL)	Advancing angle	Receding angle
20		
30	93.6	48.7
40	91.5	60
50	95.1	72
60	93.1	84.6
70	96.2	90

Table A-41 The contact angle of calcium dodecanoate (CaC_{12}).

$[\text{Ca}] = 5.74 \times 10^{-4} \text{ M}$. $[\text{C}_{12}] = 4.50 \times 10^{-5} \text{ M}$

Volume (μL)	Advancing angle	Receding angle
20	86.4	56.6
30	82.9	64.2
40	85.7	59.5
50	84.7	72.1
60	85.8	80.7
70		

Table A-42 The contact angle of calcium dodecanoate (CaC_{12}).

$$[\text{Ca}] = 3.49 \times 10^{-4} \text{ M}, [\text{C}_{12}] = 4.79 \times 10^{-5} \text{ M}$$

Volume (μL)	Advancing angle	Receding angle
20	83.6	41.5
30	79.8	47.7
40	86.6	51.4
50	83	59.7
60	81.9	72.5
70	82.7	77.8

Table A-43 The contact angle of calcium dodecanoate (CaC_{12}).

$$[\text{Ca}] = 3.24 \times 10^{-4} \text{ M}, [\text{C}_{12}] = 5.81 \times 10^{-5} \text{ M}$$

Volume (μL)	Advancing angle	Receding angle
20	85.1	41.1
30	84.5	45.4
40	85.2	51.5
50	84.9	58.9
60	83.5	68.1
70	84	83.2

Table A-44 The contact angle of calcium dodecanoate (CaC_{12}).

$$[\text{Ca}] = 2.44 \times 10^{-4} \text{ M}, [\text{C}_{12}] = 1.05 \times 10^{-4} \text{ M}$$

Volume (μL)	Advancing angle	Receding angle
20	83.4	34.6
30	80.9	50
40	79.3	55.4
50	83.3	57.5
60	82.4	62.1
70	84.1	78.9

Table A-45 The contact angle of tetradecyl trimethylammonium bromide

[TTA], M	[Br], M	Advancing angle	Surface tension. mN/M
5.27×10^{-4}	6.325	spread	38.8
6.43×10^{-4}	5.527	spread	33.1
8.27×10^{-4}	5.848	spread	55.8
9.23×10^{-4}	6.071	spread	44.8
1.65×10^{-3}	5.503	spread	33.3
1.67×10^{-3}	5.204	spread	33.3
1.71×10^{-3}	5.974	spread	33.3
2.37×10^{-3}	5.187	spread	33.4
4.21×10^{-3}	5.000	spread	33.7

Table A-46 The contact angle of hexadecyl trimethylammonium bromide

[HTA], M	[Br], M	Advancing angle	Surface tension. mN/M
7.92×10^{-4}	2.377	12.55	32.6
8.11×10^{-4}	6.160	11.07	33.6
8.68×10^{-4}	4.318	23.08	32.8
8.91×10^{-4}	0.867	17.76	29.1
9.92×10^{-4}	1.599	21.46	32.9
1.16×10^{-3}	5.096	4.57	32.6
1.66×10^{-3}	1.928	16	32.9
1.76×10^{-3}	0.613	15.68	32.8
1.85×10^{-3}	1.024	23.43	32.7
1.91×10^{-3}	3.808	9.62	33.2
0.27×10^{-3}	0.695	23.16	33.7

Table A-47 The contact angle of octadecyl trimethylammonium bromide

[OTA], M	[Br], M	Advancing angle	Surface tension, mN/M
5.38×10^{-4}	0.006	31.87	64.5
5.89×10^{-4}	0.021	39.07	50.5
6.4×10^{-4}	0.01	31.35	60.5

APPENDIX B

Experimental Data of Contact Angle with Effect of pH

Table B-1 The contact angle of dodecanoic acid (HC₁₂). pH= 4.0.

$\gamma = 70.8 \text{ mN/M}$

Volume (μL)	Advancing angle	Receding angle
20	80	32.2
30	79.7	41.5
40	82.5	47
50	81.7	51
60	83.3	60.9
70	81.4	74.4

Table B-2 The contact angle of dodecanoic acid (HC₁₂). pH= 5.03.

$\gamma = 58.2 \text{ mN/M}$

Volume (μL)	Advancing angle	Receding angle
20	70.8	
30	77.7	
40	74.4	47.2
50	77.5	49.2
60	82.2	53.2
70	77.7	60.3

Table B-3 The contact angle of dodecanoic acid (HC₁₂). pH= 7.0.

$\gamma = 62.6 \text{ mN/M}$

Volume (μL)	Advancing angle	Receding angle
20	76.3	35
30	79.8	43.7
40	80.9	49.3
50	80.1	54
60	82.7	59.7
70	80.3	69.3

Table B-4 The contact angle of dodecanoic acid (HC₁₂). pH= 9.0.

$\gamma = 69.6 \text{ mN/M}$

Volume (μL)	Advancing angle	Receding angle
20	72	36
30	80	47
40	76.1	46.7
50	80	49.5
60	75.7	54.7
70	78.1	60.7

Table B-5 The contact angle of hexadecanoic acid (HC₁₆). pH= 4.0.

$\gamma = 68.2 \text{ mN/M}$

Volume (μL)	Advancing angle	Receding angle
20	77.6	21.1
30	82.1	33.8
40	83.7	45.5
50	83.2	54.6
60	85.1	65.6
70	83.7	73.7

Table B-6 The contact angle of hexadecanoic acid (HC₁₆). pH= 5.97. $\gamma = 70.0$ mN/M

Volume (μ L)	Advancing angle	Receding angle
20	75.2	20.9
30	79.4	32.4
40	81.6	44
50	84.5	57.1
60	85.4	69.7
70	84.5	77.6

Table B-7 The contact angle of hexadecanoic acid (HC₁₆). pH= 9.0. $\gamma = 70.9$ mN/M

Volume (μ L)	Advancing angle	Receding angle
20	81.6	27.9
30	81.4	39.3
40	81.4	53.9
50	83.8	62
60	81	72.8
70	82.7	79.9

Table B-8 The contact angle of hexadecanoic acid (HC₁₆). pH= 10.0. $\gamma = 70$ mN/M

Volume (μ L)	Advancing angle	Receding angle
20	80.7	29.1
30	81.2	44
40	80.7	56.8
50	82.5	70.5
60	83.8	81.3
70	90.9	83.8

APPENDIX C

Experimental Data of Contact Angle for Mix Surfactant System, and Contact Angle with Time

Table C-1 The contact angle of calcium dodecanoate + NaDS.

[NaDS] = 0.0005 M, $\gamma = 49.7$ mN/M

Volume (μL)	Advancing angle	Receding angle
20	74.1	38.7
30	74	43.7
40	76.1	49.1
50	78.1	53.3
60	77.8	63.4
70	78	72.4

Table C-2 The contact angle of calcium dodecanoate + NaDS.

[NaDS] = 0.001 M, $\gamma = 35.8$ mN/M

Volume (μL)	Advancing angle	Receding angle
20	66.9	29.2
30	67.3	37.4
40	69.5	41.7
50	70.6	50.3
60	70.1	58.4
70	69.3	64.7

Table C-3 The contact angle of calcium dodecanoate + NaDS.[NaDS] = 0.01 M, $\gamma = 35.4$ mN/M

Volume (μL)	Advancing angle	Receding angle
20	61.6	5.7
30	53.2	13
40	51.7	24.8
50	55	32.3
60	56.8	39.6
70	57.1	47.4

Table C-4 The contact angle of calcium dodecanoate + NaDS.[NaDS] = 0.05 M, $\gamma = 37.5$ mN/M

Volume (μL)	Advancing angle	Receding angle
20	55.5	5
30	53.6	11.9
40	56.6	18.9
50	53.7	26.8
60	52.7	33.7
70	49.4	39.3

Table C-5 The contact angle of calcium dodecanoate + NaDS.[NaDS] = 0.1 M, $\gamma = 37.3$ mN/M

Volume (μL)	Advancing angle	Receding angle
20	56.8	5.2
30	51.8	13.2
40	51.7	23.1
50	52.8	27.7
60	50.5	40.6
70	52	46.6

Table C-6 The contact angle of calcium dodecanoate + NaDS.[NaDS] = 0.2 M, $\gamma = 36$ mN/M

Volume (μL)	Advancing angle	Receding angle
20	58.5	9
30	52.8	13.8
40	48.2	25.5
50	50.3	34.4
60	51.4	41.8
70	49	49.2

Table C-7 The advancing contact angle of hexadecanoic acid with time for cyclic experiment

Time (s)	θ_A (1 st cycle)	θ_A (2 nd cycle)	θ_A (3 rd cycle)	θ_A (4 th cycle)
0	88.1	71.2	57.6	50.4
5	87.1	66.1	56.4	51.5
15	85.4	65.7	54.6	49.7
30	85.7	64.7	54.3	48.8
60	84.3	63.4	53	48.3
300	85.3	63.7	52	48.9
600	82.6	60.3	52	48.5
1200	81	58.3	49.4	43.7

Table C-8 The receding contact angle of hexadecanoic acid with time for different drop volume

Time (s)	θ_R (40 μL)	θ_R (50 μL)	θ_R (60 μL)	θ_R (70 μL)
0	26	47	68.8	81
5	24.9	46.1	67.6	80
15	24.7	46.7	63.3	79.8
30	23	46.1	65.5	80.5
60	21.7	45.4	62.2	79.4
300	22.4	43.6	62.4	79.2
600	21	45.3	58.1	80
1200	15.6	43.8	57.4	81.4

APPENDIX D

Figure of Contact Angle for Each Experiment

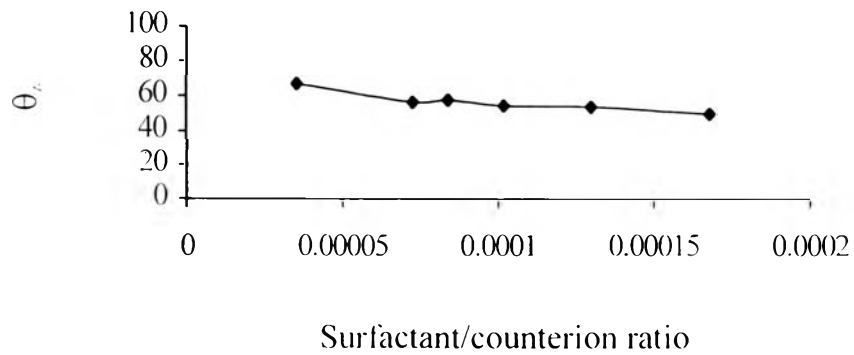


Figure D-1 The average advancing contact angle of sodium dodecyl sulfate with varying surfactant/counterion ratios (Table 4.3)

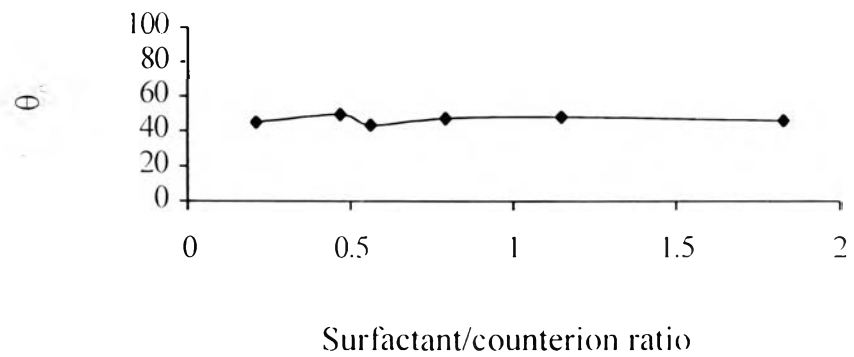


Figure D-2 The average advancing contact angle of calcium dodecyl sulfate with varying surfactant/counterion ratios (Table 4.3)

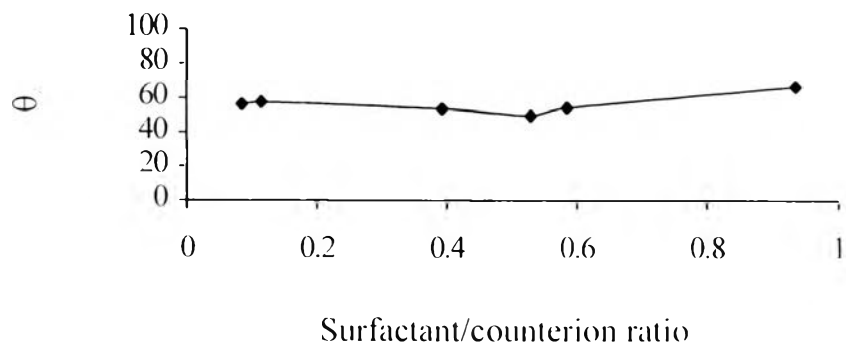


Figure D-3 The average advancing contact angle of sodium tetradecyl sulfate with varying surfactant/counterion ratios (Table 4.3)

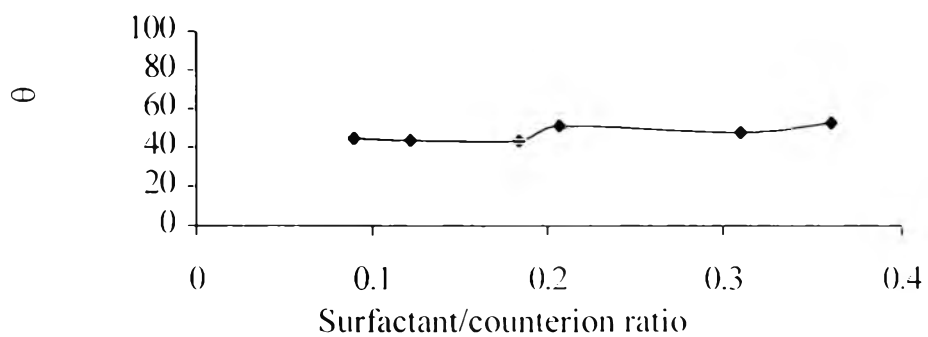


Figure D-4 The average advancing contact angle of calcium tetradecyl sulfate with varying surfactant/counterion ratios (Table 4.3)

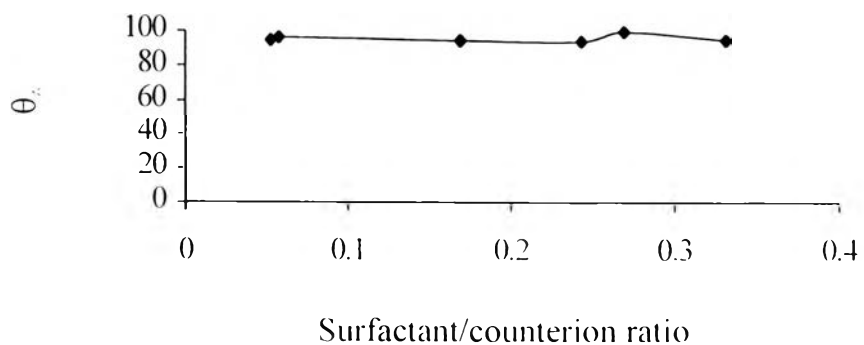


Figure D-5 The average advancing contact angle of sodium octadecyl sulfate with varying surfactant/counterion ratios (Table 4.3)

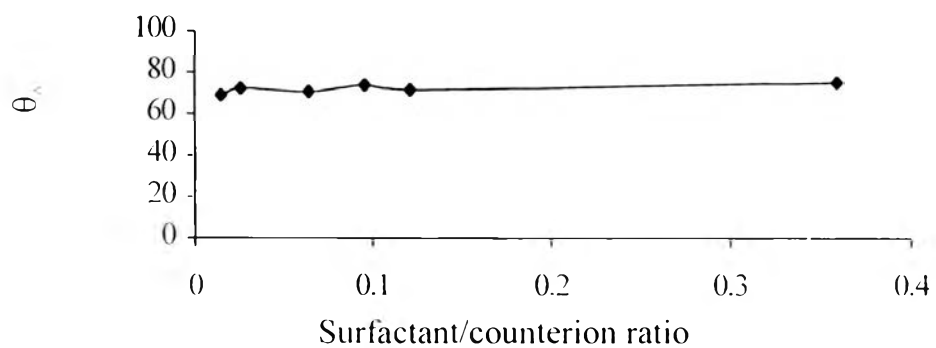


Figure D-6 The average advancing contact angle of calcium octadecyl sulfate with varying surfactant/counterion ratios (Table 4.3)

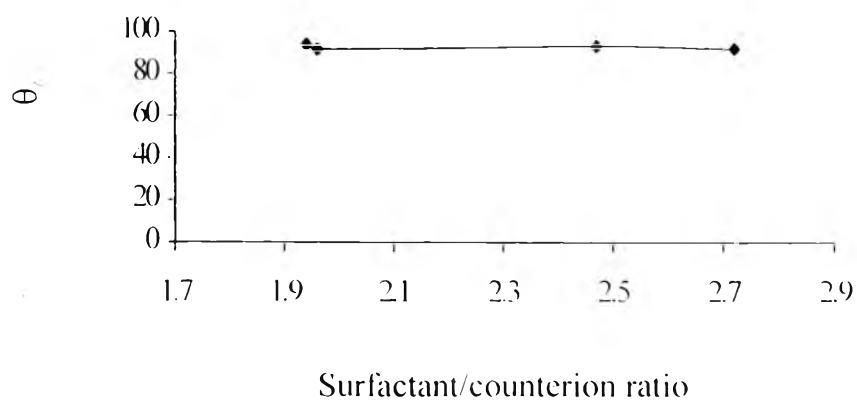


Figure D-7 The average advancing contact angle of calcium octanoate with varying surfactant/counterion ratios (Table 4.3)

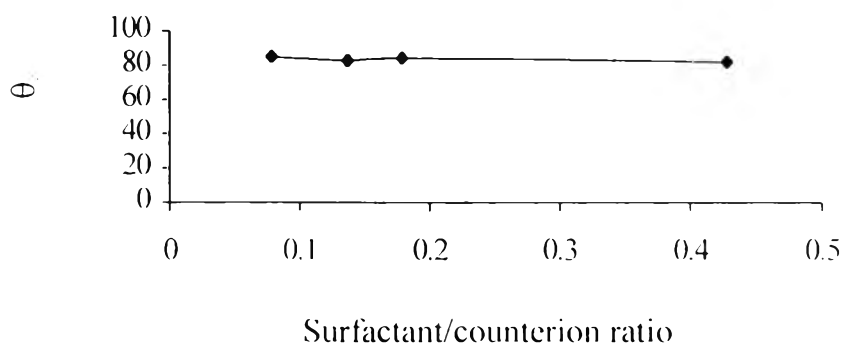


Figure D-8 The average advancing contact angle of calcium dodecanoate with varying surfactant/counterion ratios (Table 4.3)

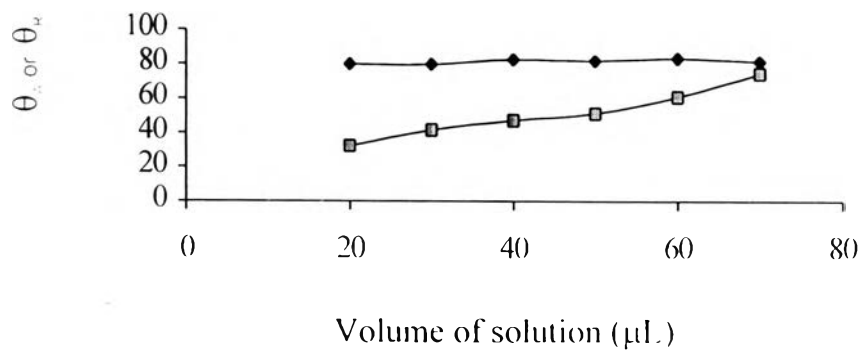


Figure D-9 The advancing (\blacklozenge) and receding (\blacksquare) contact angle of dodecanoic acid at pH= 4.0

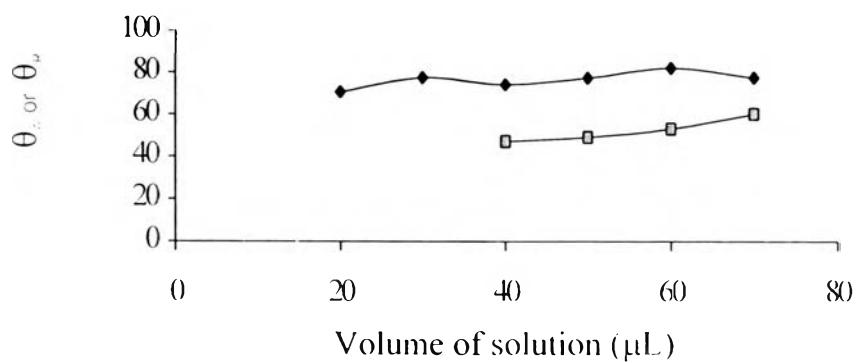


Figure D-10 The advancing (\blacklozenge) and receding (\blacksquare) contact angle of dodecanoic acid at pH= 5.03

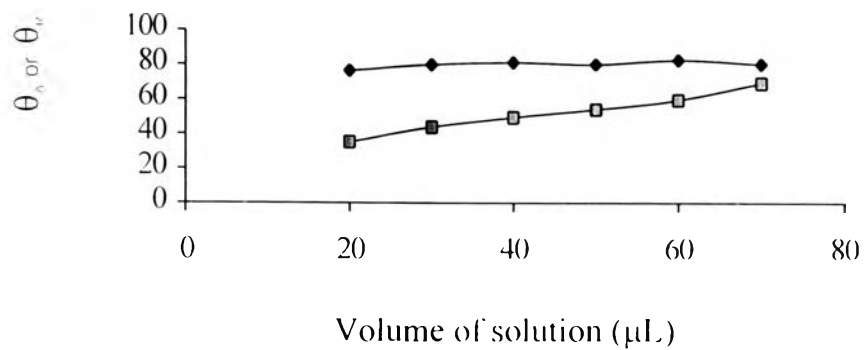


Figure D-11 The advancing (\blacklozenge) and receding (\blacksquare) contact angle of dodecanoic acid at pH= 7.0

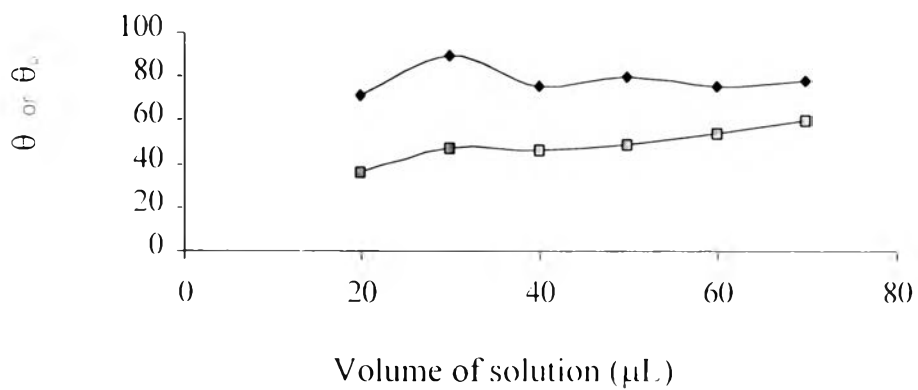


Figure D-12 The advancing (\blacklozenge) and receding (\blacksquare) contact angle of dodecanoic acid at pH= 9.0

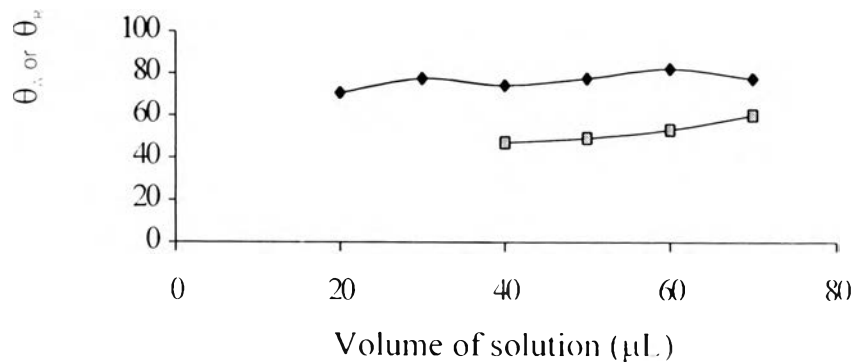


Figure D-13 The advancing (\blacklozenge) and receding (\blacksquare) contact angle of hexadecanoic acid at pH= 4.0

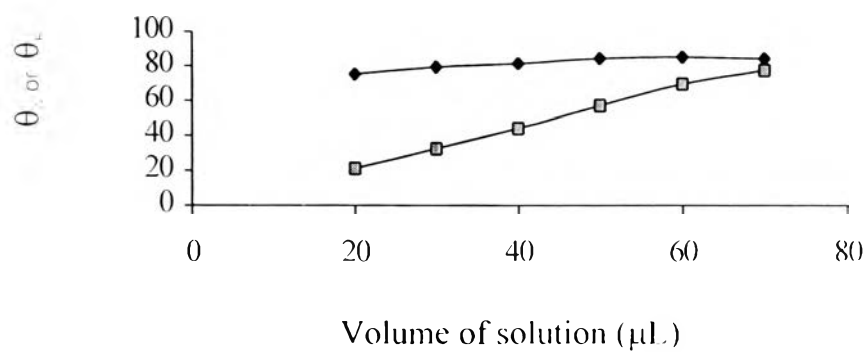


Figure D-14 The advancing (\blacklozenge) and receding (\blacksquare) contact angle of hexadecanoic acid at pH= 5.97

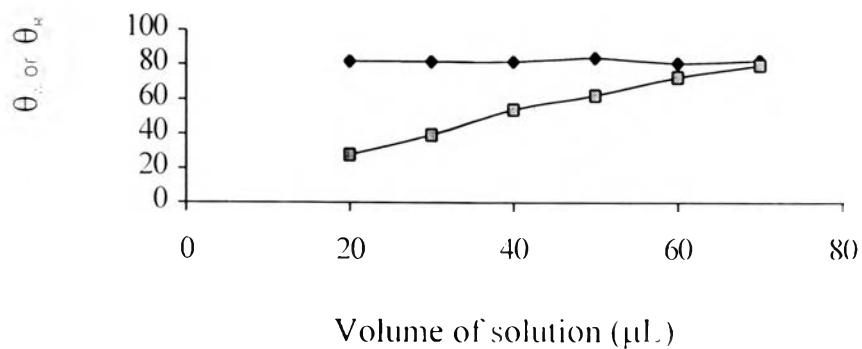


Figure D-15 The advancing (\blacklozenge) and receding (\blacksquare) contact angle of hexadecanoic acid at pH= 9.0

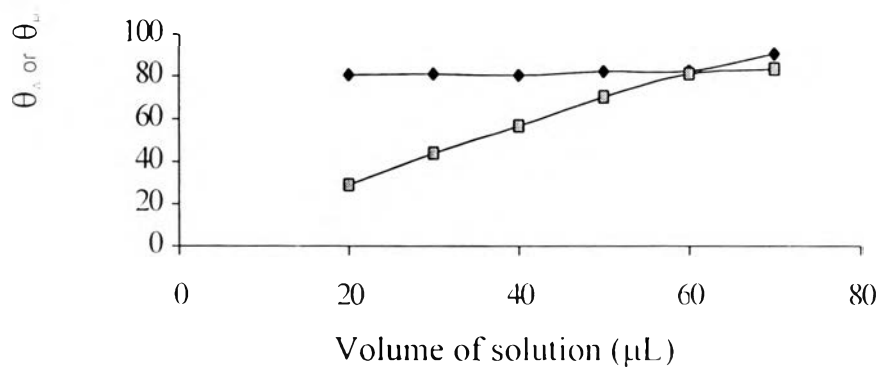


Figure D-16 The advancing (\blacklozenge) and receding (\blacksquare) contact angle of hexadecanoic acid at pH= 10.0

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